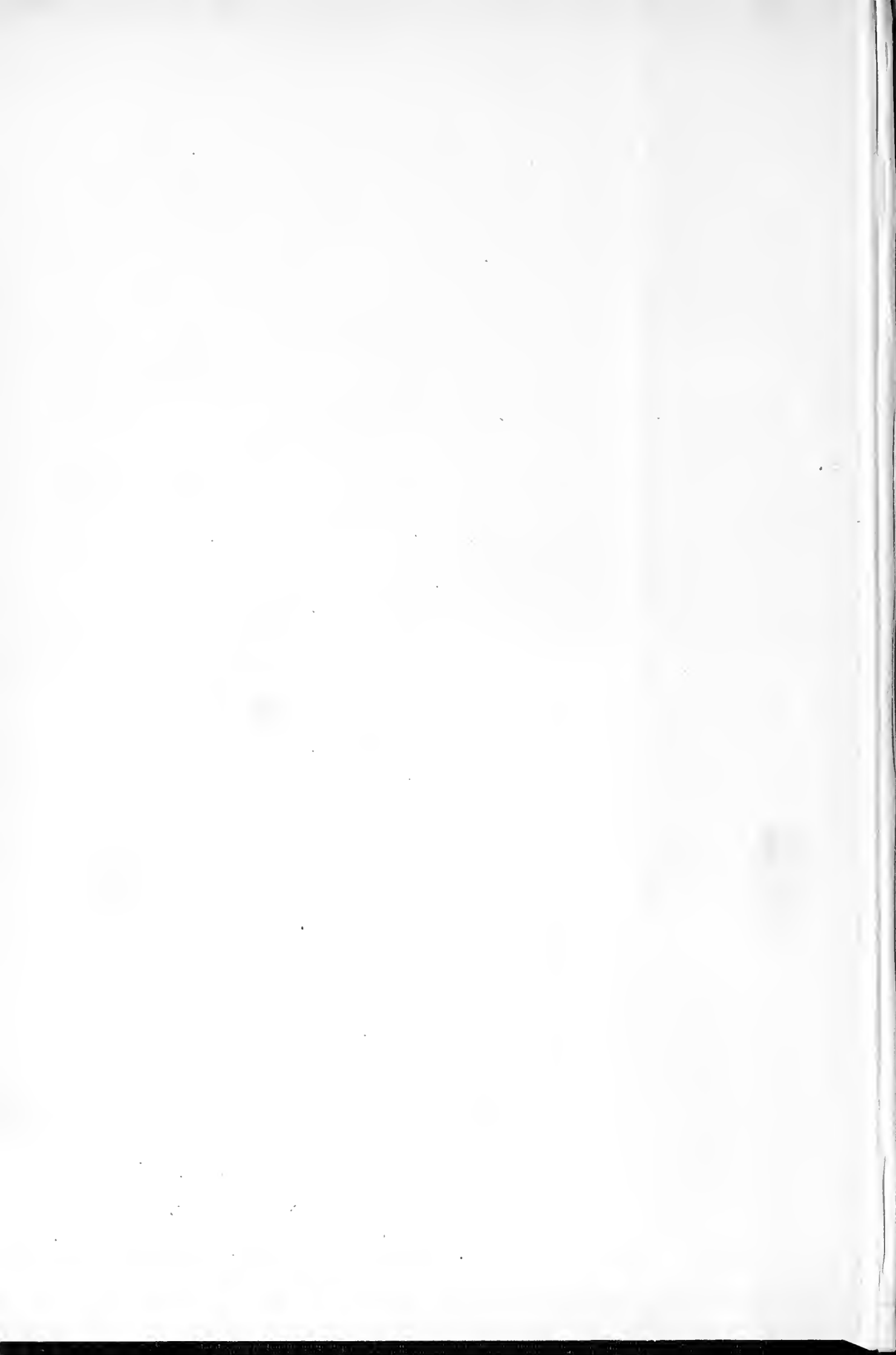


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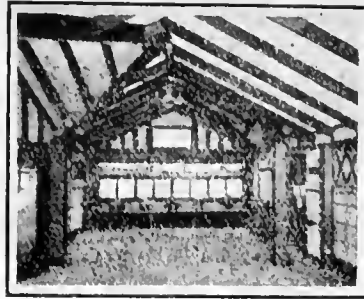
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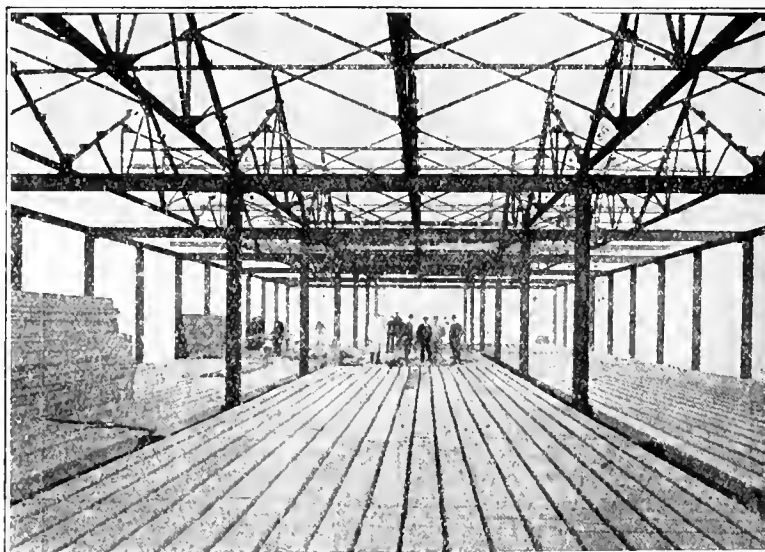
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Effingham House.

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Strand, W.C.2

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School for Cripples and Deaf Children, Bolton Road, Bradford. Plans and sections, also general layout plan. Mr. W. Williamson, Licentiate R.I.B.A., City Architect.	

Currente Calamo.

The engineers and their employers have peacefully agreed to a forty-seven hours per week work, and if, as is understood, the arrangement is only temporary we believe it will only be towards still shorter hours. We believe they are quite possible, because, as Lord Leverhulme, who believes in a six-hours day, tells us, in his book just published, the maintenance of our position among the nations "will require that all able-bodied men and women from school-age to dotage, of all ranks and stations, shall be workers for six hours each day for six days each week. There will be no place in the whole British Empire for the idle rich or the idle or 'canny poor.'" We sincerely hope so, and that the Government will set an example, and not indulge in the nepotism of the past four years which has created posts and filled them with its partisans and their friends at the cost of millions to the nation. Good wages and shorter hours for the workmen, combined with better directions by the employers, and the use of up-to-date machinery and appliances, and the better education of the craftsman, will increase and better output, which will lower prices, stimulate demand, and lead to further and further increased production. And if that increased output can be confined to things of real use and beauty the waste of the making of the rubbish that tempts the masses to demoralising extravagance in the purchase thereof will be avoided, and good taste will not grudge a fair price for good things, and we shall all be wealthier in the right sense of the word.

Alterations are being undertaken at the Palace of Westminster during the interval between the Parliaments in order to meet various feminine demands. Before the dissolution these were contemplated mainly as affecting the admission of women as "strangers," but now that they are likely to be in attendance as members the changes will need to be more extensive. The extremely confined space in which the House of Commons is built presents enormous difficulties in the way of the Office of Works. The Legislative Chamber itself was never sufficiently large from its earliest design after the

fire of 1834 to seat the 658 members originally assumed to be provided for, or the 670 under the Redistribution Act of 1885. Now that the total is raised to 707, the inadequacy of the provision will be decidedly more apparent; but it is in the direction of the smoking rooms, tea rooms, and other "clubbable" parts of the building that the officials are finding difficulty. A serious-minded member of the Gladstone Administration of 1892, says the London correspondent of the *Birmingham Daily Post*, when Mr. Herbert (now Lord) Gladstone, as First Commissioner of Works, successfully endeavoured to improve the social amenities of the building, exclaimed to him in the lobby in sombre tones, "My dear sir, the House of Commons is being turned into a casino." Possibly that will be its ultimate destiny, and dancing added to the little amusements which for years past have beguiled the leisure of the male members!

Disgust has been expressed at the action of the Manchester City Council in regard to the war memorial tablets, or shrines—129 in number—which have been placed in various parts of the city. The Paving and Highways Committee of the Council have thought it wise to exact a rent of 1s. a year for each memorial, and also an agreement from the owners of the property freeing the Corporation from responsibility. The committee argue that they are responsible for every projection on property, and therefore for any damage which may arise through the decay of such projections, and that in making these charges they are following a very old practice. Against this it is urged that an exception to the ordinary rule might have been made in these cases, and it is pointed out that, apart from the annual payment, there is the cost of the agreement stamp (2s. 6d.). The action of the committee has been ratified by the City Council, but it is not unlikely, says the *Manchester Guardian*, that a change may be made at the instance of the committee in the course of the next month. It is already sufficiently obvious, we think that not a few war memorials are of a more or less inappropriate and inartistic character, and destined to but a fleeting existence, but control at the time of their erection, not the levy of "rents" is what is needed.

With reference to the proposed Edinburgh Castle War Memorial scheme, "A Scot" writes to the *Scotsman* suggesting that, as the next step of the Committee will be to secure an architect worthy of the coming competition, "it is quite possible that our little country cannot provide an architect great enough for the task. Let the Committee then be given a mandate by the public to employ genius from any part of the globe regardless of nationality." "There is," he continues, "no fear of Scottish architects not receiving a fair chance. On the contrary, the dice will be heavily weighted in their favour. They will have a handicap of knowledge and sympathy which it will be hard indeed for any foreigner to overtake, but if he can do so, then let him be employed. Scotsmen have gone out throughout all the world, and to return the best the world has to give is not too good for those we wish to honour. We have, for instance, given of our best to succour Serbia, and why should not Serbia now be allowed to give of her best, though in another form, to Scotland? It might not be easy to accept it, but it is often more generous to receive than to give. Still more difficult would it be to take help from England; the antagonism to our 'hereditary enemy' dies hard, and an Englishman's plans would have to be incomparably the best to be accepted by a Scottish War Memorial Committee. (Yet most of us would think it quite seemly that a Scot should be chosen to design an English memorial, so great is that very real asset, national conceit.) Everyone must be agreed that it would be most fitting that the Castle memorial should be designed by a Scottish architect, and we would all hope that even in an all-world competition a Scot would win, but to start on the supposition that only a Scot should be employed seems to be unjust—unjust to our great deal. The first to support this view should be the architects of Scotland. We propose to erect a memorial to Scottish heroes, and not to Scottish architects, and patriotism and self-respect alike demand that they should welcome an international competition; to resent it would be to acknowledge inferiority. We can well afford to disregard thrusts about Scottish meanness and lack of humour. Is our armour as proven when it comes to parochialism? Let us show that it is by employing the best man—yea, even though he be a Sassenach."

That enough potash to make us for ever independent of Germany in this important particular may be obtained as a by-product of our present manufacture of Portland cement, and that our Government should encourage the cement men to put in plants for this purpose, or possibly take up this branch of industry itself in some way, are the theses of an open letter to President Wilson, written by Richard H. Edmonds, and printed in the *Manufacturers' Record*, of which he is the editor. Mr. Edmonds tells us, says the *Library Digest*, that the cement industry is, in fact, the longed-for source of potash for which Government and private experts have been seeking for years. He says that a few years ago a Portland cement company in California found that it was feasible to save a considerable amount of potash as a by-product in the making of cement. A Maryland company sent experts to California, and their investigations were so satisfactory that this company spent 100,000 dollars in putting up a by-product potash plant. This has now been in operation for several years, and has been so successful in making potash that a large number of other cement companies are preparing to establish by-product potash plants in connection with cement-making. It has also been proved that potash can be recovered as a by-product in the manufacture of pig-iron. If every Portland cement plant and every pig-iron furnace in the country could establish, in connection with their present plants, potash recovery systems, we would be able to make ourselves entirely independent for ever of Germany's potash. In doing this we should give new impetus to all the agricultural interests of the country and fundamentally stimulate the production of food-stuff. The establishment of this industry on so large a scale would at the same time, it is insisted, stimulate the utilisation of the waste materials in other industries for potash production.

THE EFFECT OF HYDRATED LIME ON THE STRENGTH OF CONCRETE.

Some interesting tests recently made on the effect which various percentages of hydrated lime in concrete have on the compressive strength of the latter are contained in a report issued by the Hydrated Lime Bureau of the National Lime Manufacturers' Association. One of the most important developments in connection with the use of concrete that has been made in recent months is the discovery that the strength of concrete is governed almost entirely by the volume-ratio of water to cement. Generally speaking, a ratio of 0.4 to 1 gives maximum strength, while a ratio of 2 to 1 gives practically no strength. It is well known that a mixture containing just sufficient water to develop maximum strength is of too dry a consistency to permit being worked economically; so it has become the custom of engineers to permit the use of larger quantities of water in order to allow the contractor to place the mixture in the forms without employing too much labour.

The difficulty with this compromise, however, is that the contractor generally

uses too great a quantity of water. The engineer realises that as the quantity of water increases, the strength of the concrete decreases; so in order to protect himself against too great a decrease, he insists that the concrete be placed with the minimum amount of water that will permit reasonably easy handling. This minimum amount of water is usually not sufficient to satisfy the contractor, because he realises that with slightly larger quantities of water the material can be handled with less labour.

Hence these two opposing factors govern to a great extent the strength actually obtained in the finished concrete, and the logical solution of the problem is to introduce such methods as will reduce the water content to a minimum and meet the objection of the engineer, and at the same time improve the workability of the mixture to meet the objection of the contractor. The method employed by the State Highway Department of Delaware is the introduction of a percentage of hydrated lime, and the results obtained are given below. The proportions of the mixture used by the Delaware State Highway Department in all of its road construction are 1:2:4.

These tests are of unusual interest because of the fact that they were conducted under actual working conditions, the test specimens being taken directly from the concrete as it was being placed. The results, therefore, give a true indication of the actual strength of the concrete in the finished road.

Those who have closely studied the action of hydrated lime in concrete have been frank in stating that the function of hydrated lime is to improve concrete under field conditions, a result not so apparent under laboratory conditions. The reason for this is that concrete specimens as made in the laboratory are prepared under most favourable conditions of workmanship and of a drier consistency than concrete as placed in the field. In addition, it is the usual custom to store laboratory specimens under water, in a damp closet, or in damp sand. Under these conditions the specimens have an opportunity to develop maximum strength, so that such specimens are practically perfect, and other things being equal, the possibility for improvement is limited to the personal equation of the operator. In field practice the conditions are entirely different; the concrete is not so carefully proportioned or mixed; the water is not so carefully regulated, and the conditions of storage are not so favourable. The possibility for improvement of field practice, therefore, is governed not so much by the personal equation alone, as by the introduction of a material which exercises a mechanical influence over the concrete at the time of mixing, handling and placing, and which permits these operations to be carried out with the use of a minimum quantity of free water.

The following quotations are extracted from a letter by G. W. Hutchinson, testing engineer, Delaware State Highway Department, to the *Contract Record*, in which the results of his investigations are reported to Chas. M. Upham, chief engineer:—

"The specimens were 6-in. by 12-in. cylinders, and were made at the same time the concrete was being placed upon the roadbed. A chute mixer was used. The cylinder form was filled by holding it under the chute and deflecting the flow of concrete from the road into the form. All specimens of one mixture were taken from the same batch in the mixer.

"The specimens were not tamped, but

were struck off on top and then were covered in order to protect them from the rays of the sun, this being identical with the treatment given the road. After being covered for twenty-four hours, they were buried at the side of the finished concrete road, and at the time when moist earth was thrown on the road the specimens were included under this covering. They were left in place until they were six months old, and received the same treatment as the road during this period and then taken to be broken."

"As the tests were started in November, it will be seen that the specimens were subjected to the fall, winter and spring periods."

"Consistency of the mixture was determined by the inspector and myself in accordance with our ideas of an ideal working consistency. The amount of water was not measured as it was not practical under the circumstances, but the same consistency was maintained during the mixing by the agreement of opinions of the man running the mixer, the inspector and myself; that is, the specimens were poured when the consistency was unanimously agreed to by the three parties as being the same as that of the previously made specimens."

"At the end of the six months' period, the specimens were removed to the laboratories of the Henry S. Spackman Engineering Company, Philadelphia, for breaking under compression with the following results:—

COMPRESSIVE STRENGTH.		
Percentages of hydrated lime based upon the weight of Portland cement in the mixture:—		
0% lime.	2½% lime.	5% lime.
lbs. per sq. in.	lbs. per sq. in.	lbs. per sq. in.
3,108	2,908	3,596
2,203	3,640	4,351
2,529	3,475	3,473
2,613 avg.	3,341 avg.	3,816 avg.
	7½% lime.	
	lbs per sq. in.	
	3,514	
	5,092	
	4,498	
	4,368 avg.	

In breaking under compression, it was noted by the laboratory that failure of the coarse aggregate occurred in every case.

A similar series of tests on Portland cement mortars has just been published by Professor M. O. Fuller, Lehigh University, Bethlehem, Pa., in *Concrete*, which shows that the addition of hydrated lime up to 10 per cent. not only increases plasticity, but also, in some measure, the tensile strength of specimens stored in water and in earth. Mr. Fuller reports as follows:—

Our stored specimens showed greater gain in strength up to the 10-day period when lime was not present. Longer storage periods showed results in favour of the addition of lime.

In order to make the two series comparable the same brands of cement, hydrated lime and stone were used. The main object was to determine the percentage of hydrated lime that was best to increase the plasticity and impermeability of the mortar and not affect the strength of the mortar. The storage conditions were reduced to three, outdoor air, water and soil, and the time of testing 7, 14, 28, and 56 days.

Besides the tensile briquettes a set of 2-in. cubes was also made and tested in compression on a Universal testing machine.

Physical tests of the cement gave the following results: Specific gravity 3.08. Fineness, 18 per cent. retained on 200 mesh sieve. Normal consistency, 25 per cent. water. Tensile, 7-day neat

cement, 454 lb. per sq. in. 1:3 mortar, 188 lb. per sq. in. 28-day neat cement, 753 lb. per sq. in. 1:3 mortar, 326 lb. per sq. in. Compressive, 7-day neat cement, 4,701 lb. per sq. in. 1:3 mortar, 1,130 lb. per sq. in. 28-day neat cement, 6,737 lb. per sq. in. 1:3 mortar, 1,997 lb. per sq. in. Physical test of Delaware river sand screened through a No. 10 sieve gave the following results: Weight per cubic ft., 97 lb. Specific gravity, 2.63. Coefficient of uniformity, 2.78. Air voids, 38.9 per cent.

The proportions of sand and cement were taken by weight, the percentage of the total weight of the mixture being added to give what is known as working consistency, i.e., normal consistency plus 50 per cent. The hydrated lime was added to the dry cement and thoroughly mixed before adding the sand and water.

Test pieces, after being made, were stored, one-third in water, one-third buried in moist clayey soil, and the balance outdoor subject to the elements.

SUMMARY OF RESULTS.

The plotted results indicate from 5 per cent. to 12½ per cent. of hydrated lime may be added to cement mortars without seriously impairing the strength. A large number of contractors use 10 per cent. lime.

Averages of the value of tensile strength for the various ages give 10 per cent. as the best value for air and water storage, 7½ per cent. for soil storage, and 5 per cent. as the best value for all three kinds of storage.

The real value of the addition of lime to cement mortars is the increase in plasticity or workability which is very desirable from the contractors' point of view.

LOSS OF HEAT THROUGH WALLS.

The author calls attention to the importance of preventing loss of heat by radiation through the walls of houses, and states that a considerable saving of fuel could be effected by adding non-conducting composition to the walls, especially when the price of fuel is high as at present.

The thickness of walls in houses in Copenhagen is seldom more than 1½ to 2 bricks, and with a room temperature of 68° F., and a maximum winter cold of 4° F., viz., 28° F. frost, the radiation through the walls is 11 to 14.7 B.T.U. per sq. ft. per hour.

The Russian winter is more severe and houses are built with thicker walls; the cellar walls in Moscow, for instance, are about 4 ft. to 6 ft. thick, diminishing to not less than 2 ft. 3 in. at the top. The difference between the inside and outside temperature is often as much 90° F., but the loss of heat is much smaller, varying from 5.5 to 7.5 B. Th. Units per sq. ft. per hour. In other words, the Russian houses are nearly three times warmer than those in Copenhagen.

It has been proposed to fix weatherproof slabs of non-conducting material on the outside of the walls in Copenhagen. Formulas and estimates are given, showing the cost of such covering and the amount of fuel that can be saved in houses protected in this manner.

The author estimates the cost of the non-conducting material at 13s. 6d. per superficial sq. yd., but adds that part of this expense, or about 9s. per sq. yd., can be saved on the cost of the heating installation in the case of new buildings, as a much smaller heating apparatus will then suffice. The saving in fuel would be about 1s. 1d. per sq. yd. of surface per annum, which must be considered a good return on the actual extra expense for non-conducting material.

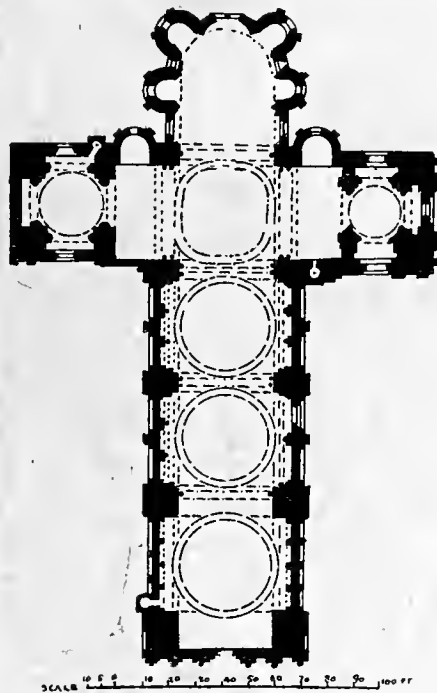
It is pointed out, however that the saving depends upon a number of circum-

stances, such as exposure to wind and rain, position relative to the sun, and the temperature to be maintained in the rooms. Sufficient insulation can, in many cases, be obtained by building the walls hollow, and this is, of course, much cheaper than affixing special non-conducting material.—(A. Schlangbusch, *Ingeniören*, November 2, 1918.)

Our Illustrations.

ANGOULÊME CATHEDRAL, FRANCE.

We give two views and the plan of the famous French Cathedral Church of St. Pierre at Angoulême. The building in all probability was commenced by Bishop Gerard de Blaye and consecrated about 1130 A.D. The plan exhibits a large apertal cross church, extremely simple and massive, with towers at the extremities of the transepts very similar to those of Exeter Cathedral. The cupola which



covers the crossing is very peculiar in its shape, being on plan a square, with the corners rounded off, rather than circular. All the cupolas rest on pendentives, but in this cupola they are much modified from the true Byzantine type. The cupola itself rests on a drum pierced with windows, an unusual form in this district. The western front differs from the severity of the interior and likewise from the external treatment of the transepts. Abadie, a prosperous French architect of the 19th century, was responsible for the restoration, mostly effected about 1856, when he added the gable and two towers. Portions of the old work remain where they escaped the very free method of renovation then so fashionable and deleterious. Prior to Abadie's connection with this church the central dome was much lower than it is now, and at that time the greater part of it was obscured by the walls of the octagon.

WOOD CARVINGS OF GOTHIC CHARACTER.

This sheet is self-explanatory, and the titles show from whence the subjects came, the majority being located in East Anglia, so noted for mediæval wood carvings. The sketches vary in scale necessarily; but figured dimensions to some give their relative values and sizes. The Eagle is probably French in origin. The wood used is oak.

SINGLE-ROOM DWELLINGS, LONGLANDS DISTRICT, BRADFORD.

This scheme provides for sixty-three single-roomed dwellings for the housing of 126 persons. The site occupied was formerly a very congested slum area, and the dwellings shown are in addition to a larger scheme of tenement buildings erected some time ago. The single-room dwellings are a departure from the type generally adopted, and has proved to be more popular than the usual tenement dwellings, because a better sense of home life and seclusion is secured. It will be seen that an effect of simplicity has been aimed at, and the elevations have been broken up with a view to avoiding an uninteresting repetition of design. Each house is provided with an iron bedstead, one leg of which is fixed to the floor. This contrivance allows the bed to be swung out into the room for cleaning purposes. These beds have a 12 in. clearance from the wall, and are fixed in a recess which is screened off at the end and the side. Cross ventilation is provided for to the rooms by means of the windows, which have a special device at the meeting rails for the admittance of fresh air, and provision against draught when closed, and each room has a foul-air-extractor flue. The buildings are erected in brickwork, the external face being roughcast, with ashlar dressings very sparingly used; the roofs are covered with Westmorland slates, and the floors are fire resisting, being of reinforced concrete, and are covered with linoleum. The estimated rents vary on the ground floor from 3s. 4d. to 4s. 6d. per week, and on the first floor 3s. 1d. to 4s. 3d. per week. The long elevation to Chain Street is illustrated, also sections of the end returns. The whole of the work has been executed by local contractors, under the supervision and to the designs of the city architect, Mr. W. Williamson, Licentiate R.I.B.A.

SCHOOL FOR CRIPPLED AND DEAF CHILDREN, BOLTON ROAD, BRADFORD.

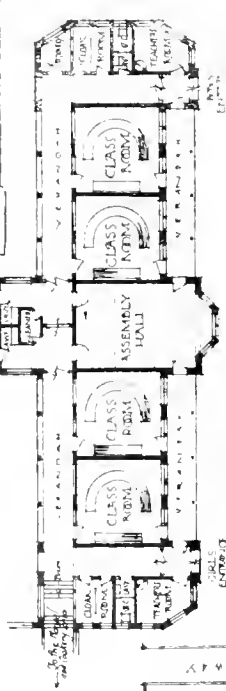
These school buildings have just been completed. They mark a further advance in the educational work of the city. The site is situate immediately off Bolton Road, and the principal entrance is from Severn Road, off Lister Lane. The buildings are one-story throughout, and are so disposed upon the site that the class-rooms and assembly halls obtain the maximum of sunlight. There are three distinct blocks of buildings, which are connected up by a covered corridor, the central block being used as a dining centre with the usual kitchen offices and for manual-work classes. At the east end is placed the deaf school and at the west end the school for physically defective children. An open corridor, with glazed roof, runs along the front and back of the class-rooms and cloak-rooms, and open-air teaching verandahs are provided at each end of the west block of buildings.

The external walls to the school have been built with local wallstones relieved by ashlar dressings, and the main roofs throughout are covered with Burlington blue slates. The flat roofs are constructed of reinforced concrete and finished with asphalt, and the verandah roofs are covered with patent glazing. The floors of the class-rooms and assembly halls are laid with maple boarding nailed to coke-breeze concrete, and those to the verandahs are laid with granolithic paving. We give the detailed plans of each of the three buildings and sections, as well as the general block plan. Mr. W. Williamson, L.R.I.B.A., the city architect, designed and supervised their erection.

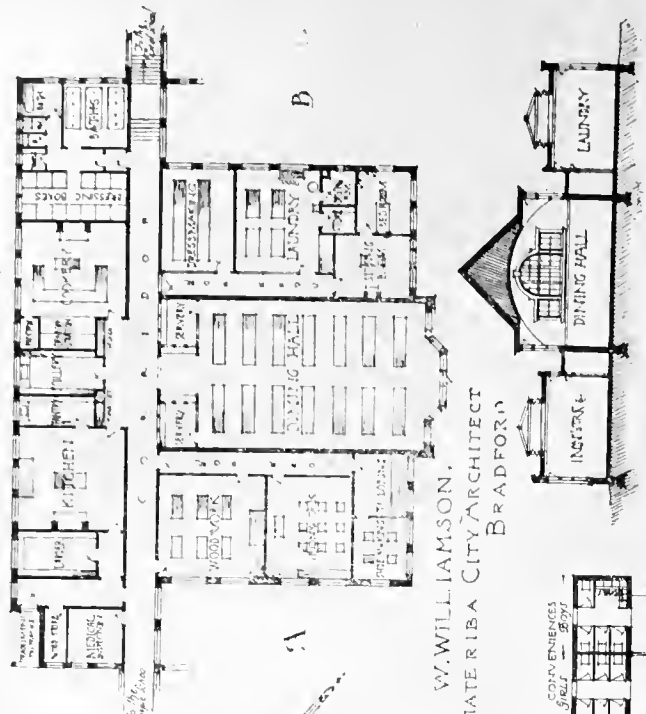
CITY OF BRADFORD :
EDUCATION COMMITTEE.

SCHOOL for CRIPPLES - MANUAL and COOKERY BLOCK
and the DEAF-SISTERHOLE.

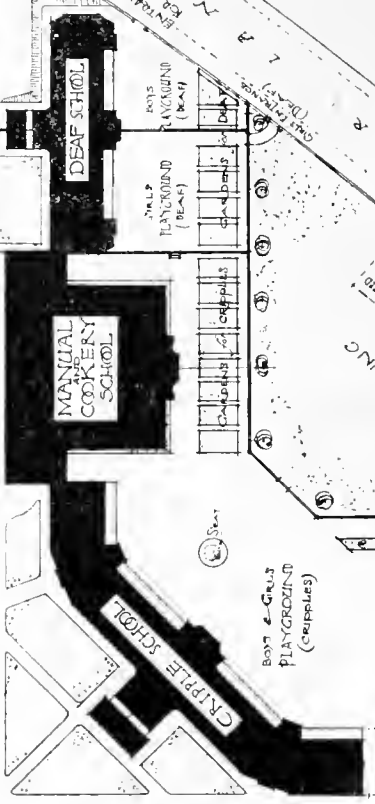
GROUND FLOOR PLAN



GROUND FLOOR PLAN

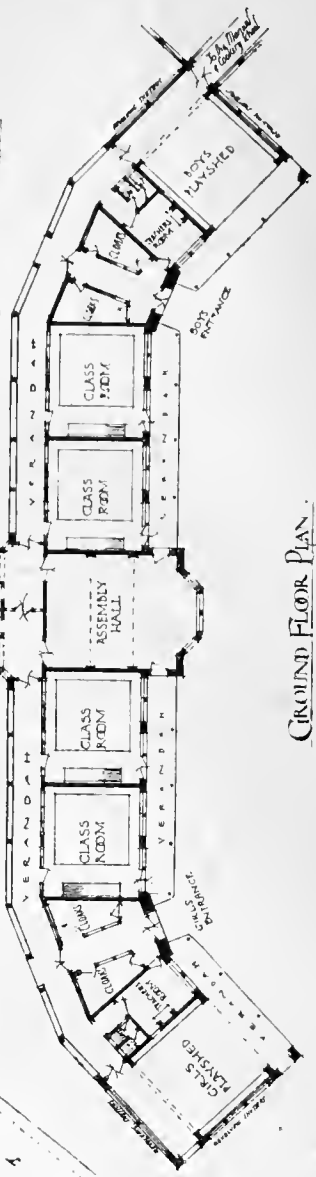


W. WILLIAMSON,
LICENTIATE RIBA CITY ARCHITECT
BRADFORD.



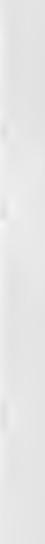
BLOCK PLAN

SECTION AB

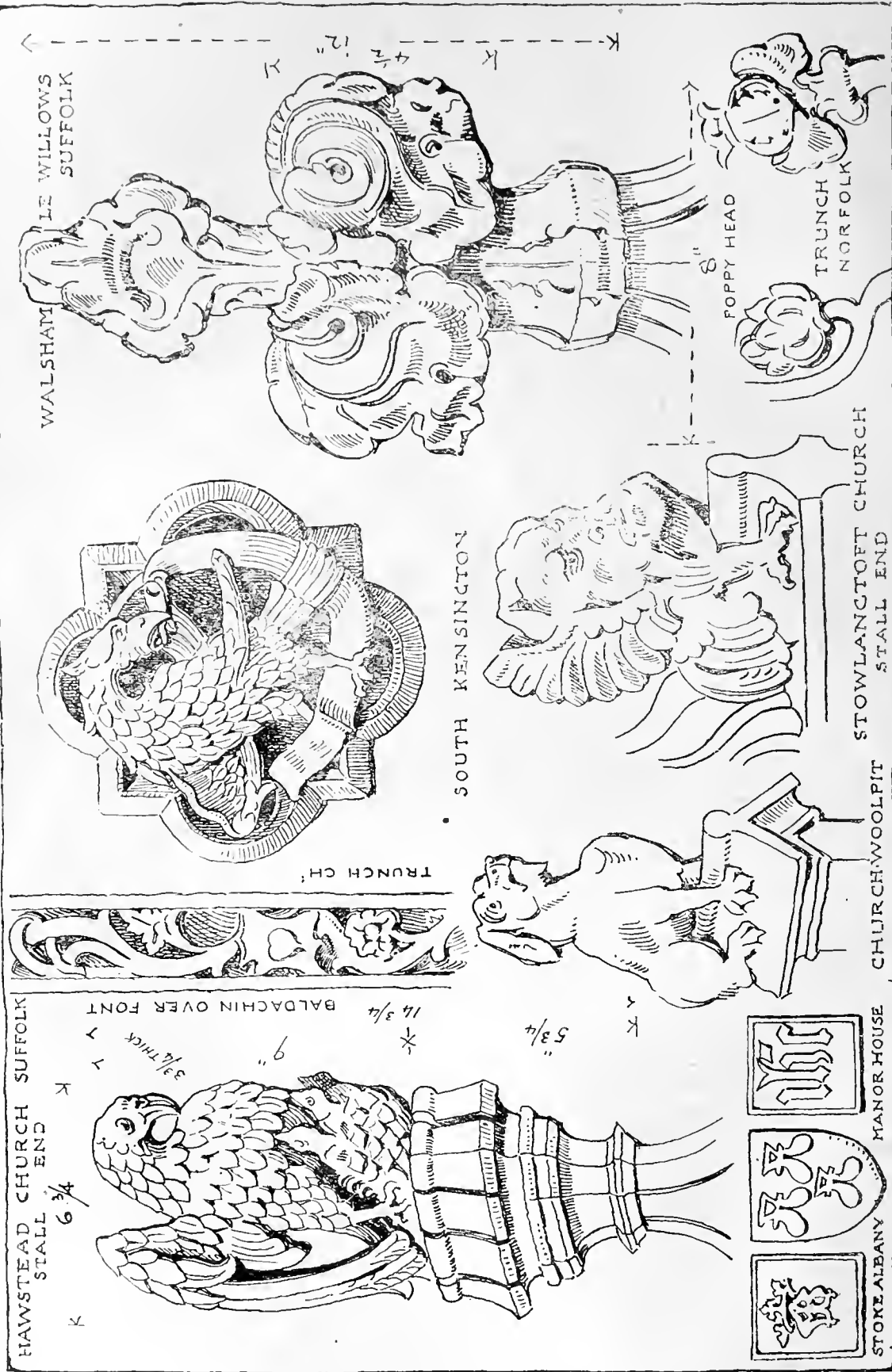


GROUND FLOOR PLAN

Scale of Feet



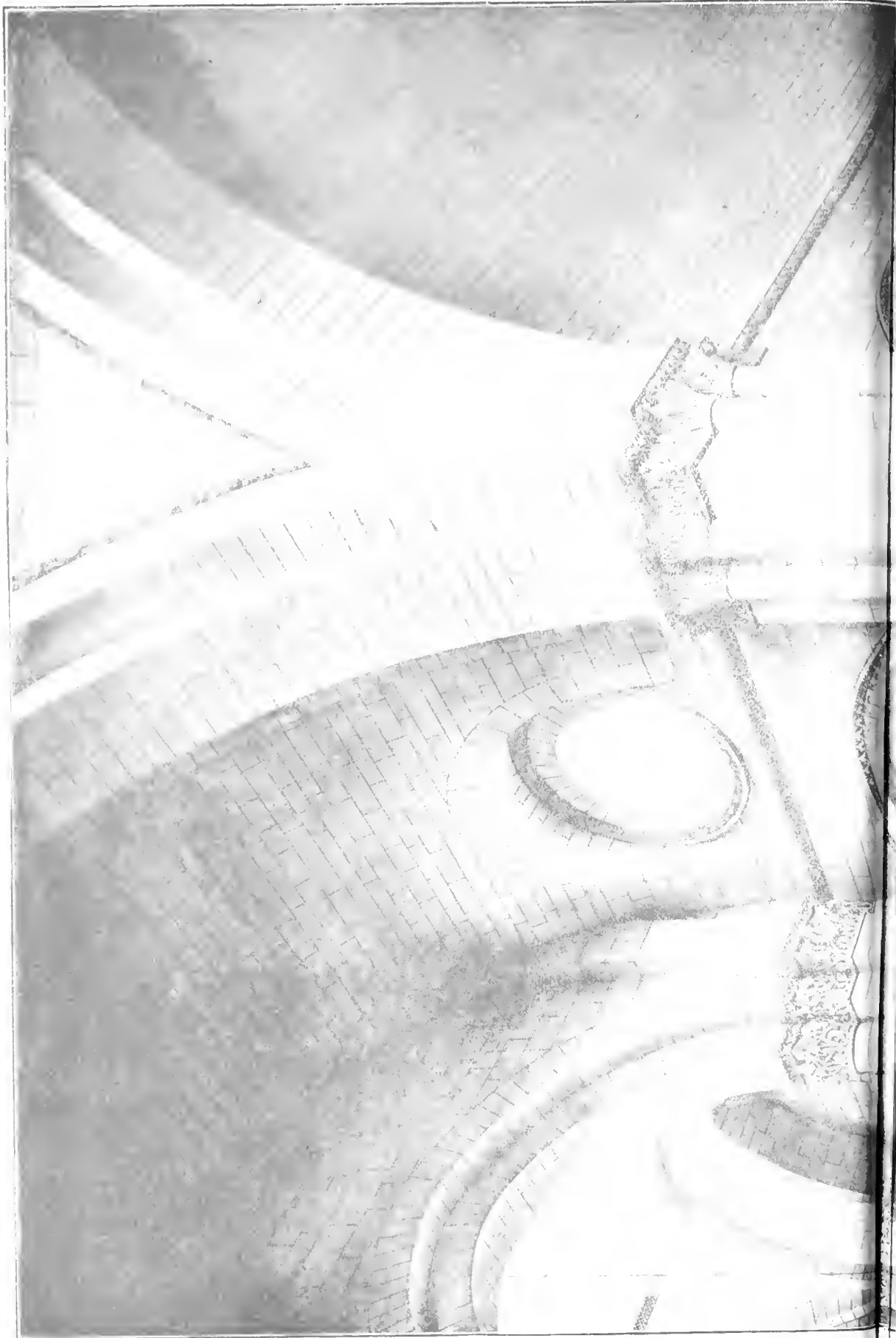


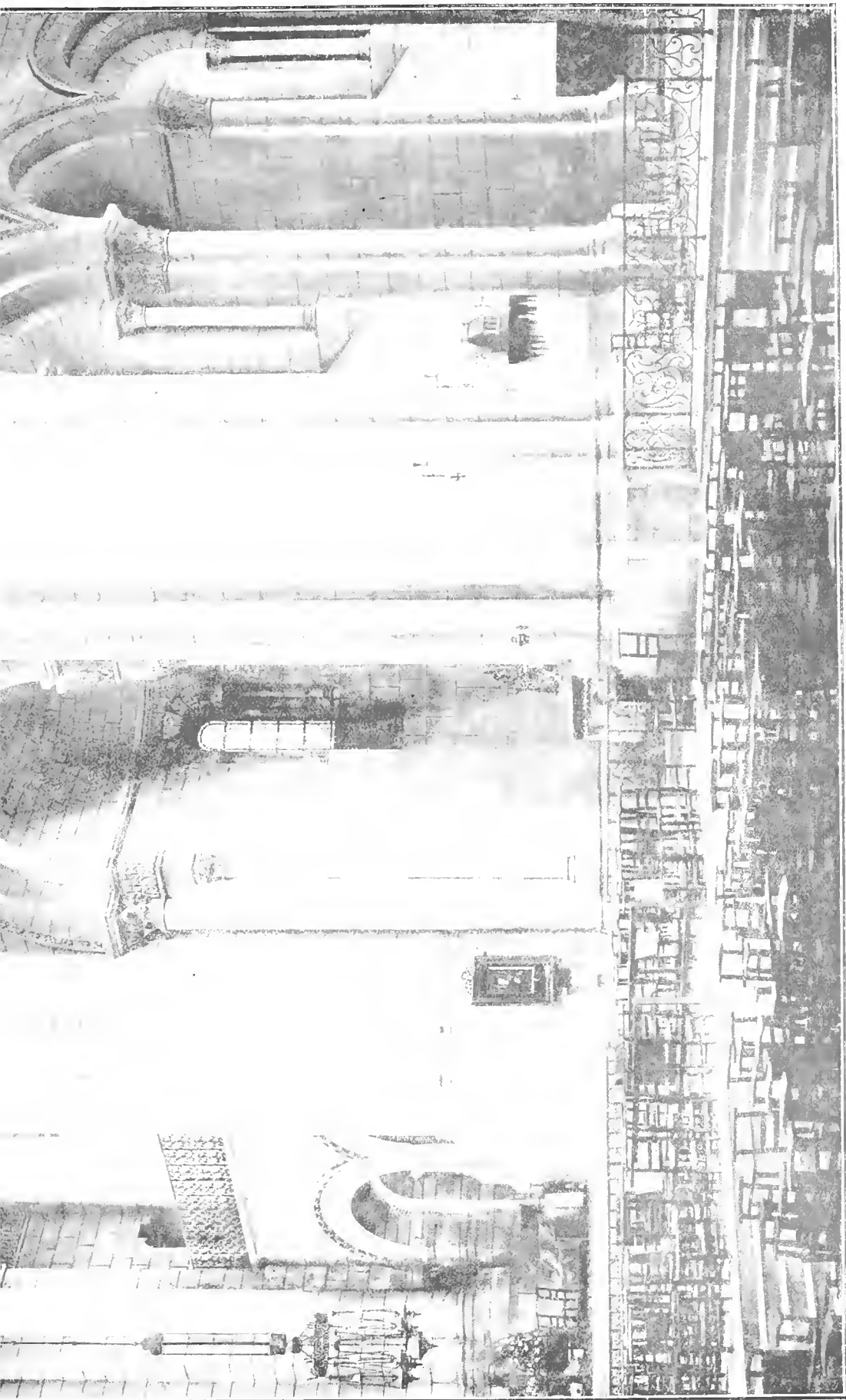


WOOD CARVINGS OF GOTHIC CHARACTER · SKETCHED BY MAURICE B. ADAMS, F.R.F.B.A.



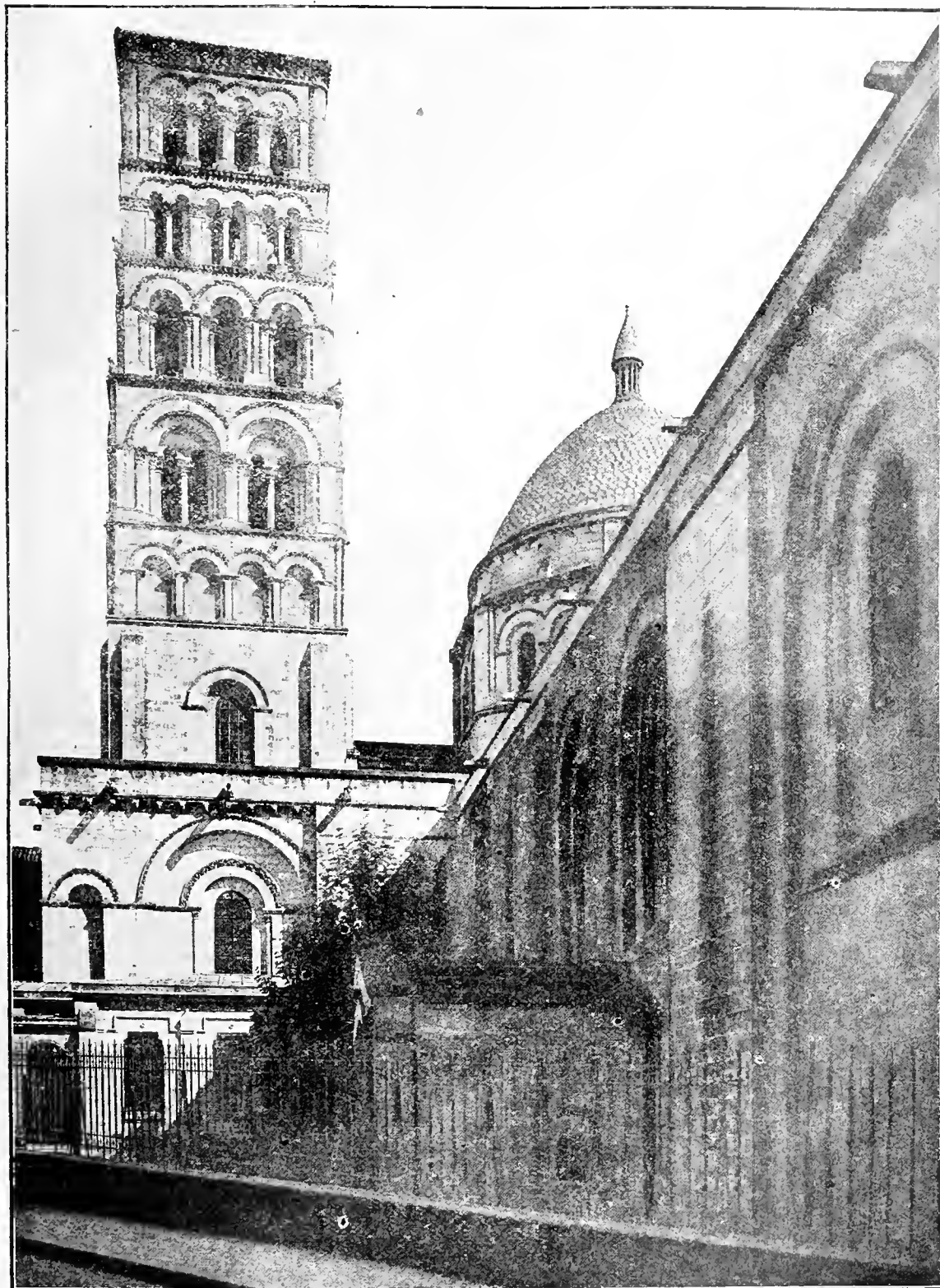
THE BUILDING NEWS, JANUARY 1, 1919



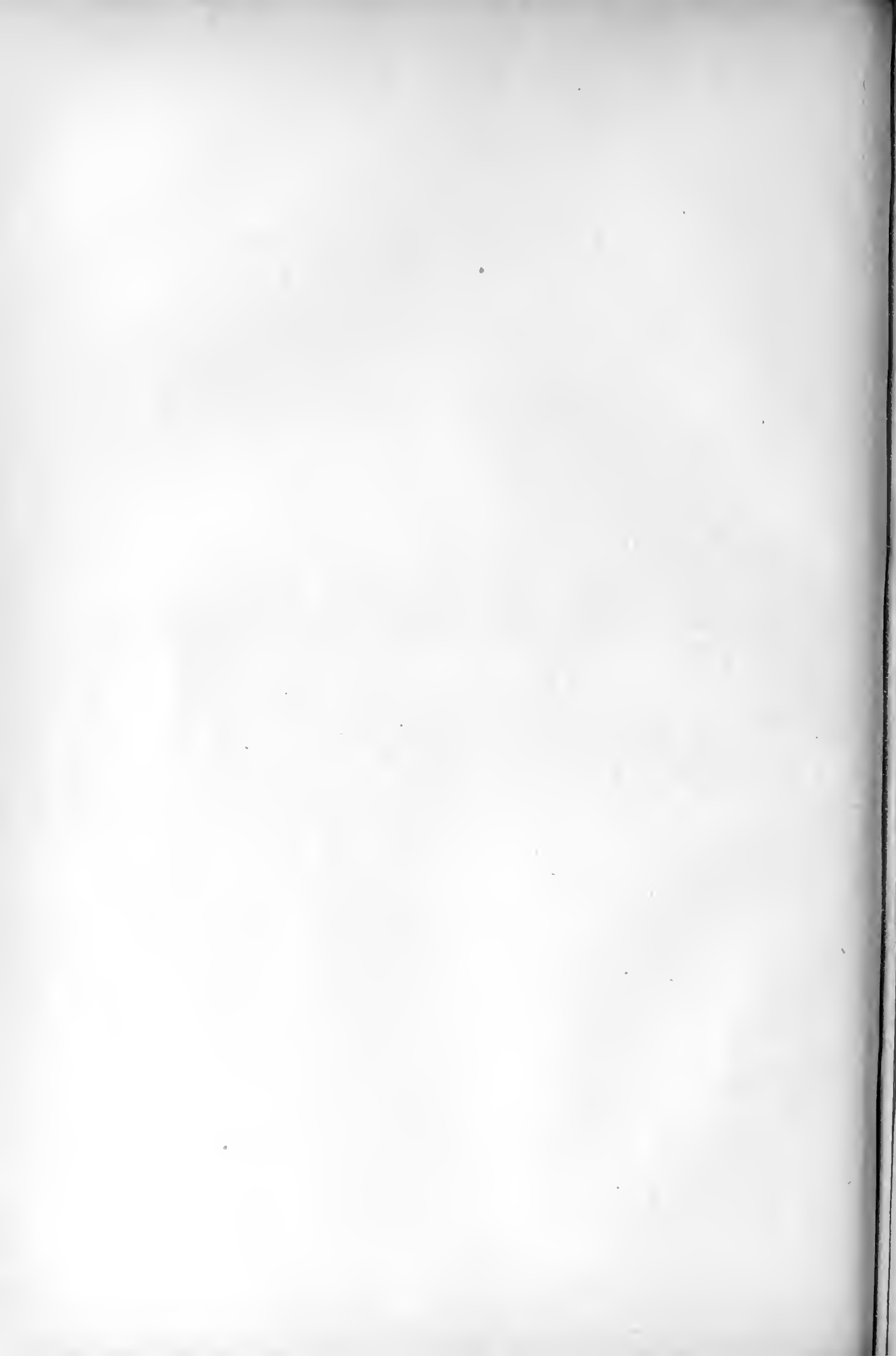


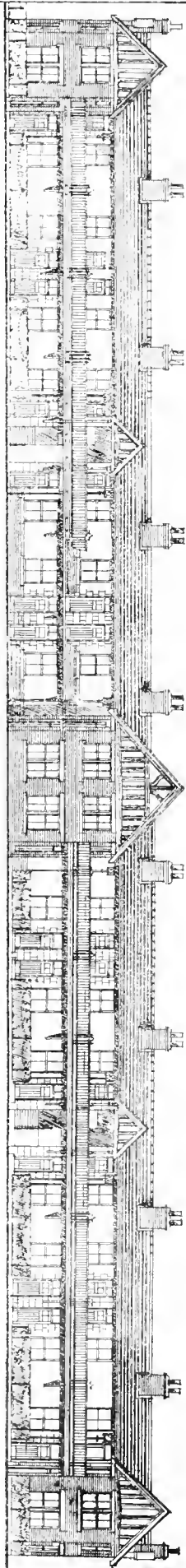
ANGOULÊME CATHEDRAL, CHARENTE, FRANCE: NORTH TRANSEPT AND CHOIR.





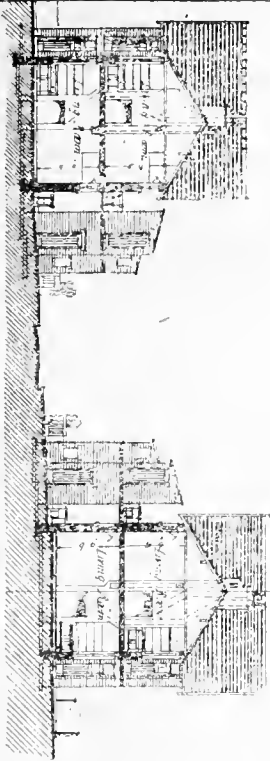
ANGOULÊME CATHEDRAL, CHARENTE, FRANCE.
SOUTH TRANSEPT TOWER.



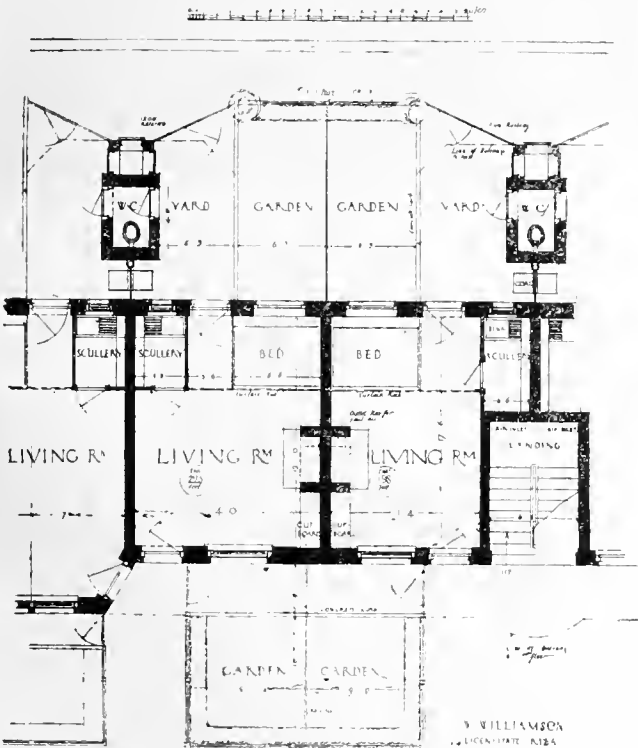
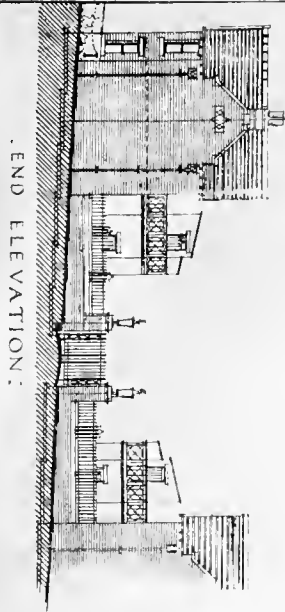


CITY of BRADFORD : LONGLANDS DISTRICT : *SINGLE-ROOM DWELLINGS* :

Scale of Feet
 0 10 20 30 40 50 60 70 80 90 100



W. WILLIAMSON *Incidental RIBA*
 CITY ARCHITECT BRADFORD



A PLAN OF TWO HOUSES

W. WILLIAMSON
 LONGLANDS DISTRICT
 CITY ARCHITECT
 BRADFORD

ARCHITECTURAL EDUCATION.*

It seems to be agreed on all sides that the architectural profession, the world over, has had of late years an unpleasant heckling. Our position as architects has not advanced in proportion with other leading activities. Our profession, on the contrary, is, perhaps, losing ground in some aspects of its former existence. The engineer is taking the place of the architect in much that is being done in the world, and some are bold enough to predict that he will supplant the architect. Personally, I fail to see that it matters if he does. The effect would only be that the name of the designer of buildings would be changed from architect to engineer. The buildings of each generation will be designed, notwithstanding, and I have too much faith in the hold Art has upon man to imagine the possibility of the engineer, even against his own will, not giving expression to those faculties of design that under natural conditions produce beauty in the execution of utilitarian work. We must not admit any sort of antagonism between the two branches of our glorious profession. Engineering is the child of architecture, and we must see to it that father and son work together harmoniously.

The modern architect seems to be a little anaemic; something has gone wrong with the breed, some strain is getting in causing deterioration, and new blood is wanted to save the quality of the stock.

The evident falling away of the architect's position in the community has been most pointedly and painfully emphasised in England by the fact that the Government authorities, in their time of stress arising out of the war, completely passed over architects as a body of men who could be of national service to the community in the hour of peril, and they engaged engineers to erect their workshops, huts, hangars, hospitals, and a thousand and one other buildings; and they put business men and women on to make specifications of the goods required for Army service, to check the delivery, and to organise new work and industry, and the great body of architects who, around the Royal Institute, would have unflinchingly lent their hand, specially trained and skilled as we imagined it was in many of these things. But though the Royal Institute of British Architects proffered their services free, the War Office for the first years of the war could find no use for them. They have found them something to do now, however; and that is, the preparation of designs for workmen's cottages for the new housing scheme England so sadly stands in need of.

It is better that we have some small recognition than none at all. But how much better were it that in such an hour of national distress our standing and position in the community demanded that we at once, in a body, be called in to design, organise, and superintend the erection of the main buildings essential to the war.

Why were the architects thus passed over by the war authorities at a time when one would imagine they would be only too anxious to avail themselves of ability specially trained and skilled in the work required?

There is no answer to this question, that all will agree upon. But we must conclude one of two things: either the Government was at fault in not making use of the best services available or architects are not the most able men to design and superintend the erection of buildings of the kind required.

If the latter alternative is correct, and it is indeed a fact that architects are not the proper persons to design such buildings, it is high time that we give very deep and serious attention to the question before us to-night, and see if we can discover any defect in the education of the architect that may account for our not being regarded by the Government and the public as having any skill or ability worth taking notice of when the country is in distress for want of new buildings; and let us see to it that architects of the rising generation shall be well equipped to occupy a higher status in the community.

A PAPER BY MR. R. J. HADDON.†

I have sometimes thought of late that we are somewhat prone, perhaps, to forget in our thoughts and often in our methods of education what an architect really is. We have met to-night to discuss "Architectural Education"; let us then forthwith define what an architect is—or should be. An architect is a skilled designer of buildings and a director of their erection and decoration. If any normal youth is wise and feels called upon to enter this ancient profession; if he has the natural gifts required, the good stout heart to press through a long course, and the necessary financial backing from his people, then let him remember—and with a single eye and a single purpose press towards the mark—and that mark the mark that he may be first of all a gentleman in general education, manners, and demeanour, and, secondly, a man highly skilled in all that technical knowledge and design means as far as building is concerned.

Now, this, I am sure, means the cutting out of other things. I speak now from a very considerable and in some way unique experience of the matter, when I say that the study of architecture properly pursued will certainly be sufficient to absorb the whole attention and energy of any ordinary life, and occupy it well and happily without allowing side issues to unduly enter in. We live, unfortunately, in days when men try to be everything and do everything. The days of the "Universal Stores." Young man, do not try to be a "Universal Store." Try to be a good architect, an honourable man, and a gentleman. Try to love this great work and to keep ever before you the high ideals and lofty purposes of this noble profession. Do not try to be an architect who builds. It is no part of the duty of an architect to build; that may well be left to the builder. Nor need you try to be the architect who engineers; that may also be well left to the engineer, who will in all probability engineer far better than you possibly can. Do not take the builder's job, or the engineer's job, or the surveyor's job; and see that they do not take yours.

Now, coming back to our first definition that "the architect is a skilled designer of buildings," let us consider how he may best receive the necessary training for this work—and let me at the very outset emphasise that there must be present in the individual strong natural talents for this particular class of life's work. I cannot find adequate words in which to make strong enough this most vital decision in the life of any youth: What calling to adopt? What goal to aim at? To my mind it is of the most paramount importance, and a long life's service or failure may hang upon the cast.

And first an atmosphere is required. All good things grow in good air, and the young prospective architect needs to be surrounded by influences that tend to make him what he should be—skilled, strong and reliable. Of such are good offices, good classes and good institutes, wherein are working together youths with similar aims, and men who have made their mark in the profession.

Now, one point I would emphasise here, and that is that while the profession of law, and also the profession of the Church, require and demand the high development of the gift of speech, the young architect may well devote his energies more to "doing" than to "talking," and what energies men of these other professions may think fit to put into eloquent phrases he would be well advised to put into eloquent drawing—for drawing, be it remembered, is of the very essence and vital life of the architect's expression. Therefore, to the student, I say, by every means in your power, draw; and seek wisely and well all those agencies and aids that may assist you to this important end that you may "draw well," both with the aid of the T and set squares and mathematical instruments, and upon the drawing board (those vital implements of the architect's calling), but also freehand from old examples, buildings, architectural ornament, nature, and

wherever and whenever possible; especially always with the scale, size, and structure of everything well to the fore in the mind. This, remember, is "the bread and butter gift" of the architect.

I will now proceed to a further point—the consideration of the acquiring of the necessary technical knowledge—and here I may say at once that the young architect should recognise early that his work is to be directive. The disability of the oft-mentioned "practical man" is that he is nearly always too practical upon one thing to be of any real good at the whole job of designing and directing the construction of a building. I want you to see the importance of having a comprehensive view of our work, without which nothing will compensate—nothing, I say.

Some men are proud of having done a little bit of carpentering, a little bit of metal work or stone cutting, or plumbing, or some actual work of a building trade, thinking that these things help their architecture. I doubt it.

If we had five lives instead of only one we might well devote one to chemistry, one to geology, one to philosophy, and one to working at the building trades in rotation, and all would doubtless be good, but as we only have one life (as far as we can be in any way certain), I take it that it devolves upon every student of architecture to get down on to his own particular vital work in the shortest time possible, and his vital work is to be competent to design buildings with beauty and truth, and to supervise their erection with skill and equity. Therefore, the more he devotes himself to understanding without touching, the better.

Now, to understand we must see, and I will give you a short list of what you should see:—See all the masterpieces of ancient art possible; see something of architectural Europe if you can; see something of modern building America if you can; see works in progress—weigh this and that and hold fast that which is good; see every manufactory you can where goods for architectural and building purposes are produced. Talk with the craftsmen, understand their aims and methods, and co-operate and help along all worthy effort of this sort as far as you are able; see the work of the best architects—if it be worthy, learn from it; see as much of growing and living nature as you can, and when you cannot look at the trees look at the sky as much as possible; see all the good books you can, and therein follow the best architectural work and drawing; see men and try to understand them. See workmen and all those who handle building materials and direct operations, for upon them you are absolutely dependent when the child of your brain—the design, the drawing—is passing into actual being. See life with a clear, honest, steadfast vision, and look upon it without fear. It is your opportunity to serve. Serve then with all the might of which you are capable.

Now, proceeding a step further, I should point out that there are two main sides to an architect's education—the practical side, and the academic side. How to happily blend these, and to supply each in its true and happy proportion, that is the question. And first as to practical training: It will be difficult to substitute anything better than the time-honoured system of articulated pupilage to a recognised architect of good standing, and thus to enter an office and study over a series of years, where actual architectural work is daily being carried out both by drawing and supervision, and where the work in all its stages is systematised and produced from the sketch to the finished building, with all the comprehensive details that lie between these two points; all of which the senior architect knows full well. This will bring the youth into contact with many vital problems, and will very soon reveal to him how little he knows and how much he needs to know. It will also bring him at once face to face with things as they are, and not as books and schoolmasters alone have taught him to think of them. Yet with all this he will need the academic training, for in no calling is a continuance of education more necessary and imperative than in architecture. And there is

*From a paper read by Mr. Walter R. Butler (F), F.R.I.B.A., at the general meeting of the Royal Victorian Institute of Architects.

†Paper read at the same meeting by Mr. R. J. Haddon (F), F.R.I.B.A.

this about the academic training: It has to do more than the office ever can have with the ideals of our calling, with fields of thought, endeavour and practice, not confined within the somewhat narrow limits of the activities of an average office. Here the student should be a student indeed, rubbing shoulders in lecture room, drawing classes, and design halls with other students assembled from other offices or other spheres of daily activity. In this way will the office work become illuminated by the larger visions that history and study teach.

If I should be called upon to lay down a course of study for a student I should do so somewhat as follows:—Begin with a good general education. Begin only if you feel that you have suitable talent for the work. Study architectural history with the object of acquiring a clear definite knowledge of the design, construction, features, and ornaments of all the leading styles of architecture of the ancient, mediæval, and modern worlds. To see and to sketch good examples of existing architecture. Drawing practice of every kind. The measuring and plotting to scale of old work. A close study of applied arts and crafts. The nature of building materials, both natural and manufactured, and their use in building. Building construction and practice in all trades. Structural mathematics and the skilled use of available data upon the weights and strains likely to be met with in buildings, and how to calculate and allow for them in modern practice. Designing and planning of modern buildings. Geometrical drawing to scale of architectural plans. The delineation of modern architectural details, both to large scales and also to full sizes. Some elementary practice in modelling. Some study of the art of sketching and of the art of water-colour painting. Architectural perspective and pictorial art. A general knowledge of quantity surveying. Skilled practice at writing specifications. Some knowledge of the law of contracts. A general knowledge of estimating and valuing. Study of building regulations, sewerage, regulations and Acts of Parliament applying to buildings of various classes, such as public buildings, hotels, factories, etc. Some knowledge of bookkeeping for architects. The ethics of the profession of architecture. A careful study of literary composition so as to express technical instructions with skill and conciseness, as well as to conduct correspondence with facility and tact. The cultivation of such manners, conduct and bearing that men who build for you may be found doing their best at all times and in all trades. The development of those social gifts that may commend you as a man worthy of trust, and as a skilled practitioner in architecture. This, gentlemen, I fear will appear to be rather a heavy equipment for one man to carry, yet all of it I am sure is necessary, and knowing this I may be forgiven if I emphasise the imperative necessity existing for the student to lay aside all else that would hinder that he may worthily carry these essentials of an architectural education.

PROFESSIONAL AND TRADE SOCIETIES.

FRENCH CHURCH ARCHITECTURE.—At the last monthly meeting of the Edinburgh Architectural Association, Mr. Thomas P. Marwick, architect, presiding, Mr. Walter Oliphant, S.S.C., delivered a lantern lecture on "Some French Churches." The lecturer gave an account of the different architectural styles in France, and explained that the Monastic Orders, especially the Clunians, contributed largely towards the development of French church architecture in the eleventh and twelfth centuries. The importance of the porch was pointed out, and examples were shown from Avignon, Arles, and St. Giles, showing the development of the southern porch, while later in the lecture the lecturer showed examples of northern porches, culminating in the triumph of French art—the portals at Rheims.

The L.C.C. Education Committee contemplate the erection of schools for tuberculosis children. The capital outlay would be about £108,000.

ROSYTH HOUSING.

At the third annual general meeting of the shareholders of the Scottish National Housing Co., Limited, Sir John R. Findlay, the chairman, said the company could congratulate themselves on having provided during the last three years of the war an average of 500 houses a year, which was probably a record in house building. The cost, as might be expected, had continually increased. In 1915 it was 26 per cent. above the cost in 1914; in 1916 it was 54 per cent.; in 1917 it was 100 per cent.; and in 1918 it has been 120 per cent. By far the greater part of this increase had been directly due to the increase in wages, though it was not easy to determine what exact proportion of the increase was due to this cause, since the enhanced price of materials, such as bricks, was largely due to higher wages paid.

There had been no increase of rent to meet the increased cost of building, and the rents charged were still based upon pre-war costs. The tenants also got the benefit of the low rate of interest paid by the company on the loan it received from public funds. Municipalities which were at present being pressed to undertake housing schemes, and might have to find the money at 5 per cent., would find even greater difficulty than the company had done in making actual rents tally with economic rents, though they should get some advantage from the decrease in wages and materials which peace might bring. So far as the experience of the company was concerned, it was not particularly encouraging to those who thought that arrears of housing should or could be dealt with on a strictly economic basis. If the problem was to be tackled it must be at the public expense, and from the point of view of the welfare of the community as a whole, such expenditure could not be regarded as uneconomic even though it could not be made to yield an immediate pecuniary return.

So far as the operations of this company were concerned, no apology was required for their uneconomic character. They could not in the midst of a great war, in the interests of national defence, transfer to Scotland a population of some six or seven thousand, and expect to make a profit on the transaction. The company's expenditure, so far as it was uneconomic, was part of the cost of the war, but, unlike most of our war expenditure, it had left permanent results which would be a blessing for years to come. It was possible that the company, in addition to further construction at Rosyth, might find a sphere of usefulness in co-operating with municipalities in local schemes, but nothing had yet been done in this direction.

The expenditure in connection with the erection of houses to September 30 last was £794,348. In the balance-sheet for 1917 the amount was £383,089, showing that there has been expended under this head in the past year £411,000. The profit and loss account showed an income from rents of houses £22,695, as compared with £6,800 in 1917. When the whole 1,600 houses were occupied the full annual total would be £42,000. That, however, included the tenants' rates, and (as regards 1,300 of the houses), electric lighting, both of which items were included in the sums collected from the tenants. Leaving out the items of tenants' rates and electric light, the average rent per house of the first 300 houses was £20 9s. 11d.; of the second 300 houses, £18 18s. 8d.; and of the last 1,000 houses, £21 3s. 1d.

The Norwich Corporation have approved a sewer extension scheme, plans and sections having been submitted by the City Engineer. The cost is estimated at £3,766.

Mr. G. A. T. Middleton, A.R.I.B.A., has joined the Y.M.C.A. for four months in France, teaching architecture and building construction to the troops during demobilisation. His address will be: Y.M.C.A., B.A.P.O.I., B.E.F., France.

The Victoria and Albert Museum has just received from Mr. Aubrey Le Blond a gift of a fine collection of early Korean pottery and porcelain. It is composed for the most part of wares dating from the time of the Korai dynasty, which came to an end in 1392.

Correspondence.

A FEW NEW YEAR'S PROFESSIONAL THOUGHTS.

To the Editor of THE BUILDING NEWS.

Sir,—After the quasi-official announcement, a few days ago, that the restrictions on private building and decorative works, which have been in force during the last four years, would be continued, and that, indeed, a new "Department" would be created for the purpose, we were somewhat startled at the Press announcement on the 23rd instant that these restrictions had been removed, and that, except for Government work, we might now go along as we did prior to August, 1914.

The excellent letter of Mr. Henry T. Hare, the President of the R.I.B.A., which appeared in the *Times* of the 20th instant may have expedited this official announcement; if so, we may congratulate our president.

I am an old optimist, and I have, all through the war, said that after it the building trade would proceed to its goal by leaps and bounds, and I still believe it; but there are one or two, perhaps political, matters which may engender a "worm in the pear," as Balzac has it.

It is a fact that "bureaucracy" has enormously increased in Government administration during the last four years, and there are distinct signs that this increase will be endeavoured to be continued. Every independent professional man must do his best to prevent the fatal inroad upon his legitimate work, and upon private enterprise, unless he is willing to see the bread taken out of his mouth and, at the same time, find that he is being heavily taxed to further his own execution.

Government restrictions on the sale and purchase of bricks, timber, and steel will need careful watching, and so will the building of dwellings for the working classes. It is quite on the cards that this latter will be attempted to be carried out by a newly created Government "Department," possibly filled with more or less duly qualified individuals, each, perhaps, presented with a "flapper" and a typewriter. I can confidently predict that if such a department is allowed to be created the cost to the taxpayer will be at least double what it would be if the work were left to that private enterprise which has made England the great country she is. For goodness sake let us all be left free for a little while from the tying up by red tape, and from the benevolent grasp of those Tite Barnacles which have, during the last few years, spread their tentacles in those homes for drones situate in Whitehall and its vicinity. "How not to do it" is as ripe now as it was when Dickens wrote "Little Dorrit."

But, sir, we may well, also, look nearer home in the year 1919. There is much to be done; first and foremost we must see to it that all those who have been fighting for us in the great war, and who have escaped the slaughter to return to their work, but disabled, are found work which they can perform, notwithstanding their injuries. The Surveyors' Institution (and I hope the R.I.B.A.) is taking practical steps to do all that is possible in this direction; but success can only be attained if every individual architect and surveyor will, in his turn, help in every way he can what is, after all, a plain duty.

Then there should come up for discussion by the general body, as soon after demobilisation as possible, the important questions of the new scale of charges, and the new conditions of contract, reports and conclusions upon which have been forwarded to the Council of the R.I.B.A.

Another subject which should be dealt with by the Council is the gradual and increasing inroads upon architects' legitimate work by bodies, and individuals, outside the profession. If some decided steps are not taken in this matter our young architects will find, when they hope to commence their professional careers, that their work has been entirely absorbed by the "stores," "furnishing firms," etc., etc.

I cannot help thinking, too, after looking back on half a century of experience, that the architectural profession is gradually losing some of its former dignity and independence; we have not kept up to the standard which has been maintained by doctors and lawyers in their respective callings, and this is another matter for the consideration of the governing body at No. 9, Conduit Street.

Well, sir, with this mixture of optimism and pessimism, may I wish you, and your journal, a happy and prosperous New Year; many homes are, we know, in sorrow to-day, and may they find a little consolation in those fine old lines:

"Not once or twice in our fair island story,
The path of duty was the way to glory."

I am, sir, yours obediently,

WILLIAM WOODWARD, F.R.I.B.A., F.S.I.
15, Southampton St., Strand,
December 27, 1918.

TECHNICAL CLASSES FOR PAINTERS.

Sir,—Demobilisation of our glorious Army being now upon us, it is the wish of all that our soldiers may share the brighter times which we hope are in store for the country.

May I ask you to use your great influence in drawing attention to the technical classes which have been held for the past twenty-five years at Great Titchfield Street by the Painter Stainers Company for the purpose of giving instruction in the craft of decorative painting in all its branches. We are extremely anxious to enlarge the scope of these classes, and hope to include among our students those demobilised soldiers who may elect to take up house-painting as their occupation, or who, being already painters by trade, desire to improve their technical knowledge.

Full particulars of these classes may be had on application to the Clerk of the Company at Painters Hall, Little Trinity Lane, E.C.—Yours truly,

H. F. HAMMOCK, Master,
Painters Hall, 9, Little Trinity Lane,
London, E.C.4, December 20, 1918.

Our Office Table.

Among those connected with our own industries who have been elected to the new Parliament are Mr. Philip Pilditch, the head of the firm of Pilditch, Chadwick and Co., architects, of Westminster; Mr. A. Richardson, who nearly thirty years ago joined the staff of *Engineering*; Sir Henry Norris, the Mayor of Fulham, a partner in the firm of Messrs. Allen and Norris, builders; Mr. A. L. Parkinson, Mayor of Blackpool, and chief partner in the firm of Messrs. J. Parkinson and Sons, Ltd., builders; and Col. C. Pinkham, formerly a working carpenter, and developer of a large building business at Willesden.

Under the auspices of the Leeds Civic Society, a House and Town Planning Exhibition is being held this month at the City Art Gallery. The duties of Organising Secretary of the exhibition have been undertaken by William H. Thorp, F.R.I.B.A., the Hon. secretary of the Leeds Civic Society. Illustrating the Town Planning Schemes are local plans for the development of the Middleton and Hawksworth Wood areas, and in the neighbourhood of London and elsewhere. Following, space is given up to illustrate plans and designs for workmen's cottages specially designed for present and future Garden City Colonies, exhibited by the Leeds and West Yorkshire Architectural Society, including plans and exterior views submitted by the following architects:—W. Carby Hall, Cannon and Chorley, E. J. Dodgshun, G. F. Bowman and Son, William H. Thorp, Percy Robinson, W. Alban Jones, Kitson and Parish, W. J. Coombs, A. J. Healey, Hervey Rutherford, of York, and G. Birkinshaw. In addition, a collection of photographs is being shown, showing views of cottage houses grouped in country surroundings. In contrast to these houses, on a screen in the East Room is to be seen, contributed by the South Yorkshire Civic Survey,

plans showing the evolution of the "Back to Back" artisan's house, as built in Leeds during the last 70 years. Some models are exhibited, including a block of four cottages, at New Earswick with a flat roof, and another of semi-detached cottages, also with a flat roof and built of concrete contributed by Mr. Arthur Mitchell, of Leeds. A glass case contains a group of cardboard models of houses made by Mr. G. J. Dodgshun, F.R.I.B.A., and another case contains a model of a couple of houses contributed by Messrs. Bassett Lowke of Northampton.

A new method of locating a point on a map is described by Capt. S. H. Simpson, in the *Journal of the United States Artillery*. Observations are taken from the unknown point by a transit to a number of known points. These points are plotted on co-ordinate paper if no map is available, then an approximate position of the unknown point is chosen and from its co-ordinates and that of the known points, angles between the rays from the approximate point to the known points are computed. The distances, called "off sets," which are required to move the approximate point in order to make the computed angles equal to the observed angles are then calculated. A large scale plot is then constructed around the approximate point and, by drawing the chords, which can be taken as straight lines corresponding to the off-sets, intersections are obtained, which give the true point. A numerical example is given with all calculations.

LIST OF TENDERS OPEN.

ARCHITECT AND HOUSING.

Jan. 14.—Architect wanted by the Newton-in-Makerfield Urban District Council, to give whole time to housing scheme. Application to C. Cole, Clerk to the Council, Town Hall, Earleston, Lanes. (See advt.)

BUILDINGS.

Jan. 22.—Rebuilding laundry at Kingsland Road House. For the Shoreditch Guardians. Plans and specifications at office of the architect, Mr. A. W. S. Cross, F.R.I.B.A., 45-6, New Bond Street, W. Tenders to Mr. John C. Clay, at Board Room, 204, Hoxton Street, N.

No Date.—Masonry, carpentry, slating, plumbing, and painting work at herring kilns, etc., Fraserburgh. Particulars and schedules of quantities from Messrs. D. and J. R. McMillan, Architect, 106, Crown Street, Aberdeen.

No Date.—Erection of Hallamshire special surgical hospital (orthopaedic), Psalter Lane, Sheffield. Architect, Mr. F. E. P. Edwards, F.R.I.B.A., Town Hall, where plans and particulars may be seen and forms of tender obtained.

ROADS AND STREETS.

Jan. 4.—Tar paving the footway at Stag Lane, Kingsbury, N.W.9.—For the Kingsbury Urban District Council.—Specification and form of tender from the Surveyor to the Council, Council Offices, Kingsbury, N.W.9; tenders to H. H. Turner, Clerk, Council Offices, King-bury Road, Kingsbury.

Jan. 4.—The Orpington Parish Council will consider alternate estimates for work in connection with a public footpath: (1) to asphalt the path, about 330 yards in length; (2) to gravel and surface tar the path; (3) (a) to asphalt about 154 yards, and (b) to gravel and surface tar the remainder, about 176 yards. W. Nelson, Clerk, Council Offices, Moorfield Road, Orpington, Kent.

SANITARY.

Jan. 2.—Alterations to and repairs, renewals, and replacements of the drains on workhouse premises, in accordance with plans and specifications prepared by Mr. J. Morgan, surveyor and water-works engineer, which may be seen at the Union Offices, Monk Street, Abergavenny.—For the Guardians.—Tenders to W. H. P. Scanlon, Clerk, Union Offices, Monk Street, Abergavenny.

Jan. 8.—The Imperial Trade Correspondent at Johannesburg has forwarded a copy of the specification, conditions of contract, and form of tender, together with a blue print, in connection with a call for tenders by the Johannesburg Municipality for supply and delivery of 5,000 sanitary pails with eyelet holes and 500 lids for same (contract No. 415). Copies of the specification, etc., may be obtained from the Town Clerk, Municipal Offices, Johannesburg, who will also receive sealed tenders, on the proper forms, up to noon on January 8. A copy of the above-mentioned specification, etc., may be consulted by British manufacturers of the goods mentioned at the Inquiry Office of the Department of Overseas Trade (Development and Intelligence), 73, Basinghall Street, E.C.2.

The Metropolitan Asylums Board have approved plans for the erection of a hospital at Tulse Hill. The scheme will involve an expenditure of £5,800.

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TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

GLASGOW.—For supply of various articles, for the electricity committee. Recommended for acceptance:—

D. Clark, Ltd., handrails on gangway and ladders at the Dalmarock station, £1,115; P. and R. Fleming, rolled steel beams for turbine room floors, £2,191; Stewart and Lloyds, Ltd., steam piping, £283.

GLASGOW.—For equipment for the second boiler-house at the Dalmarock station—viz., eight boilers and accessories—for the electricity committee:—

Babeock and Wilcox, Ltd., £140,282 0 0

(Recommended for acceptance.)

LONDON, W.—For road material for three months ending March 31, 1919, for the Hammersmith Borough Council:—

J. Mowlem and Co., Ltd., Grosvenor Wharf, Westminster, Guernsey granite, 27s. 3d. per cubic yard; Bentley and Smith, Ltd., Rastrick, Brighouse, York stone, 10s. 9d. per super yard.

SALFORD.—For reconstruction work at dyehouse of technical institute, for the corporation:—

Rouse, R., and Sons, Salford .. £51 18 0

(Accepted.)

WESTMINSTER.—For structural alterations at the Hyde Park Corner public convenience for women, for the Westminster City Council:—

Franks and Simons 205 0 0

Townsend and Pearson 170 0 0

Burton Bros. 145 0 0

Sims, J. R.* 137 10 0

(Recommended for acceptance.)

WOLVERHAMPTON.—For brickwork in connection with boilers at electricity works, for the corporation:—

Windsor and Co. £200 0 0

(Accepted.)

LEGAL INTELLIGENCE.

CLAIM FOR ALLEGED NEGLIGENCE AGAINST AN ARCHITECT.—HAYWARD v. WAY.—In this action in the Official Referee's Court, before Mr. Pollock, on December 13-16, 1918, which was remitted from the High Court by Mr. Justice Salter while on circuit, Mr. Hayward, a dealer in curios, of Swanage, claimed damages from Mr. Lionel D. P. Way, architect, of Swanage, for alleged negligence. The defendant counter-claimed for professional service rendered.—Mr. Way, according to plaintiff's case, said that he estimated the cost of putting up the house at £600, and that he was to be paid at the rate of 4 per cent. on the estimated cost, £12 on the production of plans, and £12 on the completion of the building; but defendant now said that the 4 per cent. was to be on the actual cost and not on the estimated cost. The actual cost of the building was £1,118, the contract price £1,057, the balance being made up of extras. The plaintiff was dissatisfied after completion, and called in another architect, Mr. W. G. Ware, of Bournemouth, who made a report upon the building out of which the present claim arose. The defendant denied that there had been any negligence in the manner in which he had carried out his professional duties.—On the fifth day of the hearing, while the defendant's case was still in progress, the parties arrived at a settlement, and judgment was entered for the plaintiff for £100, including the amount paid into Court, and for plaintiff also on the counterclaim, all charges and imputations being withdrawn.—Judgment was accordingly entered for plaintiff, with costs.

Some £4,000 has been already received in response to an appeal for £35,000 to complete the great crossing and the two transepts of Belfast Cathedral, in conformity with the original design. The cathedral will afford many opportunities for personal memorials, as windows, arches, and pillars can be connected with special names, and it is hoped that the Ulster Division will be nobly commemorated.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Currente Calamo.

The ridiculously slow rate at which demobilisation is proceeding is, as Lord Brassey points out, sufficiently explained by the official announcement that fourteen different departments—each, of course, presided over by a Minister, and staffed by people like those of whom Mr. Clynes is so proud—are on the job, and likely to be, if the report of the Committee of Inquiry into the organisation and staffing of Government offices is trustworthy, as we have no doubt it is. Here is one flagrant instance:—

“Our inspectors of the Ministry of Food reported that on July 4 they found several hundred clerks engaged on counting dummy coupons, and that on July 17 they found them almost entirely occupied in knitting and reading novels.”

It is intolerable that the return to normal conditions should be retarded, and the efforts of employers to rebuild the trade which has been paralysed by a costly and redundant bureaucracy should be thus hindered. But the usual glib assurances will be forthcoming in Parliament that all is as it should be, and we shall see worse and worse instances of this determination to continue the scandalously wasteful retention of the idlers who are responsible, and quite possibly the creation of another fourteen departments to block indefinitely the return to prosperity which can only be expedited by the return to industry of the labour that is wanted, and without which, in our own industries, housing and everything else is likely to be postponed indefinitely, unless something more than protest is organised.

The R.I.B.A. has published in a five-shilling volume the Cottage Designs awarded premiums in the competitions arranged by the Local Government Board last year with the aid of the Institute, most of which have been illustrated in these pages some time since. The illustrations are prefaced by particulars of the competition, a list of the awards, some general observations and notes on the designs, a note on dormers, and some general recommendations to local authorities and others. We do not quite understand the foot-note on page 16, which states that “some of the designs here published are not identical with the plans submitted in the competition, having been, at the suggestion of the

judges, amended in certain details so as to improve their value as specimen solutions of the problem under consideration.” It is, we should think, just possible that competitors whose designs have not been so “amended” may feel that it is hardly fair to thus “improve” the designs, and send them out thus “amended” as “specimen solutions.” Others, again, who are pretty freely criticised, may wonder why their designs were not so “amended,” or that all were not left to stand on their own merits in a publication intended to influence the opinion of local authorities.

That some of the memorials of the great war should take the form of school buildings is a proposal lately put forward by the Kent Education Committee. Several public schools, Harrow, for example, have already taken this line; but the idea that elementary and secondary schools should follow suit is novel and good. Under the new Education Act there are certain to be many new schools built; in these hard times we shall be tempted to build cheaply; it will be a great thing for the nation if, while public funds provide what is necessary, war funds add the living inspiration of beauty. There are already far too many schools which a stranger would take for a gaol or a workhouse: square, formal buildings standing in asphalted “playgrounds,” a disfigurement to the green English landscape or the picturesque English square. Why, asks *The University Correspondent*, should not the school of the future be what our churches were in the Middle Ages, and still are, a lesson in stone and brick and timber to the craftsmen and architects of the young generation?

We regret that we have been unable to insert several advertisements which reached us later than December 15, the date which we announced would be the latest on which we could guarantee insertion of such. We must also ask subscribers, either direct from the office or otherwise, to note that until the paper restrictions are removed we cannot undertake when booking renewals, to recommence otherwise than from the current issue following receipt. Nor are newsagents likely to be able to do so. Our last five issues have been out of print on the day of publication.

PROPOSED NEW METHODS OF VALUATION OF LAND FOR BUSINESS USES.

The Ministry of Reconstruction have now issued the second report of the Committee upon the Acquisition and Valuation of Land for Public Purposes, of which Mr. Leslie Scott, K.C., M.P., is chairman. Their first report, which was issued last January, recommended measures for cheapening, shortening, and simplifying procedure for obtaining compulsory powers for the acquisition of land. Their second report is devoted to what is described as a suitable system for the valuation of land compulsorily acquired.

It is certainly not in favour of the landowner. The Lands Clauses Acts, we are told, are out of date, and should be replaced by a fresh code. The main recommendation is that the basis of “value to the owner” which has hitherto been adopted as the criterion for such valuation under various judicial decisions should be replaced by a general standard of value to be paid to the owner, which is defined as “the market value as between a willing buyer and a willing seller.” In addition to this value, the owner would be entitled, under the Committee's proposals, to payment for consequential injury, of any actual loss to him involved in the taking away of his land.

The committee do not think that the fact of his land being acquired under compulsory powers for the public benefit should entitle an owner to additional compensation on that ground alone. They urge, therefore, that the conventional allowances for compulsory purchase (which in England and Wales is normally 10 per cent., and which in the case of agricultural land in Scotland has, in practice, resulted in giving forty-five years' purchase of the gross annual value, representing in recent years nearly 100 per cent.) allowance should be discontinued.

On the vexed question of what is known as “special adaptability,” the Committee recommend that an owner should not be entitled to any increased value for his land which arises solely from the suitability of the land in question for a purpose to which it could be applied only under statutory powers. The Committee further recommend that no enlargement of market value shall be taken into account which arises from the use of the land in a manner contrary to sanitary or other laws and regulations (as illustrated in the provisions of the Housing of the Working Classes Acts, 1890, in regard to premises in an unhealthy area, where such premises are

overcrowded, insanitary, or unfit for human habitation)

The Committee have made various recommendations with a view to giving promoters greater freedom in acquiring and disposing of properties required for their undertaking. They shall not be compelled to purchase any interest in land which is not required for the purpose of their undertaking, and they shall be able to specify in the "notice to treat" the date on which such notice is to take effect in regard to any interests which they do require. They shall have power to take part only of a property whenever they think fit, and to acquire rights of access or other easements over or under land whenever such rights or easements will, of themselves, be sufficient for the purpose of their undertaking. They shall further be entitled (on payment of all proper costs and compensation) to withdraw their "notice to treat" within two months of the delivery of the claim (which should clearly set forth all items in respect of which compensation is demanded (or within such other date as may be directed. Finally, the promoters shall be entitled to use land free from any existing restrictions on its use (subject to payment of compensation to any persons actually damaged by the breach of such restrictions) and able, subject only to certain limitations in very special cases, to hold and dispose of surplus lands not required for the purpose of their undertaking.

The Committee devote special attention to the constitution of the Tribunal for assessing compensation. They unanimously recommend that assessment by juries, and by Justices of the Peace and stipendiary magistrates under the existing Acts, should be abolished, and that the system under which two arbitrators and an umpire are appointed to adjudicate in such cases should be discontinued. Parties may be left free to appoint a single arbitrator on their own account if they agree upon the arbitrator to be selected; but if not, the Committee recommend that the Tribunal should consist of a single arbitrator appointed by the Sanctioning Authority (the establishment of which was recommended in the First Report) from a panel consisting of eminent surveyors and other experts. At the same time, they provide that surveyors appointed to this panel, if they continue in private practice, should give an undertaking that so long as they remain on the panel they will not give evidence in disputed cases on behalf of either party. It is, we are told, "hoped that by this provision it will be possible to obtain the services of eminent and practical surveyors upon the panel from which arbitrators are to be selected, but that the anomaly will be avoided of having the same men appearing alternatively as judges and as advocates from day to day in the same class of case."

While the Committee think a single arbitrator so selected will usually constitute the most suitable form of Tribunal for assessment of compensation, they provide that, if either party desires it, the Sanctioning Authority shall have discretion to order a larger and special Tribunal. They further recommend that the Sanctioning Authority shall be empowered to make rules as to the procedure to be observed by the Assessment Tribunal, but that the Assessment Tribunal, in order to possess powers of penalising obstructive action, shall have absolute discretion over costs. Taxation returns in the possession of the Inland Revenue Valuation Department should be produced on request by the Assess-

ment Tribunal. Appeals should be allowed to the High Court of Justice on any disputed question of law.

The Committee think that the general principle of "betterment" and "worsement" (for which latter term in their report they substitute the term "injurious affection" in a larger sense than that in which it is normally recognised under existing law) should generally be correlative. They attach much importance to an extended application of the principle of "betterment" on the ground that if persons whose property has been enhanced in value by public improvements are made to contribute to the cost of such improvements by means of a "betterment charge," there will be more inducement for promoters to undertake schemes likely to develop the resources of the nation and the amenities of national life which are in danger of being hampered or indefinitely postponed for financial reasons under conditions likely to obtain after the war. In normal cases the Committee limit the percentage of such enhanced value which is to be contributed by the owner to 50 per cent. Where the State is the promoter, the State should retain the whole of the "betterment charge." Where a local authority is the promoter, the sanctioning authority should decide whether the whole of the "betterment charge" should be retained by that authority, or whether some proportion should be paid to the State. In the case of a private promoter his share in the "betterment charge" should be limited to the actual cost of construction of the works involved in his undertaking.

One of the main difficulties, we are told, encountered in the past in applying the principle of "betterment" in a way which can practically assist the promotion of valuable public undertakings, has been the heavy weight of costs involved in procuring the two sets of valuations of the land in its original condition, and of the same land after its enhancement by the public works in question. For this purpose the Committee recommend an extended utilisation of a machinery already in existence in the Inland Revenue Valuation Department.

As to compensation for "injurious affection," the Committee recommend that its operations should be confined to (a) damage arising directly from the taking of the land, such as severance or disturbance of occupation, in respect of which compensation should be paid in the general course; and (b) damage arising directly from the construction or use of the works in question, as to which damage the sanctioning authority should exercise discretion in determining whether compensation should be allowed or not, according to the circumstances of the case.

The Committee are not generally in favour of a system of what is known as "recompment" (i.e., the giving of powers to take land beyond what is necessary for the authorised works, in order to secure the enhanced value created by such works). They think that any general application of such a principle might have undesirable results in a tendency to speculation in land by public authorities, and that the general purpose of securing to the public some proportion of the enhanced value of land arising from enterprises of a public nature would be better served by the imposition of a "betterment charge" under the conditions which they recommend. But they think that acquisition of land for purposes of "recompment" should be permitted in the case of State improvements, or where the land is required for the reinstatement of

displaced interests, or for the efficient development in the future of a specific undertaking.

Our Illustrations.

THE WHITELEY HALL AND TWO BLOCKS OF COTTAGES, WHITELEY HOMES, BURHILL PARK, SURREY.

The accompanying drawing—one of a series of three perspectives—was exhibited at the Royal Academy in illustration of the group of buildings forming part of the general scheme carried out by the Trustees of the Whiteley Homes in Burhill Park. Sir Aston Webb, R.A., was the architect of this section, including the Whiteley Hall, and the two remaining views just mentioned will appear in our pages at an early date. The other groups of cottages, together with those now shown, form an octagonal layout adapted to the several plans of the six collaborating architects. We gave a block plan in detail, showing this general arrangement, in our issue of November 29, 1916. Mr. Walter Cave, F.R.I.B.A., the consulting architect to the trustees, designed the houses built on Section 8, as shown in the same and following issue, when Mr. Mervyn E. Macartney's group also appeared. The remainder will be found fully illustrated by Mr. Ernest Newton, A.R.A., May 31, 1916; by Mr. Reginald Blomfield, R.A., June 21, 1916; and by Messrs. Ernest George, R.A., and J. B. Yeates, F.R.I.B.A., July 25, 1916. The builders of all the sections were Messrs. Martin, Limited, of Northampton, and Mr. Comport was the resident clerk of the works.

WAR MEMORIAL FOR MILL HILL SCHOOL.

This memorial was designed by Mr. Thomas E. Colcutt, F.R.I.B.A. (Messrs. Colcutt and Stanley Hamp), of 36, Bloomsbury Square, W.C.1. The model from which the accompanying photograph was taken formed part of the Royal Academy Exhibition last summer. The work will be carried out in Portland stone. The inscription to the frieze is: "Render thanks to the Giver, England, for thy sons." The sculpture is symbolic of Honour, Valour, Youth, Sacrifice, Victory, and Peace. The sculptor who prepared the sketches for this part of the memorial is Mr. Bertram Pegram, of Park Village West, N.W.

THE IMPERIAL WAR GRAVES CROSS.

The first of these Imperial war crosses has been erected at Lambeth in the Palace precincts, and they will be placed on every British battlefield cemetery to commemorate the spots where those who fought and fell, fighting for King and country, are buried. The great sword on the front face is in bronze, fixed to the stone cross. These crosses will vary in height, according to requirements, from a minimum of 18 ft. to a maximum of 32 ft. Mr. Reginald Blomfield, R.A., has designed the Imperial cross for the authorities.

AN AEROPLANE BIRD'S-EYE VIEW OF ST. PETER'S AND ITS IMMEDIATE SURROUNDINGS AT ROME.

This drawing, by Mr. Andrew N. Prentice, F.R.I.B.A., was made during the time when aircraft attacks were in progress by the Central Powers over various historic cities in Italy last year. Fortunately, Rome escaped. The picture,

which is based upon a photograph, gives a very comprehensive aspect of the famous group of buildings forming the precincts of the Cathedral of St. Peter, and at the same time emphasises the serious obstructions caused by the mass of dwelling-houses in the foreground which have from all time blocked up the approach to the spacious Piazza San Pietro, with its graceful curves, forming the centre of the picture. The galleries of the Vatican can be seen in the picture extending to the right, with their internal court-yards divided in the centre by the library. The residence of the Pope is the square building standing prominently to the front and adjoining the Piazza.

VIEW OF BATH, INCLUDING PULTENEY BRIDGE.

ROBERT ADAM, Architect.

This water-colour view of Bath by Mr. Robert Morley, R.B.A., attracted much attention at the Autumn Exhibition of the Royal Society of British Artists, held during November and December last in the Galleries of the Royal Academy. The picture represents the famous Pulteney Bridge, between Bath and Bathwick, erected by Act of Parliament in 1770, with three segmental arches, by Robert Adam, and built by Earl Pulteney. The working details are among Sir John Soane's collection of Adam's drawings in Lincoln's Inn Fields Museum. The shops on the bridge, designed after the manner of the Ponte Vecchio at Florence, have been shortened at the left-hand to meet a recent town improvement, and the portico columns were removed previously; otherwise the structure remains substantially as designed. Originally there was a ferry at this point of the Avon.

WOOD-CONCRETE FOR DWELLING HOUSES.

Richard Kafka discusses the possibility of the application of wood-concrete to the construction of dwelling houses, etc. Being called upon to build a floor in a malt-house at short notice, he proposed the use of wood pillars surrounded by concrete, as wood alone could not be used owing to danger of rotting. He does not think there is any difficulty in obtaining the necessary static co-operation between the wood and concrete, and quotes some investigations of another investigator to support his view. It is necessary that the wood be dry, and, if possible, suitably impregnated before concreting, though care should be taken to see that the impregnating does not affect the concrete.

It is necessary to take into account the different coefficients of thermal expansion of wood and concrete in considering the applicability of the system to a particular purpose, otherwise the advantages of wood-concrete may be outweighed by the disadvantages. In general, the system is more suitable where no other material is available. So long as the wood-concrete does not present objections from the static standpoint, the wood-work must be dimensioned as would be the case if wood alone were used. In the actual system, increased dimensions are necessary throughout the building, owing to the space lost on account of the heavier nature of the structure generally. The advantages of wood-concrete, in the author's view, are: rapidity and cheapness of construction; the possibility of immediately placing such structures under load; the fact that alterations and even demolition can be carried out at a low cost, and that the wood recovered in the latter case can be used again.

Wood-concrete is therefore more applicable to buildings of a more or less temporary nature, and where fire risks are not great.

The writer gives a rough plan showing the construction of a dwelling-house on the above system. He recommends the use of

sheet iron shells or casing in building up the structure, as they can be removed and used for the next highest stage in the process.

It is more satisfactory to use very weak mixtures for the purpose under discussion, say, 1: 15. If slag-sand and gravel of fine constituency is used for the concrete, and the cement content kept low, as just suggested, the thermal conductivity of walls, etc., built in this manner is low, so that there is little loss of heat from the interior.

Although the author has only dealt with dwelling-houses, he sees no reason why the system should not be extended to the construction of bridges, wood towers, water-cooling towers, and to various purposes in mining.—(*Beton und Eisen*, November 2, 1918.)

PNEUMATIC METHOD OF CONCRETING.

H. B. Kirkland describes this new (patented) method, which consists simply in blowing batches of concrete through a pipe from a central point of supply to their place in the concrete forms. The materials for a batch of concrete (½ cu. yard) are proportioned in a measuring device and dropped into the pneumatic mixer without previous mixture. The plant for pneumatic mixing and placing comprises: (1) a mixer, (2) a pipe conveying system, and (3) a compressed-air plant.

The mixer consists of a steel shell having the form of an inverted cone, surmounted by a cast steel cylinder in which the door operates, the door being worked by compressed air. At the bottom of the inverted cone chamber is a 90-degree elbow, forming the connection to the discharge pipe. The door and piston operating it are the only moving parts of the mixer, and the inside contains no mechanical mixing apparatus and is entirely free from obstructions. A main jet, located at the heel of the bottom elbow of the mixer, serves to mix and convey the concrete. There are supplemental air jets at the top of the mixer. The main air jet is directed into the centre of the discharge pipe, where it catches the material as it falls from the conical hopper above. The upper air jet creates a pressure from above the batch, forcing it downward into the discharge pipe where it is caught by the main jet. After the batch containing cement, aggregate and water is placed in the mixer, the door is closed and the main jet is opened to the air supply line leading to the lower jet, and the other to the line leading to the upper jets.

The conveying pipe is formed of any standard smooth steel pipe with joints having bolted flanges of a type suitable for making quick connections. The elbows are of specially hardened steel owing to the great wear that takes place through the operation of passing the concrete through them. Details are given in the paper of the arrangement of the whole pipe line.

A suitable type of compressor is a one or two-stage machine compressing from 80 to 125 lb., provided with a suitable drive. Wherever possible the plant is located near the mixer. The amount of air required to convey concrete depends upon the specific gravity of the materials, the smoothness of the conveying pipe, the number of bends in the line, distance conveyed vertically and horizontally, etc. The standard size mixers require 2 cu. ft. of actual free air compressed to 100 lbs. per sq. in. per lineal ft. of pipe per batch. Thus, to convey one batch 500 ft. the actual free air compressed to 100 lbs. is 1,000 cu. ft.

As regards loading the mixer, the ingredients, cement and water, are placed in a measuring hopper, so that when the hopper is emptied into the mixer the first commingling of the ingredients takes place. When the air is turned on, that portion of the batch situated at the bottom of the mixer, in front of the conveying air jet, is first to move and is instantaneously followed by portions dropping from above. The mixer having the form of an hour-glass, the central portion of the batch in the mixer

flows down first and the portion in the sides follows in the stream from the upper part, just as sand does in an hour-glass. During this operation the mingling of the different ingredients causes the smaller ingredients to flow into the gaps between the larger ingredients, and the portions of the batch which drop into the lower air stream, having a velocity of about 5,000 ft./min., are carried along in suspension. Indeed, it is necessary in the process that the materials should be in suspension, otherwise if the air velocity is reduced the materials simply roll along the bottom of the pipe.

Details are given in the paper (which is illustrated) of work carried out with large plants in tunnelling and in other operations where the ordinary method is followed.—(*Journal of the Western Society of Engineers.*)

Correspondence.

A FEW NEW YEAR'S PROFESSIONAL THOUGHTS.

To the Editor of THE BUILDING NEWS.

Sir,—If your optimistic correspondent, Mr. William Woodward, had kept more closely in touch with architectural matters, political and otherwise, during the war, he might have ascertained that the points and suggestions which he makes, and a few others which he has not thought of, or at any rate set down, have been and are being dealt with by various subsidiary committees of the Architects' War Committee, and that some of the ground traversed by this committee is being covered by a committee of his own institute dealing with the future of architecture.

Mr Woodward expresses the view that the architectural profession is gradually losing some of its former dignity and independence, and I understand him to infer that for this reason architects have not kept up to the standard maintained by doctors and lawyers in their respective callings.

If I understand Mr. Woodward rightly, I disagree with him on this point, as I hold exactly the opposite view, viz., that until architects lose still more of their dignity and independence, and form themselves into a professional union similar to that of doctors and lawyers, in other words, obtain statutory registration, they will never attain to the standard of these other callings.—Yours faithfully.

C. McARTHUR BUTLER,
Secretary of the Society.

The Society of Architects, 28, Bedford Square, London, W.C.1.

COMPETITIONS.

BLAENAVON HOUSING SCHEMES.—Members of the Society of Architects are requested not to take part in this competition without first ascertaining from the secretary of the society that the conditions have been approved by the Council.

Mr. H. V. Lanchester, F.R.I.B.A., has left for India to join a Commission dealing with the improvement and development of Cawnpore.

The funeral of the late Mr. William Preston of Hurstead, Maple Street, Blackpool, partner with Mr. C. H. Dryland in the building and contracting firm of Dryland and Preston, Ltd., Littleborough, took place at the Blackpool Cemetery on Saturday week.

According to the *Chemische Zeitung*, experience in the Austrian Government Telegraph Department has shown that zinc fluoride is a good preservative for telegraph poles. A partial application is effective if complete impregnation of the wood is not desired.

A return by the Manchester City Surveyor's department obtained on January 1 shows that in the year ending October last only eleven new houses were built in the Manchester district. There were nearly 1,100 new houses built in 1913, a year which marks the decrease of building operations in Manchester. For the ten years preceding 1913 an average of 2,000 houses a year were erected.

Our Office Table.

Short courses on town-planning and housing, under the direction of Professor Stanley D. Adshhead, M.A., F.R.I.B.A., have been arranged at the suggestion of the Local Government Board. These courses will be open to men who have had at least three years' training as architects, and who have been serving with H.M. Forces. Applicants for admission must submit evidence satisfactory to Professor Adshhead, including, if required, specimens of their work, to show that they have had the requisite previous training. Each course will consist of lectures and studio work. Special lectures will be given by Professor F. M. Simpson, F.R.I.B.A., Professor E. P. Matthews, A.M.Inst.C.E., Mr. Raymond Unwin, F.R.I.B.A., of the Local Government Board, and Mr. L. R. Abbot, clerk to the Urban District Council of Ruislip, Northwood. Further particulars may be obtained on application to the Secretary, University College, London (Gower Street, W.C.1).

A Doorfontein firm—having started by making concrete tiles—succeeded, after many experiments, in turning out what appears a good-class article to take the place of corrugated iron. This tile is made of a composition of concrete and asbestos-waste, which is placed in great tubs, beaten by long-flanged rollers similar to those used in bread-making, and then laid in moulds that turn out a tile a foot square. The tiles are then covered with canvas mats, subjected to a pressure of 60 lbs. to the square inch, left to dry partially for 24 hours, and then plunged into water for some hours longer. They then undergo a further drying process for almost a fortnight, when they are ready for sale, though the makers allege they improve as they get older. The cost per square of 100 ft. is considerably less than that of corrugated iron or the ordinary clay tile, on account, mainly, of the much lighter framework required. The firm now gives a two years' guarantee; and the claim that this tile is not only fireproof, but wet-proof, is borne out by a specimen roof put up some months ago on the firm's own premises, which has come safely through some of the big rainstorms that took place earlier in the year. In appearance the tile looks neat and quite artistic.

The great scarcity of wool in Germany has rendered increasingly difficult the manufacture of air-filters using pockets of woollen material. As air filters are essential in connection with the cooling of electric machines and the operation of compressors and the like, it has been necessary to devise new types of filters not using wool. A firm has developed a filter constructed completely of iron. The abstraction of particles from the air is effected by passing it through iron filtering surfaces that offer a large surface to the current of air, and impose frequent changes in its velocity and direction. The filter differs from other filters without wool in requiring no water or oil, the process being carried out dry.

Waterproofing of drawings and tracings so that they can be used in wet places, is done by the use of a preparation composed of rubber and benzol. A convenient quantity of the solution may be made by adding a piece of rubber about 4in. square to a half pint of benzol in a quart jar. The rubber will soon swell to three or four times its former bulk and will be ready for use in 24 hours. To prepare for use, pour about half the above quantity in another jar for thinning down. If drawings are to be coated, use a rather thin solution that will spread well under a brush. The drawing should be coated on both sides.

The following is a formula for mixing serviceable floor paints:—To one gallon of white lead of the desired shade add $\frac{1}{2}$ lb. of litharge which has been worked out smooth with a little of the paint. This will dry hard. Mix only as wanted. It will harden in the pot. A durable floor paint may be made by adding to paint mixed as usual a small amount of varnish—perhaps one pint or a quart of

varnish to the gallon. If the floors are outside and exposed to the weather, spar varnish is best. If the floors are not exposed to the weather, use floor varnish.

A most interesting exhibition of early drawings and pictures of London is on view at the Burlington Fine Arts Club, about which extreme pressure on our space to-day compels us to postpone further notice till next week. It will remain open till about the middle of March, and includes a small but very good collection of some contemporary furniture. Two fine representations of Tudor London deserve special mention. One is a pen drawing, ten feet long, made by Anthony Van den Wyngaerde, a Fleming in the train of Philip the Second, from the Bodleian Library at Oxford. The other, which is at Hatfield House, and is lent by the Marquess of Salisbury, is also by a Flemish artist, Jeris Hoefnagel, and represents a marriage fete by the old church of St. Mary Magdalen, Bernoldsey. Among the furniture is a fine walnut wood armchair, lent by the Secretary of State for India, carved with the head of Neptune, with front legs in the form of Dolphins, upholstered in red velvet, and embroidered in coloured silks and silver thread with the arms of the East India Company, formerly the seat of the Chairman when presiding over the Court of Directors.

A correspondent of *Indian Engineering* notes that Mr. H. V. Lanchester has taken up the case for architects in India employed by the various Governments, and expresses his own belief that architects so engaged look upon their position as invidious, because they are in a manner only attached to the P.W.D. without forming part of its cadre. There is, he insists, a feeling among architects that they would like independent official recognition instead of being merged in a body not of architects, therefore why not recognise the feeling and create a separate service for them? There is certainly a strong feeling extant that much of the work now done by an engineering department should be done by an architectural department, and if not by a department at least by a profession; and this means that there must be a large increase to the architectural profession. But it would be absurd to look only to home recruitment for such an increase. An architectural training must be provided in India and at once, and it must be on such a scale as to give the graduate a status equal to that of the engineering graduate. This has been suggested for a long time, and the time for action has arrived.

Yesterday the first ocean-going ferro-concrete cargo steamer to be built in this country was launched from the yard at Barrow-in-Furness of the Ferro-Concrete Ship Construction Company. The ship will be named the "Armistice." This vessel formed the basis of a paper read by Mr. T. G. Owens-Thurston at the spring meeting of the Institution of Naval Architects last year. Mr. Thurston referred in his paper to the difficulties in designing such a ship, and the manner in which they had been surmounted. He also dealt with the question of launching, an operation which in the case of ferro-concrete ships requires more than ordinary consideration and care. And he explained the arrangements and precautions which had been made to meet the severe launching conditions in the case of the "Armistice."

An "Architect and Surveyor" writes to the *Birmingham Daily Post* pointing out that up till the year 1910 the supply of houses was invariably kept well ahead of the demand in all the large towns, but the mischievous legislation of that year, based on the false principle of taxing principal instead of revenue only, destroyed confidence, drove capital out of the industry, and frightened investors from buying even at cost prices. Fully ninety per cent. of the houses were built with the intention of being sold, because, with the great majority of speculative builders, as with other manufacturers, a turnover was essential to enable them to keep their businesses going and themselves solvent. The immediate necessities will have to be provided for either by the local authorities or the Imperial Government, or by both combined,

involving a permanent charge upon the rates or taxes for every house erected; but it is unthinkable that every house built in future shall be a charge upon the rates or taxes. To obviate this steps should be taken to endeavour to restore the confidence of the investing public, and the first and most important step should be the repeal of the increment value duty, for it was the introduction of this duty which primarily and principally caused the mischief. With town-planning restrictions and conditions, building bye-laws, and building inspectors, whose duty it is to see that the above-mentioned restrictions, conditions, and bye-laws are all complied with, it is absurd for people to argue, as some do, that speculative builders would not build houses thoroughly suitable in every respect for people to live in.

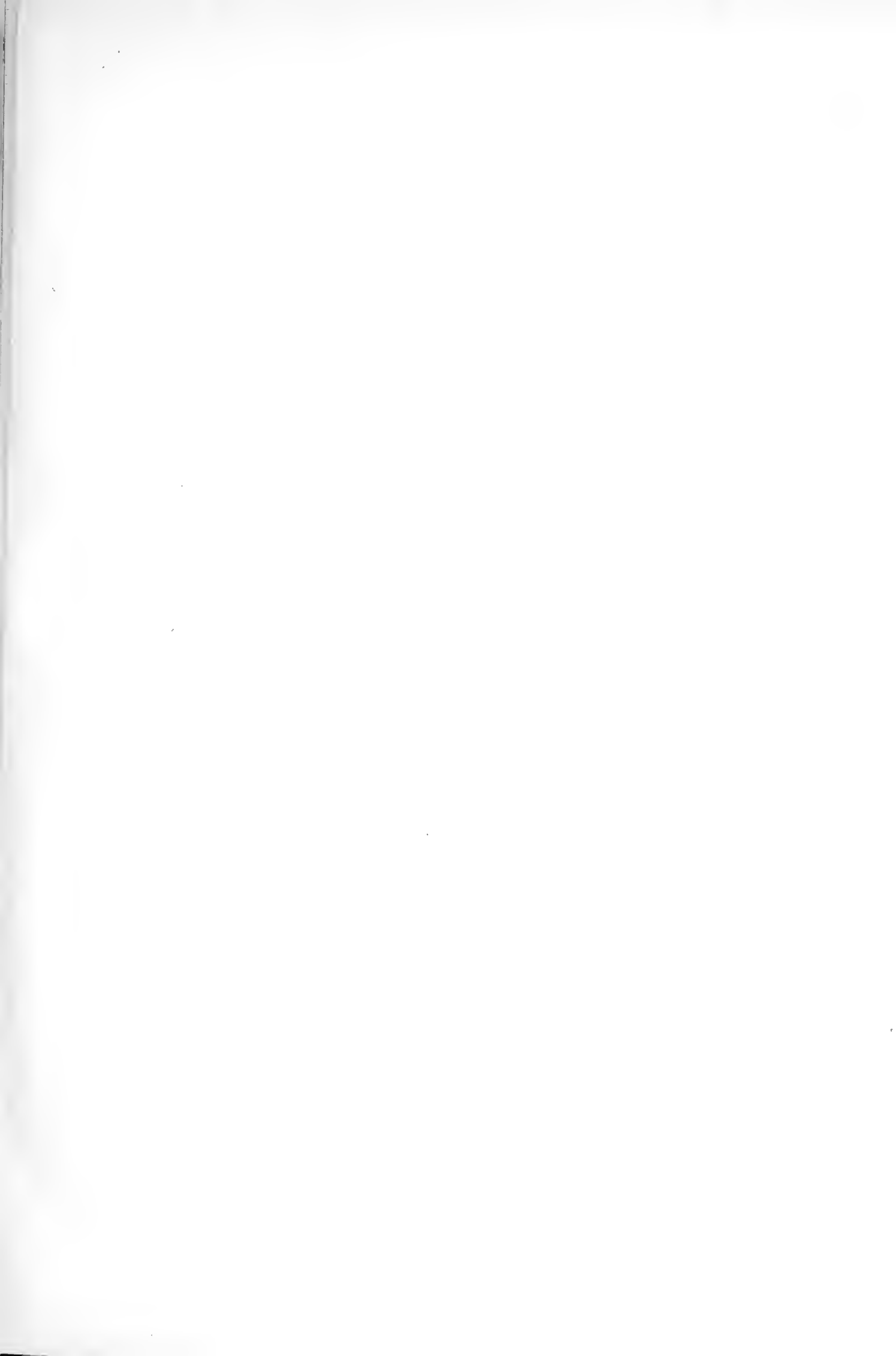
At a conference in London, under the auspices of the Federation of British Industries, to discuss the question of railway reform, a lengthy memorandum in regard to the present position of the State, the railways, and trade was read, after which resolutions were unanimously passed declaring opposition to the nationalisation of the railways; asking for the extension of the powers of the present Railway and Canal Commission Court, with their vesting in a Board of Control consisting of persons of experience in matters pertaining to transport; suggesting that pending other arrangements being made by the State with the railway companies, the present guarantee to the controlled lines should be continued; and recording the opinion of the meeting that the Government should be asked to instruct the Railway Executive to remove the many restrictions imposed, and to reinstate all facilities withdrawn during the war.

At Conway, on Monday, Mr. Richard Lewis Roberts was charged with the theft of three tons of stone chippings, value £1 15s. 3d., some time between October 1 and 24, at Dolgarrog. It was alleged that the defendant, who was engaged in some building work for the Aluminium Corporation at Dolgarrog, had ordered a person in his employment to use for the purposes of that work a quantity of chippings which were lying at the roadside, and which were the property of the Carnarvonshire County Council. The firm, Messrs. Roberts and Schloss, of Liverpool and Prestatyn, were highly respectable, and were entrusted by the Aluminium Corporation with a contract of about £4,000 for the erection of cottages at Dolgarrog. Defendant's solicitor stated that his clients required about six barrels full of granite chippings, and these were ordered and should have been supplied by the corporation several weeks earlier. Owing to the delay, his clients instructed their men to use about six barrels full of the stone from the roadside, for pebble-dashing the walls of the cottages, intending to replace it immediately the quantity which had been ordered was delivered. It was not a case that should have been brought in a criminal court. The bench dismissed the case on payment of costs and the value of the chippings, the total amounting to £6 15s.

The problem of small housing is peculiarly pressing in and about London and its suburbs. On the last census it was shown that there was an appallingly large number of small tenements in which there were from 2 to 6 persons per room, and in some cases the inhabitants actually numbered 11 to one room. No fewer than 758,786 people occupied tenements where the average was over 2 per room, 173,637 over 3 per room, 38,346 over 4 per room, 8,905 over 5 per room, and 2,349 over 6 per room. The number of three roomed tenements was 233,137, and of four-roomed tenements 108,670. The population occupying four-roomed houses was 2,627,934, of whom 725,951 were living more than 2 persons to each room. In one-roomed tenements 116,552 were living more than 2 to the room, and in two-roomed tenements the figure was 277,592. To deal with this condition of things it is said Sir Auckland Geddes will place before the House of Commons early in the approaching session a scheme, which, not yet drafted in its final shape, will it is "hoped" be approved by Parliament early in the year.



WAR MEMORIAL FOR MILL HILL SCHOOL : R.A. MODEL.
Mr. THOS. E. COLLETT, F.R.I.B.A., Architect. Mr. A. BERTRAM PEGRAM, Sculptor.





AN AEROPLANE BIRD'S-EYE VIEW OF ST. PETER'S
From a Water-Colour Drawing by Ir

JANUARY 8, 1919.



AND ITS IMMEDIATE SURROUNDINGS AT ROME.
ANDREW N. PRENTICE, F.R.I.B.A.





Bedford Le Mere, Photo.

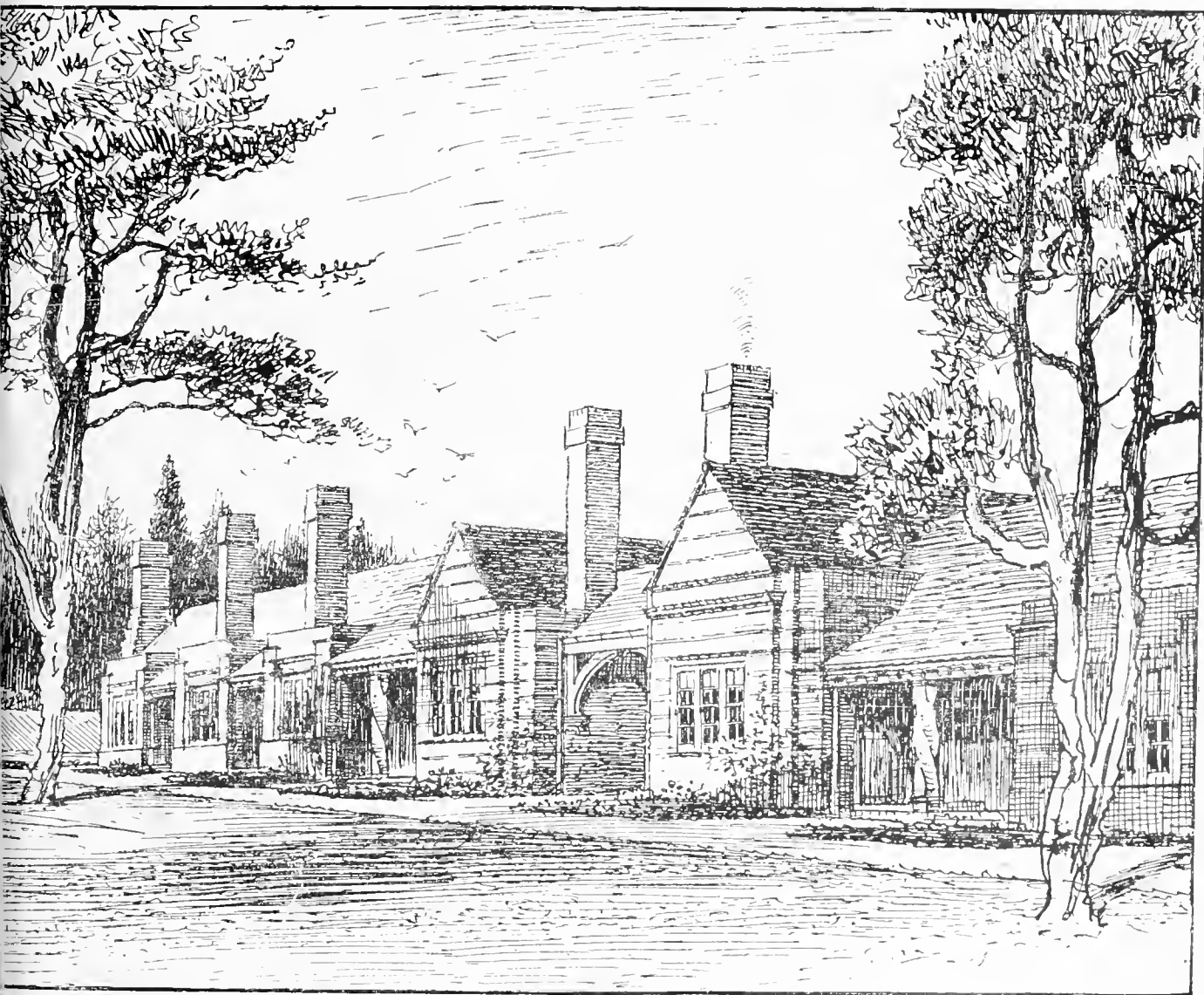
THE IMPERIAL WAR GRAVES CROSS (THE FIRST ONE ERECTED) IN THE PALACE
PRECINCTS, LAMBETH. Mr. REGINALD BLONFIELD, M.A. Oxon., R.A., F.S.A., Architect.

2/2

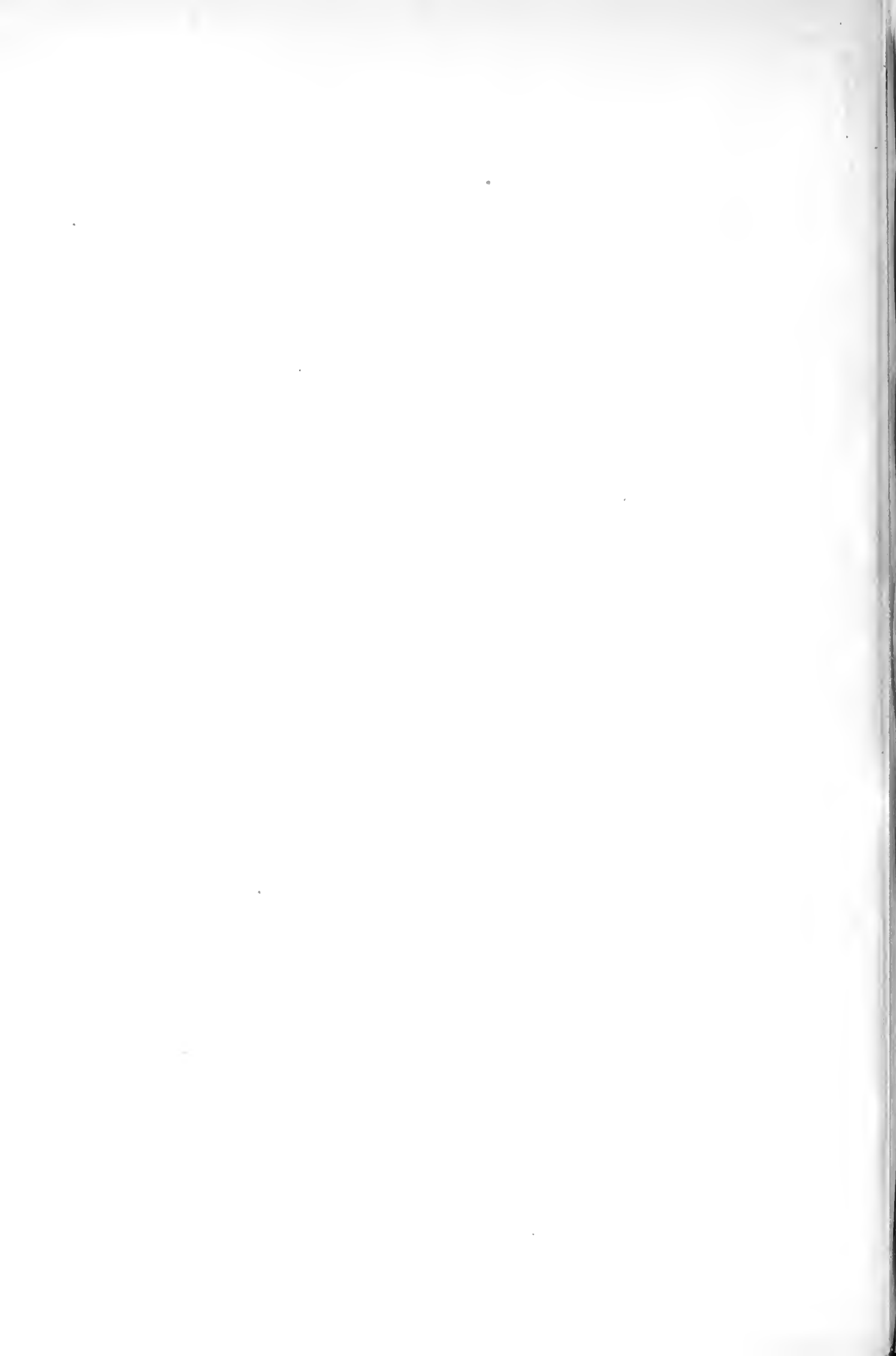


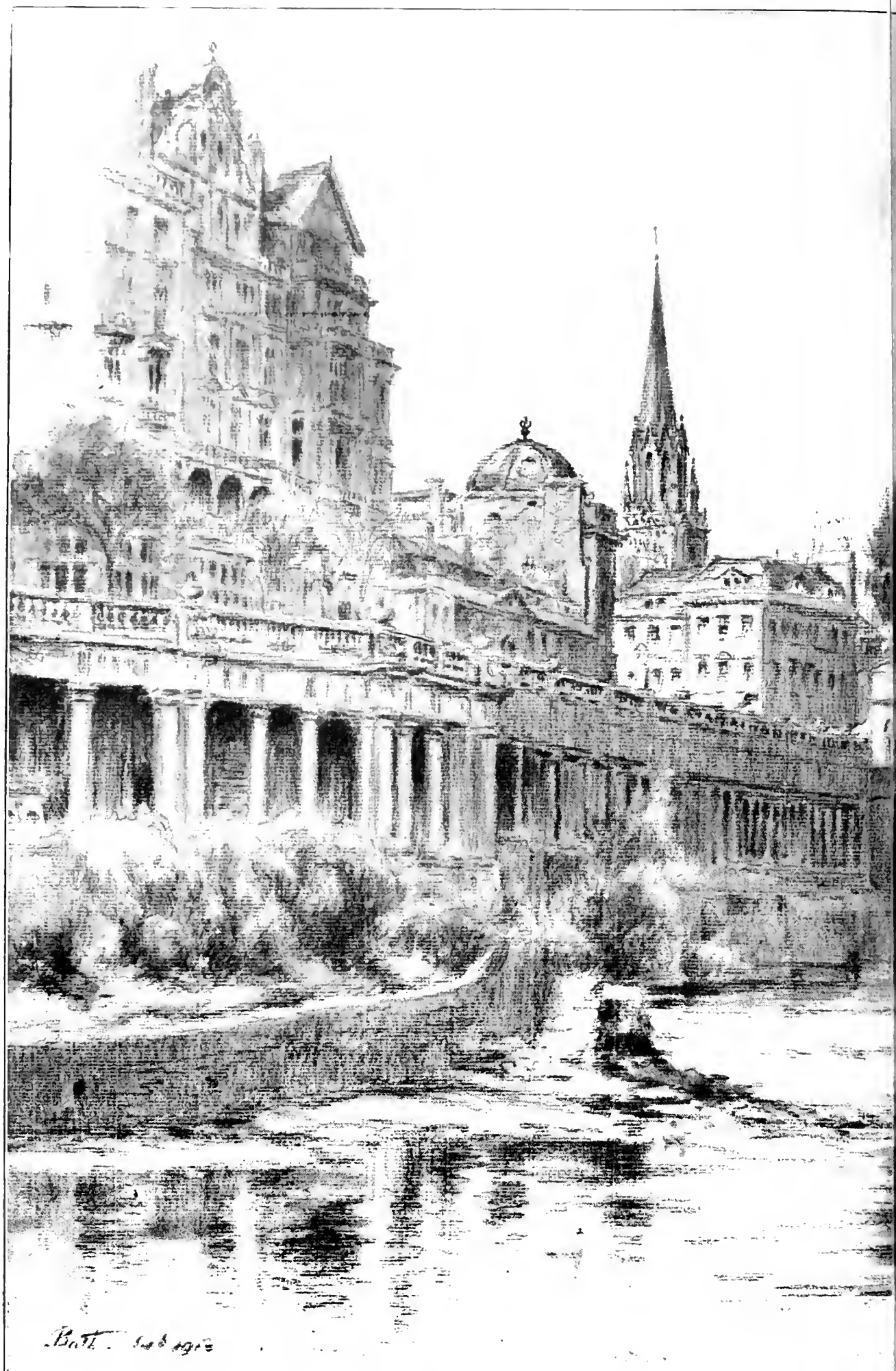
THE WHITELEY HALL AND TWO BLOCKS OF COTTAGES : ON
Sir ASTON WEBB, K.C.V.C.

JANUARY 8, 1919.

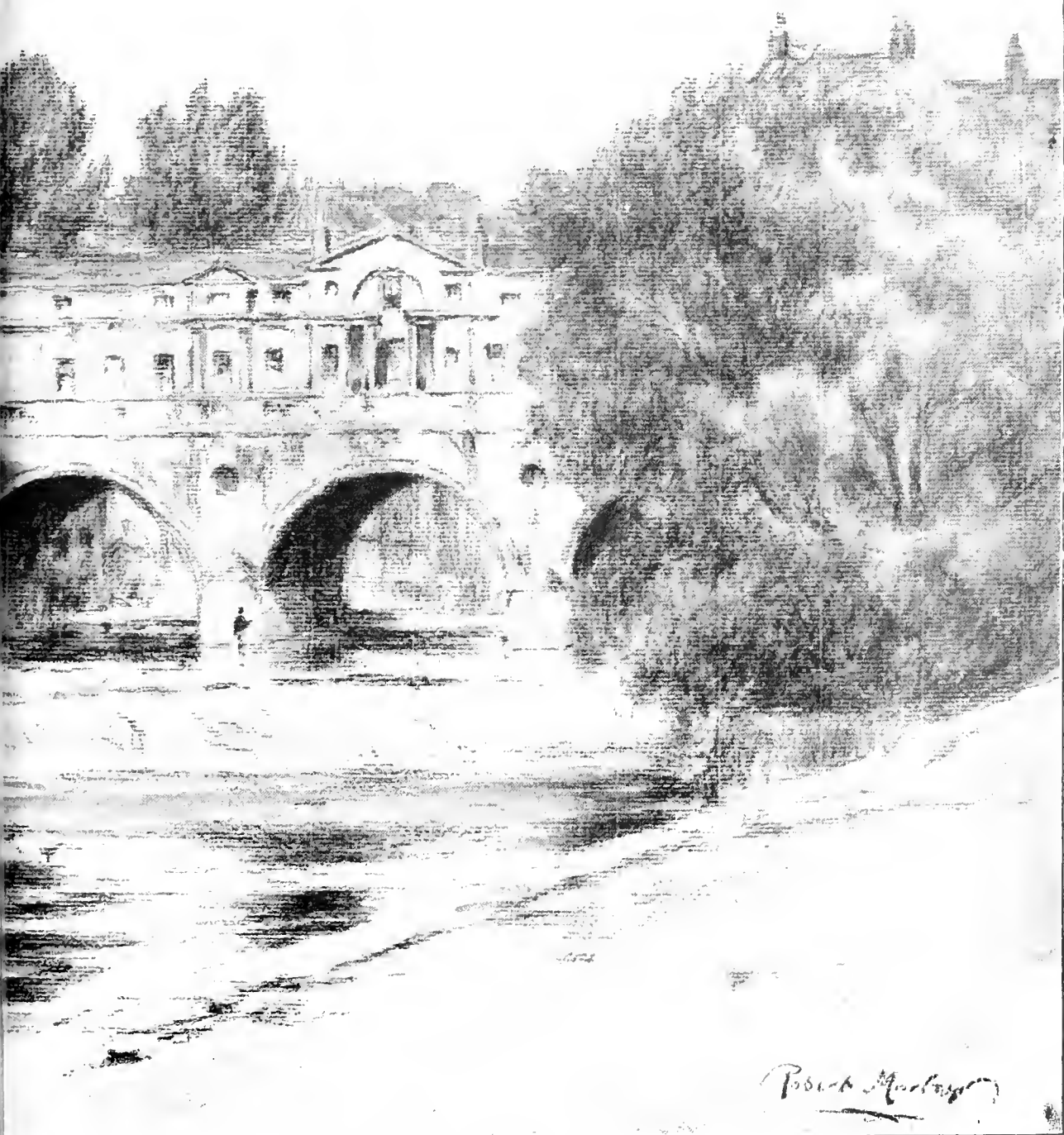


GROUP OF THE WHITELEY HOMES, BURHILL PARK, SURREY.
R.A., F.S.A., Architect.

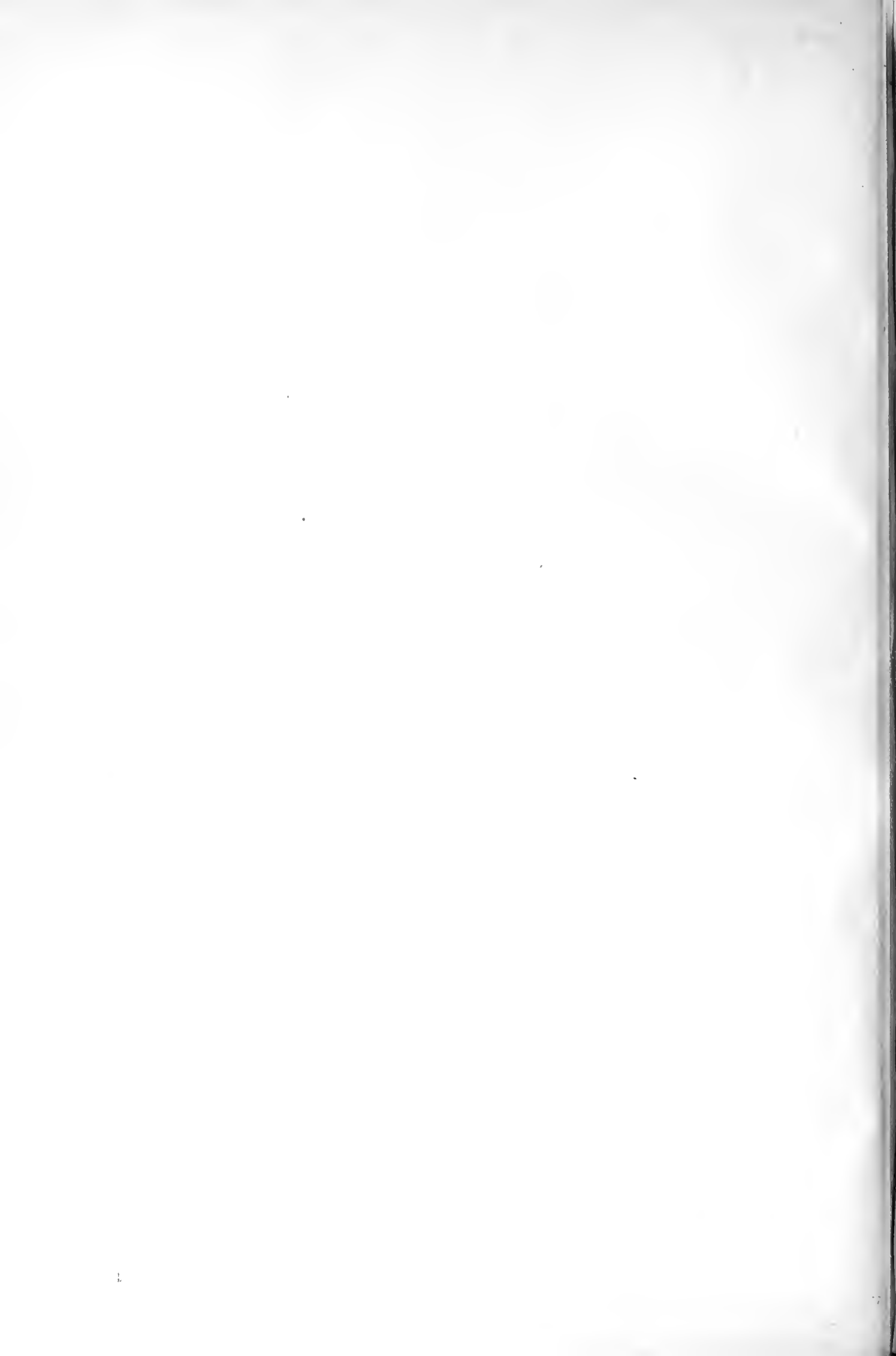




VIEW OF BATH, INCLUDING THE PULTENEY BRIDGE OVER THE AVON. Water Colour Drawing from the Exhibition of the Royal Society.



VON, ERECTED BY EARL PULTENEY, 1770.—ROBERT ADAM, Architect.
of British Artists by Mr. ROBERT MORLEY, R.B.A., 1918.



LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

Owing to stoppage of supplies all prices have advanced considerably, and are controlled by the Director of Materials.

IRON.

Table listing iron products: Rolled Steel Joists, Compound Girders, Sections, Compound Stanchions, Angles, Tees, Channels and Flitch Plates, Wrought-Iron Girder Plates, Steel Girder Plates, Steel Sheats, Steel Strip, Basic Bars, Mild Steel Bars, Steel Bars, Ferro-Concrete Quality (basis price).

Prices controlled by Ministry of Munitions.

OTHER METALS.

Table listing other metals: Lead Water Pipe, Barral Pipe, Lead Pipe, Lead Pipes, Lead Pipes, Composition Gas-Pipe, Lead Soil-pipe, Lead, Common Brads, Lead, 4lb. sheet, Lead Shot, Copper, Tin, Do., Bars, Pig Lead, Sheat Lead, Galvanne White Lead, Refined Red Lead, Sheat Zinc, Spelter, Old Lead, Tin, Cut nails.

BRICKS.

Sale, Purchase for use, of all Bricks exceeding 20,000 in number is now forbidden by the Minister of Munitions except by licence of the Controller of Bricks, to whom all applications for permits must be made at Whitehall Place, S.W., marked "Building Brick Permit."

(All prices net.)

Table listing bricks: First Hard Stocks, Second Hard Stocks, Third Hard Stocks, Mild Stocks, Picked Stocks for Facings, Flattons, Best Faramah Red, Best Red Pressed Ruabon Facing, Best Blue Pressed Staffordshire, Ditto Ballnose.

WHITE AND COLOURED GLAZED BRICKS

WHITE IVORY AND SALT GLAZED (PER 1,000).

Table listing white and coloured glazed bricks: Stretchers, Headers, Quoins and Bullnose.

OTHER COLOURS.

Table listing other coloured bricks: Stretchers, Headers, Quoins and Bullnose.

MOULDED BRICKS.

Stretchers and headers, 8d. each (plus 50%). Internal and external angles, 1s. 2d. each (plus 50%). Majolica and soft glazed stretchers and headers, £28 7s. 6d. per 1,000. Majolica and soft glazed quoins and bullnose, £33 7s. 6d. per 1,000. NOTE.—Above prices are in full truckloads at London Goods Station.

SAND AND BALLAST.

Table listing sand and ballast: Thames Sand, Ballast, Pit Sand, Best Washed Sand.

CEMENT AND LIME.

Table listing cement and lime: Best Portland Cement, Ground Blue/Lias Lime, Grey Stone Lims, Stourbridge Fireclay in sacks.

STONE.

Table listing stone: Yellow Magnesian, Red Mansfield, White Mansfield, Red Corsehill, Darley Dale, Grienshill, Closeburn Red Freestone, Ancaster, Chilmark, Elm, Hard York, Do. do. 6 in. sawn both sides, Hard York, 3 in. slab sawntwo sides, random sizes.

OILS.

Table listing oils: Rapeseed, Ditto, brown, Cottonseed, refined, Olive, Spanish, Seal, pale, Coconut, Ceylon, Ditto, Mauritius, Palm, Lagos, Ditto, Nut Kernel, Oleine, Sperm, Linseed Oil, Baltic Oil, Turpentine, Putty (Genuine Linseed Oil).

TILES.

Table listing tiles: Plain red roofing tiles, Hip and Valley tiles, Broseley tiles, Ruabon red, brown, or brindlad ditto (Edwards), Ornamental ditto, Staffordshire (Hanley) Reds or brindled tiles, Haod-made sand-faced, Hip tiles, Valley tiles.

SLATES.

Table listing slates: Best Welsh Blue (Portmadoc) Slates, Minimum prices for Portmadoc Slates delivered within cartage limits.

Table listing slates with dimensions and prices: 24 by 12, 22 by 12, 22 by 11, 20 by 12, 20 by 10, 18 by 12, 18 by 9, 16 by 12, 16 by 10, 16 by 9, 16 by 8, 14 by 10.

Damp Course.

Table listing damp course: 18 by 9, 14 by 9, 12 by 4 1/2.

Note. Bangor Slates:—

Table listing bangor slates: 24 by 12 to 20 by 10, 20 by 10 to 14 by 10.

Where quotations for slates are not obtainable at present architects and builders will do well to specify and use some of the excellent substitutes which have found favour of late. Prices of some of the best of these are as follows:—

ASBESTOS ROOFING TILES, supplied by the British Uralite Co., Ltd., 8, Old Jewry, London, E.C. From £4 14s. per 1,000, 9 in. by 9 in., 400 tiles per square of roof covered, price per square. 37s. 8d., to £33 8s. per 1,000, 24 in. by 24 in., 34 tiles per square of roof covered, price per square, 22s. 3d.

ALLIGATOR ROOFING, supplied by the British Roofing Co., Ltd., 40, Trinity Square, E.C.3, in rolls of 216 feet super, with the necessary mastic and nails for fixing: 1 ply, 20s. 6d. per roll; 2 ply, 26s. 6d. per roll; 3 ply, 34s. 6d. per roll.

"POLITE." Made by Bell's Asbestos Co., Ltd., Southwark Street, S.E. Standard tiles in red, blue, and grey colours, carriage paid to nearest railway station, 15 1/2 by 15 1/2—Red, £14 3s. 3d. per 1,000; grey or blue, £12 15s. per 1,000. Approximate prices per square, fixed complete to roof-boards or battens—Red, £1 10s. 9d.; grey or blue, £1 8s. 9d. At present above prices are subject to a premium of 1 1/2 to 3 1/2 per cent. in consequence of rise in prices of material and other war exigencies.

ROK ROOFING. Made by D. Anderson and Son, Ltd., Lagan Felt Works, Belfast, and Roach Road Works, Old Ford, London, E. Prices and particulars in new booklet "V." to be had on application.

LION ROOFING, in rolls, 24 yds. by 1 yd. Manufactured solely by F. McNeill and Co., Ltd., Roofing Felt Works, Bunhill Row, E.C., and Kirkimbiloch,

N.B., etc. Lowest current prices and Lion Roofing pamphlet free on application to F. McNeill and Co., Ltd., 4, South Place, London, E.C.2.

GLASS IN CRATES.

Table listing glass in crates: English Sheet Glass, Fourth, Thirds, Fluted Sheet, Hartley's English Rolled Plate.

Table listing glass in crates with white and tinted options: Figured Rolled, Reponsive, Rolled Sheet, Stippolyte.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of THE BUILDING NEWS, Effingham House, 1, Arundel Street, Strand, W.C.2, and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

**Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects, small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

**Our Direct Subscription Agents for Australia are Messrs. E. T. Kibblewhite and Co., Printers and Publishers, 19, York Chambers, 105, Liverpool Street, Sydney, New South Wales; for Japan, The Maruzen Co., Ltd., 11-16, Nishinabashi Tori Sanchoime, Tokyo who will receive Subscriptions at £1 10s. per annum on our account. Copies of the paper will be sent by us direct to the subscribers' address.

**The special rate to Canada is £1 10s. = \$7 00c. for 12 months, and 15s. = \$3 65c. six months. Our Direct Subscription Agents for Canada are Messrs. Sells, Ltd., 302, Shaftsbury Buildings, McGill Street, Montreal, who will receive Subscriptions, £1 10s. per annum, on our account.

NOTICE.

A few bound volumes of Vols. XXXIX., XLI., XLVI., XLIX., LII., LVI., LXII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXVIII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., LXXXVI., LXXXVII., LXXXVIII., LXXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CI., CII., CIII., CIV., CV., CVI., CVII., CVIII., CIX., CX., CXI., CXII., CXIII., and CXIV. may still be obtained, 12s. each, post free 12s. 10d.; all other bound volumes are out of print.

REPLIES TO ADVERTISEMENTS.

Replies to advertisements can be received at the Office, Effingham House, 1, Arundel Street, Strand, W.C.2, free of charge. If to be forwarded under cover to advertiser, an extra charge of Sixpence is made. (See Notice at head of "Situations.")

Cheques and Post Office Orders to be made payable to THE STRAND NEWSPAPER COMPANY, LIMITED, and crossed London County and Westminster Bank.

Advertisements for the current week must reach the office not later than 3 p.m. on Tuesday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by first post on Monday to secure attention.

RECEIVED.—C and Co., Ltd.—Chas. R. and Son—L. R. and Co., Ltd.—W., Ltd.—A. J. W.—W. H. S. and Son—C. E. P.—J. H. and Co.—M. Co.—B. of B.

R. J. L.—No. A. and Co.—Yes; see p. 401 last vol.

E. R.—Our recent past issues in which the Local Government Board and R.I.B.A. premiated designs for workmen's dwellings have been illustrated are those of April 10, 17, 24, May 1, 8, 15, 22, 29, June 5, 12, 19, 26, July 20 and 27. The fourteen numbers can be had post free for 7s. 6d. The seventeen illustrated articles by Mr. Robert Thomson on "The Problem of the Perfect Dwelling," which appeared in our issues of from April 10 to Sept. 19, 1917, can still be had for 9s. 3d. post free. Suggested Types of Houses, issued by the Scottish Local Government Board, were given in our issues of September 4 and 11, post free 1s. 1d. The three series will be found of the greatest service to all likely to be engaged in the coming housing schemes.

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TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ANNAN.—For alterations at the Temperance Hotel, Annan, for the Dumfries County Council. Accepted tenders:—

Black, G., Annan, remedial work, £96 15s. 9d.;
 McCulloch, J., Annan, painting, 140 12s.

HILLINGDON.—For widening Stratford Bridge, Hillingdon Hill for the Middlesex County Council:—

Mowlem and Co., Westminster, £2,925 0 0
 Kavanagh and Sons, Surbiton, 2,893 0 0
 Morecroft, H., Acton, 2,778 0 0
 Ford, F., Willesden (accepted), 2,374 0 0

LEWISHAM.—For installing a system of heating by steam radiators, to the Lewisham Board of Guardians:—

Benham and Sons, Ltd., Wigmore Street, W., £113 18 6
 (Accepted.)

NEWPORT (S.W.).—For constructing tanks for water filtration at Bembridge, for the Isle of Wight Rural District Council:—

Chandler, E., £375, concrete engine foundations 17s. 6d. per yard (accepted).

SOUTHAMPTON.—For the erection of X-ray developing and waiting-rooms at Shirley Warren, for the Guardians:—

Playfair and Toole, £1,653 0 0
 Messrs. Jenkins and Sons, 1,362 0 0
 Jukes and Sons, 1,488 0 0
 Cawte, H., 1,437 0 0
 Stevens, H., and Co. (accepted), 1,277 0 0

Protecting estimate of the architect (Mr. W. Wheeler), £1,500.

ULVERSTON.—For conversion of premises, No. 2, Princes Street, into clerk's office, for the North Lancashire Education Committee:—

Wearing, N., £124 0 10
 (Accepted.)

TO ARMS!

ROYAL ENGINEERS (VOLTS.), LONDON ARMY TROOPS COMPANIES.

Headquarters: Balderton Street, Oxford Street, W.1.

REGIMENTAL ORDERS, No. 2, by LIEUT.-COL. C. B. CLAY, V.D., Commanding.

MONDAY, JAN. 13, to SATURDAY, JAN. 18.—Drills as usual.

C. HIGGINS, Capt. R.E., Adjutant.

LIST OF TENDERS OPEN.

ARCHITECT AND HOUSING.

Jan. 14.—Architect wanted by the Newton-in-Makerfield Urban District Council, to give whole time to housing scheme. Application to C. Cole, Clerk to the Council, Town Hall, Earlestown, Lanes. (See advt.)

BUILDINGS.

Jan. 22.—Rebuilding laundry at Kingsland Road House. For the Shoreditch Guardians. Plans and specifications at office of the architect, Mr. A. W. S. Cross, F.R.I.B.A., 45-6, New Bond Street, W. Tenders to Mr. John C. Clay, at Board Room, 204, Boxton Street, N.

ENGINEERING.

Jan. 10.—Sinking two pits, 20 ft. inside diameter, at Polkemmet, near Whitburn. Further particulars may be obtained at the colliery. Tenders to Secretary, William Dixon, Ltd., 1, Dixon Street, Glasgow.

CHIPS.

A public subscription has been opened to purchase the summer-house at Olney (Beds) in which Cowper wrote many of his poems.

A road screen is to be placed in the parish church at Holbeach, South Lincolnshire, in memory of those from the parish who have fallen.

A memorial of those connected with the parish who have fallen in the war is to be placed in the church by the rector of St. Mary Aldermary, Queen Victoria Street.

A memorial tablet has been placed in Holy Trinity Church, Guildford, to Lieut.-Colonel D. Warren, the first commanding officer of the 1st Queen's Regiment to fall in action.

The South Suburban Gas Company announce that as from the Christmas readings the price of gas will be reduced by 3d. per 1,000 ft. The company serve the Sydenham, Bromley, and West Kent districts.

As a war memorial the executive committee of the Llandudno Improvement Association recommended that a monument should be erected on Brynau Hill, the eminence on the south side of the town, and that footpaths giving free approach to it should be provided.

The city of Lyons is sending to England a deputation of fifteen members and officials to study the most recent developments in the purification of the water supply and the treatment of sewage in great towns. They will visit London, Birmingham, Leeds, and Manchester.

Lieut.-Colonel P. F. Story, R.E., who has been serving since September, 1914, has gained the D.S.O., and a bar, and has been three times mentioned in despatches. Several other members of the society have gained the D.S.O., but Colonel Story is the first member to be awarded a bar to this distinction.

The next ordinary general meeting of the Surveyors' Institution will be held in the Lecture Hall of the Institution on Monday, January 13, 1919, when a paper on "The Second Report of the Committee dealing with the Law and Practice relating to the Acquisition and Valuation of Land for Public Purposes," will be read by Mr. Eustace Hills. The chair will be taken at 5 o'clock.

The Cranbrook R.D.C. are consulting with Mr. Caley, the architect employed by Major Stockwell, in regard to the drainage proposal at Goudhurst.

At the last meeting of the Metropolitan Water Board it was reported that a licence had been granted to proceed with the construction of the Board's new head office in Rosebery Avenue.

It was stated at a meeting of the Egham District Council that the Commissioners of Woods and Forests required £2,000 for six acres of Crown land which the council wanted for housing purposes.

Mr. Sheriff Banister Fletcher, F.R.I.B.A., C.C., will commence a course of lectures on "English Medieval Architecture," at the L.C.C. Central School of Arts and Crafts tomorrow (Thursday).

As a memorial to the men of Aboyne and Glentanar it is proposed to erect a hall in Aboyne, on the site of the present building, and to insert in one of the walls a bronze plate bearing the names of those who have fallen in the war.

The foundation stone will be laid on January 16 in Worcester of that City's War Memorial, which is to be a Home for Disabled Sailors and Soldiers, and is to cost £10,000. The contract for the first work is to be given out.

The Bishop of Cork, Cloyne, and Ross is convening a meeting to consider what form a memorial should take, which it is proposed should be erected in St. Fin Barre Cathedral, Cork, of those who have given their lives in the great war.

The past year has been an exceptionally busy one for the disposal of country houses, state Messrs. Hampton and Sons, Limited, Cockspur Street, in their annual review of the estate market. Building land, however, is still a weak spot in the market.

At the meeting of the Society of Architects on January 16, at 8 p.m., after the presentation of the annual report and routine business, there will be a discussion on "Some Aspects of the Housing Problem," to be opened by Major Herbert Freyburg, F.S.I., Member of Council.

Councillor William L. Harrison, of Hull, one of the founders of the Institute of Plumbers, died on December 30. He undermined his health by duty as a special constable, and had a seizure the previous week when a son, who had been a prisoner in Germany, returned home.

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AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

Two Blocks of Cottages and Hall, forming one group of the Whiteley Homes, Burhill Park, Surrey. Sir Aston Webb, K.C.V.O., C.B., R.A., F.S.A., Architect.
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Strand, W.C.2

Old Furniture and Tapestry from Chilham Castle, near Canterbury, Kent. Oak carved Buffet, Italian walnut carved Cassone, oak half-tester Bedstead, and Brussels Tapestry Panel. Sold by Auction, Jan. 13, 14, and 15, by Messrs. Knight, Frank, and Rutley.
Public Baths, Shops, and District School Clinic, at Five Lane Ends, Bradford, Yorkshire. Plans, Elevations, and Section. Mr. W. Williamson, Licentiate R.I.B.A., City Architect.

Currente Calamo.

Mr. Lloyd George's Ministerial reshuffle seems to have come as a general disappointment to his supporters. We have no more claim than the man in the street to criticise the principal changes, and, probably, less desire; but, so far as the round holes into which some of the square men of lower degree have been shoved, or exchanged, are concerned we should smile but for the conviction that they will be little more than stop-gaps. How many more new Presidents of the Local Government Board, for instance, are we to have before they are all consoled with peerages; and, in the meanwhile, what about Housing? Dr. Addison will not do much to hasten the work, we fear, otherwise than by talk, and possibly by more of the sort of recommendations and reports issued and organised by his predecessors. Probably he has gone to bury the Local Government Board decently when the new baby, the Ministry of Health, is born!

Mr. Eustace Hill's temperate criticism of Mr. Leslie Scott's Committee upon the acquisition and valuation of land, in his paper read before the Surveyors' Institution on Monday last, which we give elsewhere, will be read with edification. It is much on the lines we briefly indicated in our summary last week, except that we should go further against some of the principal recommendations. We cannot see why value to the owner is to be replaced by "the market value as between buyer and seller." The owner of land taken for public uses is seldom a willing seller; and, when he is not, it is mostly because he has other possibilities for the utilisation of his property, because he is content to wait for developments, as he has as surely as much right to do as a tradesman who stocks an article for which there is little or no public demand today, but which he foresees, or thinks he foresees, will be so in the future. We see little justice, again, in the condemnation of the payment of increased value because it is "specially adaptable" to public purposes, or the proposal to allow promoters to pick the eyes out of a property "whenever they think fit." It is true that the reservation of "consequential damage" by the Committee

might in some measure protect the owner, but with our past experience with regard to small holdings we doubt if it would benefit him, or indeed anyone else except the wide-awake speculator who is generally lying in wait for adjacent possibilities in the shape of sites hoisted in value at the cost of owner and the compulsory promoter. Every point in the Report demands the most careful discussion. Taken as a whole, its general trend is unnecessarily drastic and disturbing.

It is stated by the Press Association, "officially," that the details of the Government Housing Scheme are settled, and that the first houses will be begun almost immediately. A Chief Commissioner in London and eight District Commissioners of Housing throughout England and Wales will administer the scheme, assisted by "adequate technical staffs." A manual is in course of preparation, and will embody plans of several types of houses of the latest designs, such as the prize designs of the recent competition instituted in conjunction with the Royal Institute of British Architects, the Tudor-Walters report, and "type" plans prepared by the Local Government Board. The general aim will be to secure that only twelve houses shall be erected to the acre in urban areas and eight in rural areas. A great number of them, in addition to a kitchen, larder, scullery, three bedrooms, washhouse, and bathroom or bath, should, in the opinion of the Local Government Board, be provided with a comfortable living-room or parlour, and garden. Virtually all the essential fittings are being standardised. Arrangements are being made with the Ministry of Munitions to place orders for these, and where practicable existing munition factories and works will be utilised for their production to provide employment for as many munition workers as possible. The Local Government Board supports the proposal that in districts where there are building trades employers of proved capacity the work should be given to them by competitive tender in preference to contractors taking up huge contracts from the centre. The Board, acting in conjunction with the London County Council, is making arrangements for the erection in London of a village of model houses. Each house will be a com-

plete model for the guidance of local authorities throughout the country, both as regards architectural style and internal arrangements. The houses will be erected from the plans which won the premiums in the recent competition arranged by the Royal Institute of British Architects. Local authorities should be asked to send in through the District Commissioners to the Local Government Board at the earliest possible date definite statements as to their proposals and difficulties. In the second stage the planning of the site should be dealt with, and as the construction of the roads and sewers cannot be entered upon until a plan of lay-out has been approved, local authorities should be encouraged to speed up the preparation of these estate development plans, which should be in full accord with modern ideas of town-planning, and be prepared by a competent architect or surveyor. In the third stage the proposals of the local authority with regard to designs and types of houses and cognate matters should be submitted to the District Commissioner. When the proposals of the local authorities have been finally settled, they should be sent on to the Central Department for approval, and arrangements should then be made for the holding of a public inquiry by a housing inspector sent by the Central Department.

We are not surprised that all this, which will take as long as demobilisation, has stirred up the principal local authorities to remonstrance. At Birmingham last Thursday, a conference of representatives of the largest local authorities in the country, convened by the Lord Mayor of Birmingham (Alderman Sir David Brooks), was held at the Council House, to consider the question of the shortage of houses. Sir David Brooks presided, and there were present the Lord Mayor or his delegate from Newcastle-on-Tyne, Glasgow, Sheffield, Manchester, York, Bristol and Cardiff, together with municipal officials from those cities. The Birmingham representatives were Alderman Neville Chamberlain, M.P., Councillor G. Cadbury, jun., and Councillor Lucas, representing the Housing Committee; the acting town clerk (Mr. F. H. C. Wiltshire), and the city treasurer (Mr. A. Collins). The main business of the conference

was a discussion of the Government proposals, in view of the fact that, in the opinion of the Lord Mayor, there was need for greater speed in the provision of such houses than could be expected from the Government scheme. Various suggestions were considered by which the actual building of houses could be speeded up, involving the demobilisation of sufficient labour to renew the working of brick-making plant, joinery establishments, and other departments of the building trade. The Government proposals for standardising certain patterns of internal fittings were considered, and regarded, so far as they went, as helpful, but were not deemed to be sufficiently expeditious. The financial proposals also were closely reviewed, and it was felt that the extent to which the Government proposed to take financial responsibility was not sufficient to induce local authorities to go ahead with the provision of a large number of houses. Local authorities in such circumstances would not know what would be the ultimate burden, and, as a precaution against the assumption of an undue liability, the Birmingham Corporation had expressed an opinion in favour of proceeding as far as a penny rate, leaving the balance to be found out of the National Exchequer. The capacity of a penny rate, however, was only comparatively small, and, consequently, not enough houses could be found unless the Government were to expand very considerably the amount of financial assistance. The conference decided to frame a series of resolutions in a form likely to secure acceptance from all the principal local authorities. After the resolutions have been approved by the town councils concerned, a deputation is to be appointed to lay the views of the local authorities before the Chancellor of the Exchequer and the Local Government Board.

Mr. Herbert Baker's letter in the *Times* last Thursday on War Memorials will, we trust, help to prevent further desecration of the memory of the dead of the sort that is being perpetrated by doubtless well-meaning but somewhat thoughtless people. As Mr. Baker points out, a war memorial should express not only the idea of honour to the dead, but also the ideals for which they fought. We all have a keen desire that their sacrifice may not be in vain, and in our memorials to them we may make a first attempt to realise it. The article of commerce, clock, or fountain, or statue can give happiness to no one; and it is happiness that they died for—the future and greater happiness of their country. Mr. Baker bids us make our lovely villages yet more lovely, our ugly towns less ugly, and to let the work, whatever it is, be done, if possible, by the workmen, and in the materials of the neighbourhood. Even if some failures come of this attempt at native expression, they cannot be greater failures than our characterless memorials of the past. There is a natural inclination among the clergy to think of memorials as a means of beautifying their churches; but, apart from the fact that ecclesiastical

art is now not apt to be very expressive, war memorials in churches are likely to be lost among other memorials; or, if they are striking enough to draw attention to themselves, they will draw attention away from the church; while, if the memorial is merely a beautifying or ornamenting of the church, it is hardly a war memorial. As for "War Museums," as Mr. Baker insists, "which must, for the most part, preserve the relics of the horrors and of the material ingenuities of war—they would never worthily perpetuate the noble memories or express the spiritual ideals which have justified the war and its sacrifices. The memorials must be perpetual witnesses to the vision without which the city, or the nation, perisheth."

Not a few people have been puzzled by the evident disproportion in the lines of the figure of Britannia on the new ten-shilling notes. Whether the artist had some secret grudge against Britannia we do not know, but, as several have pointed out, he has made one of her arms shorter than the other. The outstretched arm, if allowed to swing down by the side of the figure, would reach to the knee instead of to the upper portion of the thigh, as in normally-built persons. The left arm, resting on the shield, is distinctly shorter than the right. Assuming Britannia to be a woman 5ft. 6in. in height, then her arms, in accordance with the proportions exhibited, would be about 29½in. and 24in. long respectively.

EARLY DRAWINGS AND PICTURES OF LONDON.

In many respects the exhibition of early drawings and pictures of London, which we briefly mentioned last week, and which will remain open till about the middle of March, is the most interesting now on view, and, as always, the catalogue is a model of perspicacity and accuracy. Members of the club and outside contributors have alike combined to produce a larger percentage than has ever been shown at any similar exhibition, and not a few which have never been seen except by the courtesy of their owners.

THE KING'S EXHIBITS.

Among the most generous it is gratifying to find His Majesty the King, whose drawings from Windsor are a leading feature, as also those sent by Sir Edward Coates, which are gratifyingly numerous, although only a small instalment of his unique collection. The King's exhibits include several of Canaletto's best pen and wash drawings. No. 4 is a view of Westminster Bridge and Westminster from mid-stream. The western towers of Westminster Abbey are shown, together with Westminster Hall, St. Stephen's Chapel, and the church of St. John the Evangelist, with its four queer towers, and in the distance Lambeth Palace. No. 5 is a view down river from the gardens of Somerset House, and No. 7 a view up river from the same. No. 8 is an animated scene, the river crowded with sailing boats and barges, all proceeding up stream, many Westminster buildings being shown in detail. No. 11 is another view up river, the first notable object on the right being York Water Gate, at the end of Buckingham Street, with the house behind it where Pepys lived with Hower, rebuilt later. Next to it is York Water

Tower, part of the waterworks established by Charles II. to supply the West End with Thames water, afterwards burnt down and re-erected in 1690. Westminster Bridge is shown unfinished; it was opened in 1750. A rare example of the penwork of Wenceslaus Hollar is No. 6, a view down river, with old St. Paul's faintly shown in the distance. Born at Prague, Hollar was brought to England by the Earl of Arundel in 1637. In the Civil War he served under the Marquess of Winchester, and was taken prisoner at Basing House, but escaped to Antwerp. On his return he was appointed designer to the King, and spent the rest of his life here, except during a short interval when Charles II. sent him to Tangiers. He did many fine etchings of London, but died in poverty. No. 9 is also a Hollar. It is a water-colour, showing a south view of the Abbey from the river, with Henry VII.'s Chapel and the Chapter House, the tower to the left of the latter being the King's jewel house. No. 14 is a water-colour showing part of the Piazza, Covent Garden, designed by Inigo Jones. The artist, according to a pencil note beneath it, was Thomas Sandby, the first Royal Academy Professor of Architecture, and brother of Thomas Sandby, in whose collection it originally was. Nos. 16 and 18 are also by Thomas Sandby, showing old Somerset House and garden; and so is No. 23, which depicts a camp near the Serpentine in Hyde Park. No. 24 is a view of the second built Opera House in the Haymarket, by R. B. Schnebbelie, a native of Zurich, who died about 1849. No. 25 is the King Street Gate House, demolished in 1722, a water-colour by George Vertue, who did many excellent engravings for the Society of Antiquarians. No. 26 is the Old Playhouse, in Portugal Street, where "The Beggar's Opera" was produced, finally demolished for the enlargement of the Museum of the College of Surgeons. No. 28, by G. Shepperd, is "The Nursery," Golden Lane, a school for the education of children for the stage, erected as the result of a patent granted by Charles II. to one of the Legge family. No. 35, a water-colour by S. H. Grimm, another Swiss artist, who settled down in London about 1778, shows the grounds of the second Montague House, Bloomsbury, at that time an encampment. Nos. 42a and 42b are by J. Maurer, the first-named being a water-colour of St. James's Park and Buckingham House, and the second St. James's Palace and the Mall, about 1741. No. 47, the old Cheesecake House in Hyde Park, 1797, latterly sometimes called "The Mince Pie House," was demolished early in the 19th century. Nos. 48a and 48b are two more of Maurer's, one a wash drawing in Indian ink of Buckingham House, and the other a wash drawing of the Horse Guards Parade, about 1746 and 1750. No. 54 is a water colour of the fourth Drury Lane Theatre, designed by Benjamin Deane Wyatt, painted by J. M. Whitehead, about 1813. No. 57, a wash drawing by F. Nash, is Melbourne House, now The Albany, Piccadilly, designed by Sir William Chambers. Nash was the son of a builder, and was employed as a draughtsman by Sir R. Smirke, and afterwards as architectural draughtsman to the Society of Antiquaries. No. 74 is an interior of the Regency Theatre, in Tottenham Street, by R. B. Schnebbelie, which, after passing through various hands, ultimately became the Prince of Wales, under the Bancrofts. When they moved to the Haymarket, it remained vacant for years, was occupied later by the Salvation Army, and on the site is now the Scala.

Major Sir Edward Coates's generous quota includes No. 2, Austin Friars

Church from the North-West, of considerable interest in that it shows the church with its Decorated tracery and staircase turret, as they existed before the disastrous fire of 1862. No. 15 is a pen and wash drawing of St. Dunstan's-in-the-East, Wren's bold attempt at Gothic with a spire of four flying buttresses. In 1817, the body of the church having become dilapidated, it was decided to take it down and rebuild it to match the tower. The first stone of the new structure was laid on November 26 of that year, so if the date of the drawing, 1819, is correct, the work must have proceeded somewhat slowly, as the roof is off, but Wren's arches still remain. No. 17 is an old mansion in Leadenhall Street, a somewhat ornate structure, said to have been pulled down for the East India House; but, as is remarked in the catalogue, it must have been pulled down after the rebuilding of the East India House from Jupp's design, for it is shown in the large water-colour by T. Malton (77), as immediately west of that building. Nos. 19 and 20 are two water-colours, by G. Yates, one of Old London Bridge from Billingsgate, and the other of the bridge from the west. No. 22 is a water-colour on etched outline of The Monument from Fish Street Hill, unsigned and undated, but belonging perhaps to the beginning of the eighteenth century. No. 33 is the old church of St. Peter-le-Poer, on the west side of Old Broad Street. It escaped the Great Fire, but being out of repair and somewhat of an obstruction, it was pulled down in 1788 and rebuilt further back. The re-erected church, of very poor architecture, was demolished under the Union of Benefices Act, some years since. Nos. 36a and 36b are respectively a water-colour and mezzotint of a rural scene near the Turnpike at New Cross, and of the Turnpike itself. No. 37 is a careful architectural drawing, by John Carter (1748—1817), an enthusiastic admirer of Gothic architecture when few appreciated it. It is a pen drawing, tinted, of the Chantry Chapel of Henry V. in Westminster Abbey, and some curious figures, known as "The Ragged Regiment," are depicted. These effigies of royalties were exhibited at their funerals. The remains of these somewhat dilapidated personages were collected some years ago and are now in the crypt adjoining the pyx chamber. One, said to have represented Katherine of Valois, carved out of a single piece of wood, has been painted bright vermilion. Another, Anne of Denmark, Henry VIII. has a well-modelled head, probably by some Italian sculptor. One is said to be Elizabeth of York; another is said to be James I., and another Queen Mary I. Nos. 39a, 39b, and 39c, are three views by G. Shepherd of the second Royal Exchange. No. 40a is a water colour of St. Giles, Cripplegate, by G. Shepherd; and No. 40b, a pencil drawing of the same by T. H. Shepherd, who did a good deal of topographical work between 1820 and 1855, and may have been a son of George. No. 41 is a pencil drawing of the Hall of Brotherhood of Holy Trinity, Aldersgate, a chapel of a brotherhood suppressed by Edward VI., destroyed about 1790. William Capon (1757-1827), called "Pompous Billy," by Sheridan, was a scene-painter and architect of considerable knowledge. No. 49 is "Fishmongers' Hall," as rebuilt by Edward Jerman after the Great Fire, but which was demolished at the time of the rebuilding of London Bridge, the City end of which covers the site of the former hall. The original hall had been the residence of Lord Fanhope. No. 52, a water-colour by T. Rowlandson (1756-1827), is a water-colour of a lottery in the Rotunda

of the Bank of England, and No. 52, Bartholomew Fair, the fair in full progress, and showing the entrance to St. Bartholomew's Hospital, and St. Sepulchre's Church tower in the distance. No. 60 is the Middle Temple Hall, with the Temple fountain shown to the left of the spectators. No. 73 is a pen and wash drawing by R. B. Schnebbelie, of Akgate Parish School, and the watchhouse and tower of Aldgate Church. Most of the site has been absorbed by the widening of Houndsditch. No. 75 is a water-colour by F. Nash, of the Mansion House, built 1739-1753, on the site of the Stocks Market, from the designs of George Dance the elder, who was the City surveyor at the time. The top story shown, known to cockneys as "the Mare's Nest," was taken down in 1842. Other exhibits by Sir Edward Coates are: 97a, Searle's Boathouse, Stangate, Lambeth; 97b, Buildings adjoining Lambeth Church; 98a, St. Saviour's Church, Southwark; 98b, West End of ditto; 99a and 99b, two illustrations of Three Cranes Wharf, below Southwark Bridge; 100a, a wash drawing of the Chapel of Ely Place, Holborn; 100b, Ely Place, Holborn; 101, the screen formerly in St. Andrew's Chapel in the north transept of Westminster Abbey; 107, Old London Bridge and New London Bridge; and 108, a view of London from high ground beyond St. George's Fields.

The Foundling Hospital lends a view of the Hospital (No. 70) by R. Wilson, R.A.; an oil picture of St. George's Hospital, by the same artist; and an oil picture of The Charterhouse, by T. Gainsborough, R.A., an interesting example of his early work, presented by him to the hospital when he was only nineteen. No. 82 is an oil picture of Sir Richard Steele's Cottage at Hampstead, exhibited by J. Constable, R.A., at the Royal Academy in 1832. The Bank of England lends No. 93, the old Stocks Market. Mr. Philip Norman sends No. 3, Bolingbroke House, Battersea, and No. 92, a view of Westminster from Lambeth, by Scott (1710-1772). Lord Aldenham lends No. 59, a very interesting water-colour on etched outline, by T. Malton, of St. Dunstan's, in-the-West, Fleet Street.

THE FURNITURE.

The furniture is lent by the Secretary of State for India, the Carpenters', Stationers', and Clothworkers' Companies, and the Master of the Charterhouse. The pieces are all stamped with individuality, each having been made to fulfil a serious and official purpose, essentially severe in character, and thoroughly sound, both in design and workmanship. There are comparatively few, but each is well worth study, and the committee have facilitated it by the excellent arrangement of the collection. The same appreciation is due in regard to the hanging of the drawings and the preparation of the catalogue.

COMPETITIONS.

LEICESTER.—In the competition for working-class dwellings at Leicester the first premium of £70 has been won by Mr. Arthur J. Wood, A.R.I.B.A., "Prestwold," Westfield Road, Leicester; second premium of £50 by Messrs. Pick, Everard, and Keay, 5, Millstone Lane, Leicester; third premium of £30 by Messrs. Stockdale, Harrison, and Sons, 7, St. Martin's East, Leicester.

Further progress is being made with the restoration of the stonework supporting the dome of St. Paul's Cathedral. Recently the repair of the south-western pier was completed after occupying four years, and involving the insertion of nearly 3,000 feet of new Portland stone. Over twenty tons of cement were used. The strength of the pier now is said to be nearly double what it was before the execution of the repairs.

Our Illustrations.

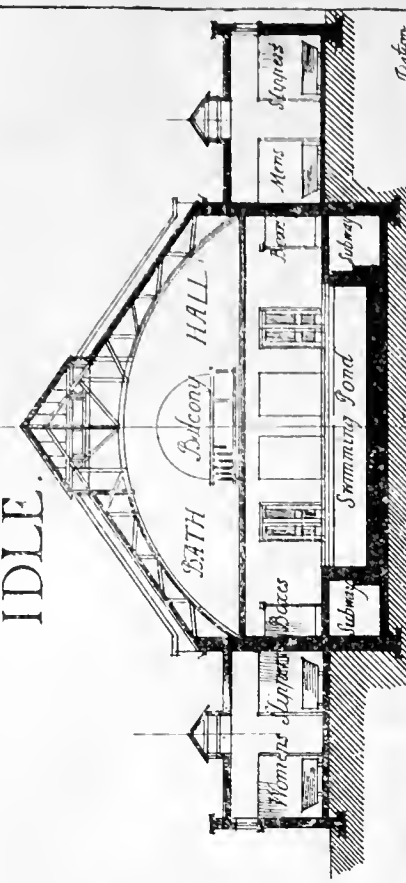
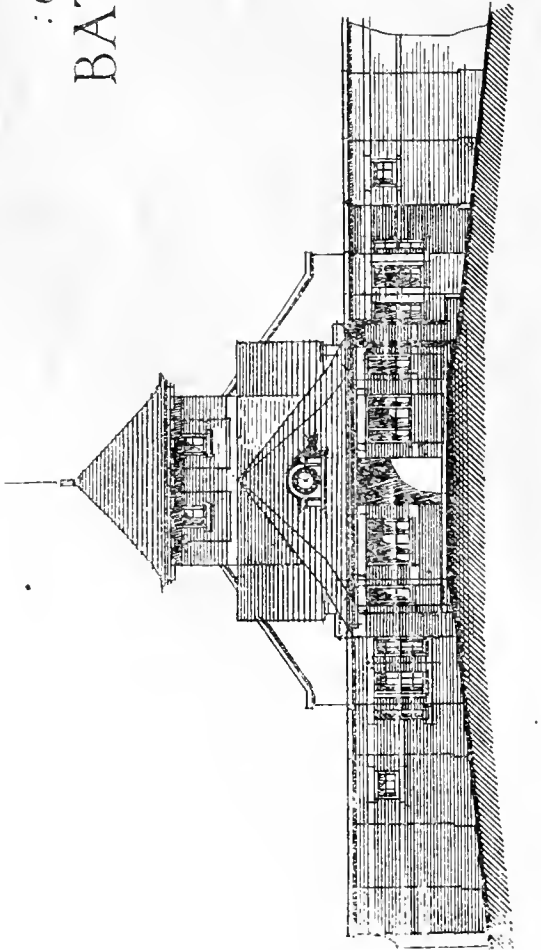
TWO BLOCKS OF COTTAGES AND HALL, FORMING ONE GROUP OF THE WHITELEY HOMES, BURHILL PARK, SURREY.

Last week we reproduced the general view of the Whiteley Hall and adjoining houses, built from the designs of Sir Aston Webb at Burhill Park, and to-day we give two more perspectives of his cottages on this estate, which together form one group of the homes erected by the Whiteley Trustees. We have now completed our illustrations of the whole series of the several groups designed by the following architects employed by the proprietors, viz.:—Sir Ernest George, R.A., and A. B. Yeates, F.R.I.B.A., Mr. Ernest Newton, A.R.A., Mr. Walter Cave, F.R.I.B.A. (the trustees' consulting architect), Mr. Mervyn Macartney, B.A., F.R.I.B.A., and Mr. Reginald Blomfield, M.A., Oxon., R.A. The list of dates on which these illustrations appeared was furnished last week in reference.

OLD FURNITURE AND TAPESTRY FROM CHILHAM CASTLE, NEAR CANTERBURY, KENT.

During the week the fine collection of decorative and historic furniture of this country mansion has been or is being sold by Messrs. Knight, Frank, and Rutley, of Hanover Square, W., on the premises. The house was erected at the beginning of the 17th century by Sir Dudley Digges, who finished it in 1616, and it ranks as a fine example of the architecture of James I. During the 19th century the place was restored, having in the meantime passed to the Colebrooks in 1752 and to the Herons and the Wildmans subsequently. The history of the property dates from the period of a Roman Castrum, and Lucius, the Brito-Roman King, is said to have had a residence at Chilham. Its owners were associated with Canterbury Cathedral. The antique carved oak Buffet illustrated to-day has a foliated frieze and cornice supported by two draped figures carrying heraldic shields, and a caryatid figure is set in the centre at the back of the recess, where there are pierced and painted leather panels. Below in front there is a pair of doors with pierced panels, and in the middle panel a carved female figure with a falcon. Two drawers occur beneath, with ring handles. The piece is 6 ft. high and 5 ft. 3 in. wide. The Italian carved walnut cassone is enriched in the front by boys and garlands of flowers, with cherub masks and swags in pilasters at ends. The supports have masks and scrolls. It is 6 ft. long. The oak half-tester bedstead has a shaped pediment to the head board above three panels representing the Baptism, Crucifixion, and the Ascension of our Lord; the pillars, with figures and lion masks and fruit, supporting the tester canopy. The big panel of the footboard is carved with a representation of the Adoration, supported by caryatid figures and cherubs' heads in bold relief. The hangings are of figured silk damask in crimson. The Brussels tapestry panel illustrated represents a classical garden scene, with a seated figure of the nymph Echo; and Narcissus seeing his reflection in the basin of a fountain is shown to the right, where a cupid stands with bow and arrow. In the background is a temple, with a river traversing the scene. Scrolls and flowers decorate the border, intermingled with parrots and

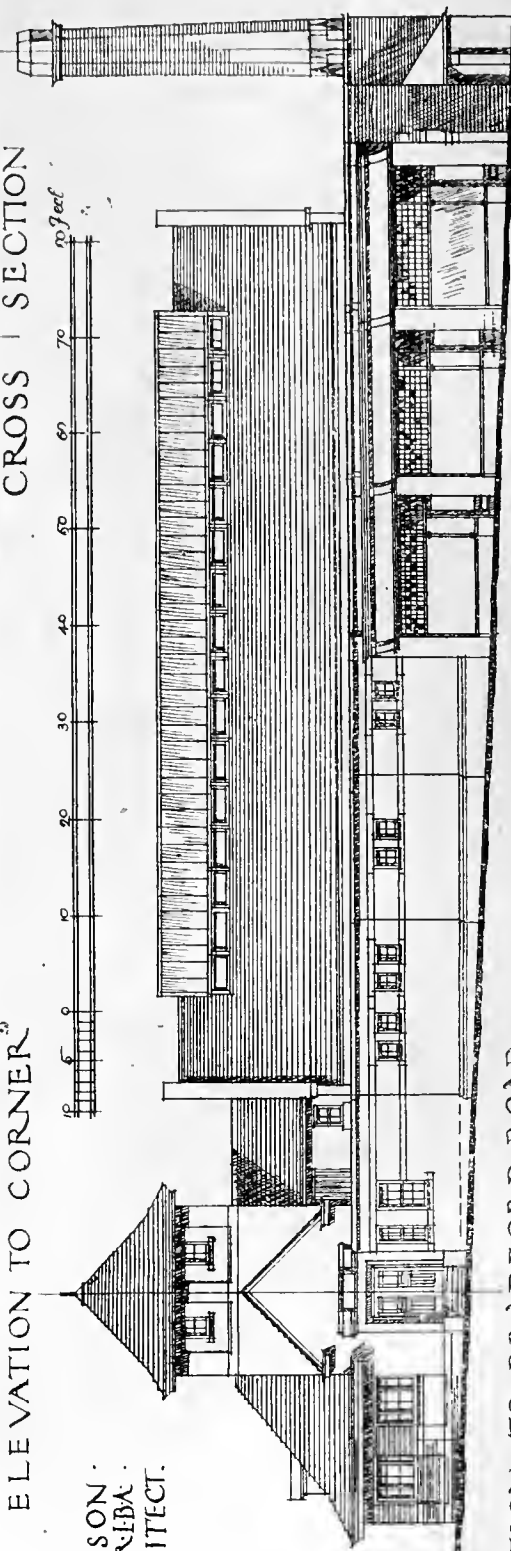
City of Bradford: Baths Committee:
**BATHS. AT FIVE LANE ENDS,
IDLE.**



ELEVATION TO CORNER

W. WILLIAMSON
LICENTIATE IN B.A.
CITY ARCHITECT.
BRADFORD.

CROSS SECTION



ELEVATION TO BRADFORD ROAD.

fruit, and crossed quivers at sides. The piece measures 10 ft. 6 in. by 9 ft. 8 in.

PUBLIC BATHS, FIVE LANE ENDS, IDLE, BRADFORD.

These baths are to be erected on a site at the angle of Highfield Road and Bradford Road, Idle. The building consists of a bath hall, with pond 75 ft. x 30 ft., the recognised standard size for championship events. Dressing-boxes are provided, together with cubicles for attendants. Separate entrances for men and women and six slipper baths and ten douche baths for each sex, together with the usual sanitary offices and separate waiting-rooms, are also provided. Accommodation is included for a district school clinic, comprising a consultation room adjoining a private room for the doctor, with the sanitary accommodation. The angle furnishes a tranway shelter at the junction of the two roads. Three lock-up shops facing Bradford Road and also facing Highfield Road. The plan shows how compactly and well these provisions have been arranged.

The buildings are faced with local wallstones and ashlar dressings. The roofs covered with Burlington blue slates, and the lantern light constructed of wood, with patent glazing. The flat roofs will be covered with reinforced concrete and asphalted. The tower provides accommodation for water storage. The internal walls of the swimming-bath hall faced with white glazed bricks with coloured bands. The pond of reinforced concrete lined with white glazed bricks, and a sub-way round the pond for the various service pipes. The floors finished with terrazzo paving. The designs have been prepared by the city architect, Mr. W. Williamson, Licentiate R.I.B.A., and the work was deferred owing to the war.

THE SECOND REPORT OF THE COMMITTEE DEALING WITH THE LAW AND PRACTICE RELATING TO THE ACQUISITION AND VALUATION OF LAND FOR PUBLIC PURPOSES.*

By EUSTACE HILLS (Barrister-at-Law).

The second report of the Committee dealing with the Law and Practice Relating to the Acquisition and Valuation of Land for Public Purposes, referred to in this paper as "the report," raises questions of far-reaching interest and importance.

It is no exaggeration to say that at the present time the principle and method of the compulsory acquisition of land are matters of immediate concern to the whole community.

A period of wide-flung reconstruction is at hand; development by the State and by bodies armed with statutory powers will increase, and ought to increase, in area and importance, and it was presumably with this knowledge and in this anticipation that the committee on this subject was appointed to prepare their report.

That the present system of valuation and assessment in the case of the proposed compulsory acquisition of property requires remedy, and can be remedied, few will deny.

If one follows the general line of criticism directed to it, the main subject of complaint is probably the excessive compensation that has sometimes been awarded; the main subject of comment, the large difference between the figures given in evidence on behalf of the owner and of the promoters.

Some of this criticism may properly be disregarded; it is not always well-informed. Criticism is a national characteristic, and, perhaps unfortunately, so much easier, and in some ways more effective, than either construction or reconstruction. A long course of experience and practice alone demonstrate the wide difference of opinion that may

sensibly exist, and may be, and often is, supported in each case by reasoned argument.

Behind this, however, it must be recognised that there is some solid ground, and it is to remedy the existing defects that the report has been presented after the examination of a large and representative body of witnesses. In discussing, in connection with the report, these defects and the proposed remedies, it is only possible for the moment to do so in a somewhat cursory and partial manner.

The report itself is both exhaustive and concise, and some of the subjects dealt with, such as injurious affection and betterment, might well of ourselves form the subject of a paper.

One cannot do more than consider some of the main points raised, and these perhaps may conveniently be grouped as—

- I.—The basis of valuation;
- II.—The assessment tribunal and the procedure before the tribunal;
- III.—The matters to be taken into consideration as relevant to the assessment.

Establish for these a principle and a method of application, and you have established a system that should carry into effect the desire of everyone, a general scheme of compensation, fair alike to owner and promoter; a scheme that will forward and not retard the development of the country and its resources.

I.

The basis of valuation forms the first subject of consideration in the report. What is it to be?

The subject of acquisition may have a large value to the owner and a comparatively small one to the promoters; may have to the promoters an almost incalculable value as the necessary link in a chain of far-reaching development, or may have to both a value equivalent to the price which would be obtained on a well-prepared and well-advertised sale by public auction.

The value to the owner is hardly satisfactory. If he were a willing seller, he might hold for his own price, but he is not. He is a seller by compulsion, and the State which authorises the compulsion owes a duty to the buyer as well as to the seller.

Such a basis has not always been to the advantage of the seller. The land in his hands may be sterilised and of little or no value, but, speaking generally, it must tend, and has in practice tended, too much in his favour.

In either case, in a valuation on this basis, the speculative element plays too large a part; it is difficult for the owner to anticipate what he will get, or for the promoters to anticipate what they will have to pay. It lacks precision where precision is, if obtainable, essential, and its application is responsible for much of the criticism of to-day.

The value to the promoters would as a basis be impossible it would fetter instead of furthering development.

The basis of market value as between a willing seller and a willing purchaser, recommended in the report, seems to meet the difficulties.

It imports a fiction, the willingness of the seller, but for the purpose of fixing a basis you may eliminate the compulsion, leaving over for consideration whether or not you give compensation for that elimination.

Market value so arrived at is in most cases comparatively easy of ascertainment, and at all events lessens the differences between the valuations. It includes potential value where the potentiality is strong enough to affect the market value, and should exclude the shadowy potentialities which have no appreciable value save in the far-seeing eyes of an enthusiastic owner.

The buyer is willing, and he pays a price on that footing; the seller is assumed to be willing, and on that footing he gets his purchase money.

Is he to be paid an additional sum for that assumption?

The percentage for compulsory purchase under the Lands Clauses Acts, whether it be 10 per cent. or more, which long custom has crystallised into a settled practice, may probably be regarded broadly as compensation for the compulsion exercised.

In the report it is recommended that allowance should be discontinued, and it pointed out that in certain cases, as known, it is not limited to 10 per cent., that this discontinuance has been advocated on more than one occasion when the question has been under discussion.

It is suggested that there are arguments of some weight in favour of its retention, if kept within proper limits.

In the majority of cases (and the establishment of a principle must disregard exceptions) there is on the owner a real pulsion for which he gets no compensation out of the market-value price.

The interests of the community demand compulsory acquisition at certain times in certain places; to these demands the interests of the owner must give way, but seems not unreasonable that he should receive for an expropriation against his something more than he would have received if willing. It is possible that this percentage has been regarded too much as a matter of practice, swelling an amount already in many cases too large, and that the essential foundation of it, as a matter of principle, has become somewhat submerged.

The market value of the land may be affected by its adaptability for a particular purpose, or, to use a somewhat hardly understood term, by its "special adaptability."

The committee recommend that the owner should not be entitled to any increased value for his land, which can only arise, or can only have arisen, by reason of the adaptability of the land for a purpose to which it could only be applied under statutory powers.

One member of the committee dissenting from this view on the ground that whilst it is most anxious that owners should not be given unreasonable compensation, he is strongly of opinion that the paragraph containing the above recommendation prevents an owner receiving compensation which is perfectly reasonable he should receive, that if there is competition in the market for the land, whether it be for public or private purposes, that competition must, as a matter of fairness, be taken into consideration in assessing compensation payable to an owner for compulsory acquisition.

Under the Lands Clauses Acts the special adaptability of the land for a particular purpose may be taken into consideration in assessing the price even where that purpose is the purpose for which the land is taken, but the assessment of value to the owner presents considerations which differ from the assessment of the market value as between a willing seller and a willing buyer.

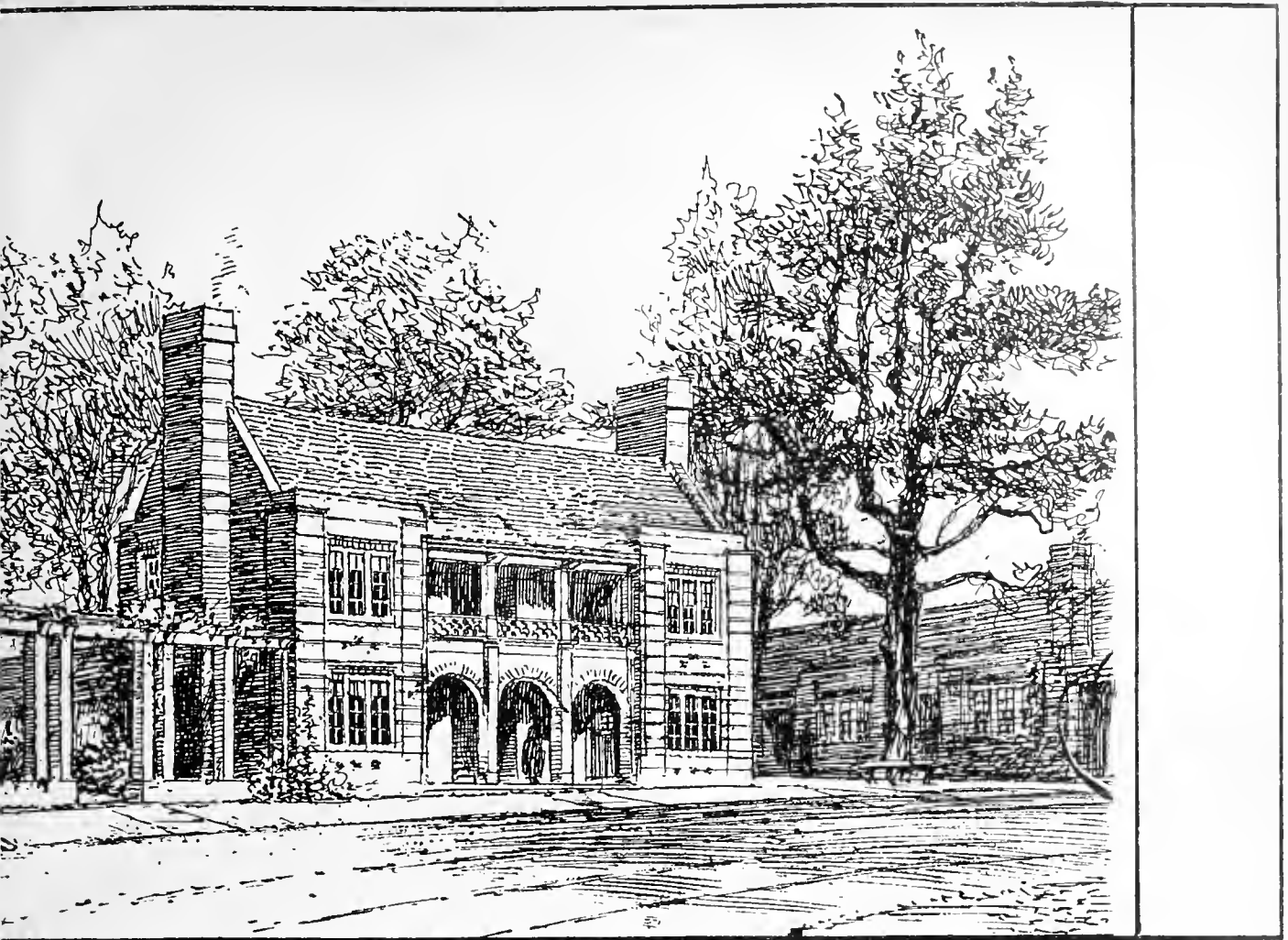
If compulsion is for the moment eliminated, does not the owner of a site particularly suitable for a reservoir, and in a large town, whilst a willing seller, expect a larger price because of that suitability, and would not a body acting under statutory powers, and willing to buy without exercising their powers, be ready to pay a larger price because of that suitability, notwithstanding the fact that they know, and the owner knows, that the land cannot be applied to that purpose except under statutory powers, and would not they be so willing apart from any consideration as to what they would have to pay, if they did exercise their statutory powers? In other words, is it to say not only that the market value is affected, but that the market value as defined is affected? The possibility of competition from other statutory bodies is somewhat fetched, but the possibility does exist, though it might be lessened or put an end to the powers proposed to be given to the sanctioning authority. It is suggested that there is, or may be, an element of market value, as defined, in a special adaptability of land for a purpose to which it could only be applied under statutory powers, whilst it is anticipated that the extravagant lengths which the doctrine of "special adaptability" has been carried will be wholesomely tailed by the necessity of limiting compensation for that adaptability, apart from the special point under consideration to cases where it is shown that it appreciably affects the market value of the land.

(Continued on page 50.)

* Read at the ordinary general meeting of the Surveyors' Institution, held on Monday, January 13, 1919.



TWO BLOCKS OF COTTAGES AND HALL FORMING ONE GI
Sir ASTON WEBB, K.C.V.O.,



PLAN OF THE WHITELEY HOMES, BURHILL PARK, SURREY.
J. B., R.A., F.S.A., Architect.

(Continued from page 43.)

The two exceptions to the basis of market value suggested in the report seem to be necessary corollaries to this rule:—

(1) No enhancement of market value which arises from the use of premises contrary to sanitary or other laws.

(2) Compensation on the basis of equivalent re-instatement where re-instatement is *bona fide* intended in cases such as a church, chapel, or cemetery, where market value, as defined, would afford an unjustly low measure of compensation.

Of the four methods provided by the Lands Clauses Acts in cases of disputed compensation, justices, surveyor appointed by justices, arbitration, and jury, the most serious question that arises for discussion is whether an arbitrator or a jury constitutes the better tribunal.

The choice is presented of a tribunal that has expert knowledge of the subject-matter, and a tribunal that, failing that knowledge, has to depend for instruction upon the witnesses called before it.

If the tribunal may be a jury, there seems at the present day no ground for giving the choice of that tribunal to one of the disputants alone.

Theoretically the only advantage in a jury is that of necessity they can bring no preconceived ideas to the matters that fall for their decision.

Theoretically there would be a saving of time and expense in assessment by an expert tribunal.

In practice it has generally been found that, whilst a jury give close attention to the problem before them, their want of knowledge tends, through no fault of their own, to loss of time and uncertainty of result.

The speculative element again plays too large a part, and speculation is to be avoided in the interests of the parties, and of the community at large.

The problems of assessment of compensation are necessarily complex. The differences in valuation are more often differences of principle than merely of opinion, and it is not easy for an inexpert tribunal to decide on the right principle when two mutually destructive ones are urged before it with equal vigour.

The committee who present the report are unanimous in recommending the abolition of a jury as an assessment tribunal, and their recommendation appears to be well founded. The strain of jury service presses more heavily than it did, and a relief of that strain would be welcomed.

If the assessment is to be by arbitration, is the tribunal to consist of one or more than one, and how is it to be chosen?

Is it to be of a permanent and semi-judicial character, or is it to be selected from a body of independent arbitrators?

Under the Lands Clauses Acts, as is well known, the decision, if by arbitration, is by two arbitrators and an umpire unless both parties concur in the appointment of a single arbitrator.

There is some difficulty in appreciating the advantage of a tribunal of three.

Experience shows that the arbitrators but seldom agree, and a tribunal of three increases the length, and may increase the expense of the proceedings.

If it be accepted that the ultimate decision is to rest with a man of experience in the solution of such problems as are laid before him, there seems no adequate reason why he alone should not form the tribunal.

In litigation judgments of first instance are almost invariably given by a single judge, and such exceptions as exist are called for by the necessity of expert assistance, a necessity in the present case advisedly avoided.

The selection of the tribunal opens another interesting field of consideration.

If the parties agree, by all means let them choose their own tribunal, but if they do not agree, the tribunal could be selected, as pointed out in the report, either out of a panel of independent arbitrators, or out of a permanent body constituted for that purpose, somewhat on the line of the Railway and Canal Commission. The panel would be formed out of men of high professional stand-

ing and reputation, the members of it would be suitably remunerated, and would not, whilst on the panel, give evidence in cases of disputed compensation.

There would be no need for the members of the panel to retire from private practice.

On the whole, it is probable that a panel of independent arbitrators would form the best area of selection for the tribunal.

A wider range of choice would be available for particular cases, and it is conceived that the retention by its members of private practice, within the proposed limits, would ensure that they kept in touch with changes in conditions affecting those questions on which their judgment was required, conditions which have changed in the past and will change in the future.

In putting forward this view, it is only right that careful consideration should be given to a memorandum by one member of the committee who has not signed the report, on the ground, to use his own words, that he was satisfied that the greater part of the difficulties experienced in the past had arisen from the uncertainty as to the price which might be exacted for the land, and that this uncertainty arose, in his opinion, from the fact that the gentlemen appointed to make the valuations were those who in private practice depended upon the land-owning class for their business, and who, quite unintentionally no doubt, placed exorbitant values on the land, so exorbitant, indeed, as to deter other local authorities from going into arbitration, and that, as the recommendation in the report stood, there was nothing to prevent the partner of the arbitrator advising or acting for one of the parties concerned.

The gist of this criticism is that there is, or may be, an unconscious bias towards high valuations, and that it is undesirable that the partner of, or one professionally associated with, an arbitrator occupying a quasi-judicial position should give evidence before that arbitrator.

Experience does not support this view. That excessive valuations have been given at times is undoubted, and has already been referred to, but this excess is attributable rather to what one may call the statutory uncertainty that has existed as to the basis of valuation than to any preconception on the part of the tribunal. The tribunal acts, as other judicial and quasi-judicial bodies, on the evidence laid before it, and on that alone.

The question depends on the balance of benefit accruing to the disputants concerned and to the community.

The system of referees appointed for the purposes of the Finance Act, 1910, is believed to have worked well, and if, as recommended in the report, existing official valuations affecting the property in dispute may be obtained from the Inland Revenue Valuation Department, and may be admissible in evidence, the checking of these valuations on the foundation laid by examination and cross-examination of the Inland Revenue valuer would be more efficiently performed by one who has not lost touch with private practice. The disputant of to-day demands as of right a technical and expert knowledge on the part of the tribunal from which he seeks a decision, and it is believed that he would invoke with more readiness, and more confidence, an arbitrator selected on the lines suggested than a permanent official, however high his qualifications on appointment.

In practice the evidence of a partner would not receive greater weight than that of another, perhaps by analogy with similar cases rather less, but if it were considered that there really was an element of danger, the restrictions as to a member of the panel might include his partners.

The procedure before the tribunal may be more shortly touched upon.

The recommendation that full particulars of claim should be served on the promoters, stating the exact nature of the interest in respect of which compensation is claimed, with details of the claim under separate heads, showing in each case how the amount is calculated, and that the promoters should be given power to withdraw their notice to treat at any time within two months after the delivery of the claim, appear to be amendments necessary and just.

An unfettered jurisdiction as to costs, also recommended, is perhaps the strongest shield against unnecessary expense and the strongest inducement to a settlement by agreement.

As regards the right of appeal, the position at present is rather anomalous.

On questions of fact the tribunal may, and should, be the final judge; that is one of the main advantages in constituting an expert tribunal.

On questions of law there must be opportunity of appeal.

At present there is, as is well known, a right to obtain the opinion of the Court, by special case, on any question of law arising in the course of the reference, and there is the right, on request by either party, to have the award stated in the form of a special case.

In the former case, as the jurisdiction of the court is consultative, no appeal lies from its decision; in the latter case it does. It is recommended in the report that this procedure should be amended by an enactment that if a question of law is raised it should be stated in the award, whether interim or final, in the form of a special case, so that the decision of the court of first instance should in either case be subject to appeal.

There seems to be no valid ground for the distinction between the two cases at present existing. As soon as a question of law is raised and the court is invoked, it is, in fact, the judicial jurisdiction that is invoked, and it is not advisable that a party in the one case should be in a worse position than in the other. The recommendation would get rid of this anomaly and would place the parties in each case on an equal footing.

Another possible solution might be the abolition of the right to a special case during the course of the reference. Let the reference before the arbitrator be heard and determined and the witnesses released. If any question of law is raised, let the award, at the request of either party, be stated in the form of a special case.

This would avoid delay, and would dispose of the evidence, and would leave to the parties their unrestricted right of appeal on all questions of law.

Want of publicity in proceedings that, without being judicial, are quasi-judicial, is at the present day regarded with some jealousy, and arbitrations might be public, with a power of exclusion, at the discretion of the tribunal.

The remaining recommendations, viz. :—

- (a) The power of the tribunal to call expert witnesses, with the right to the parties of examination and cross-examination;
- (b) The power of the tribunal to appoint an accountant to examine books and accounts;
- (c) That taxation returns in the possession of the Inland Revenue shall be produced on the request of the tribunal.

will all tend to the ascertainment of the true value of the subject of arbitration, and will facilitate just awards.

The question whether, as in Scotland, individual instances of sales and dealings in other properties may be given in evidence-in-chief on the assessment of compensation for the particular property raises a question which in practice is of considerable interest.

Under the rules of evidence such instances are not admissible, and in England have not been admitted, on the ground that the necessary facts on which to check the evidence may not be in the possession of the counsel representing the parties, and that the admission of such evidence would undoubtedly lengthen the hearing of the case, and in effect would involve a trial of the instances adduced.

That the price obtained on the sale of a contiguous property of like character, shortly before the hearing of the arbitration, would be of material assistance to the tribunal in arriving at a decision is undoubted.

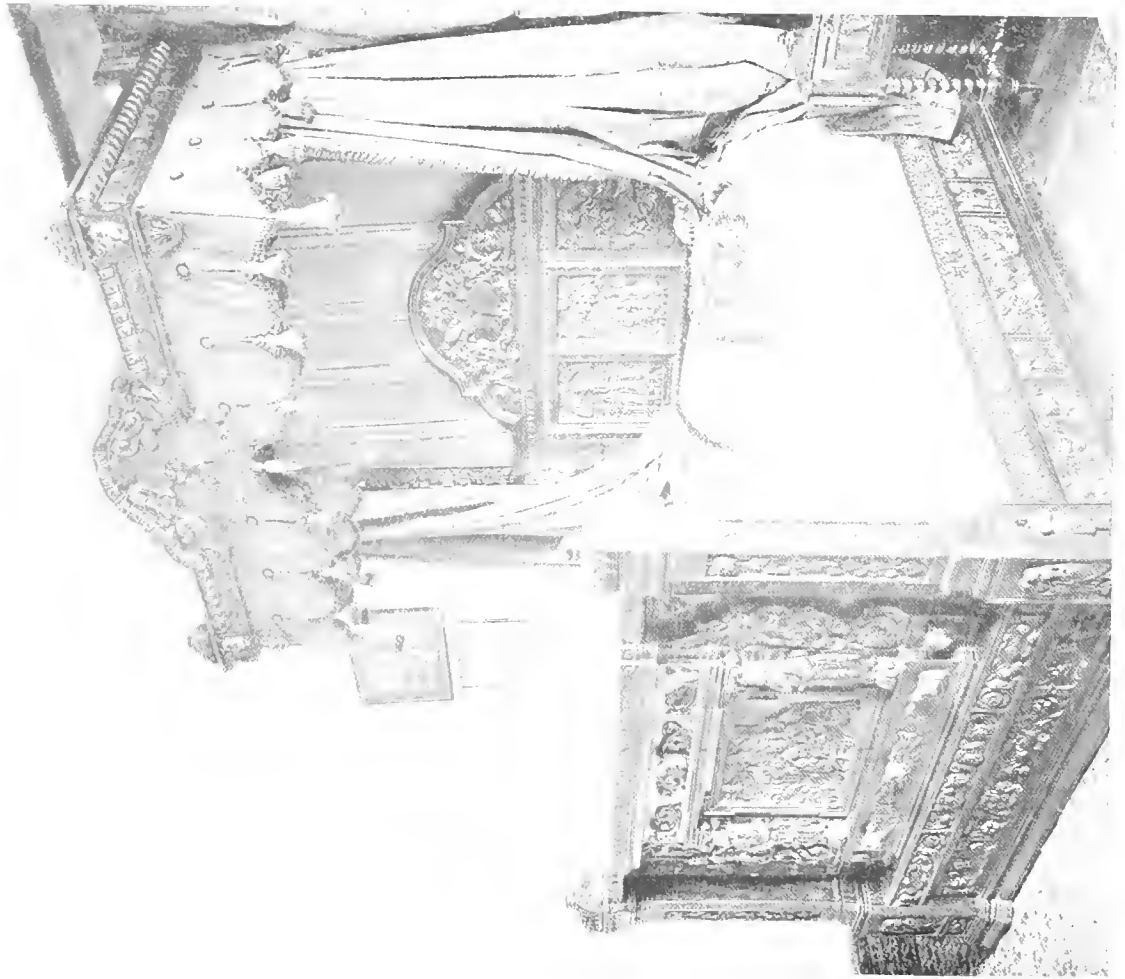
The materiality of it may be expressed as being a fact on which the witness who is giving evidence bases his opinion as to the value of the particular property.

Rules of evidence which have become crystallised by a long course of practice have regard to proximity as well as relevance.

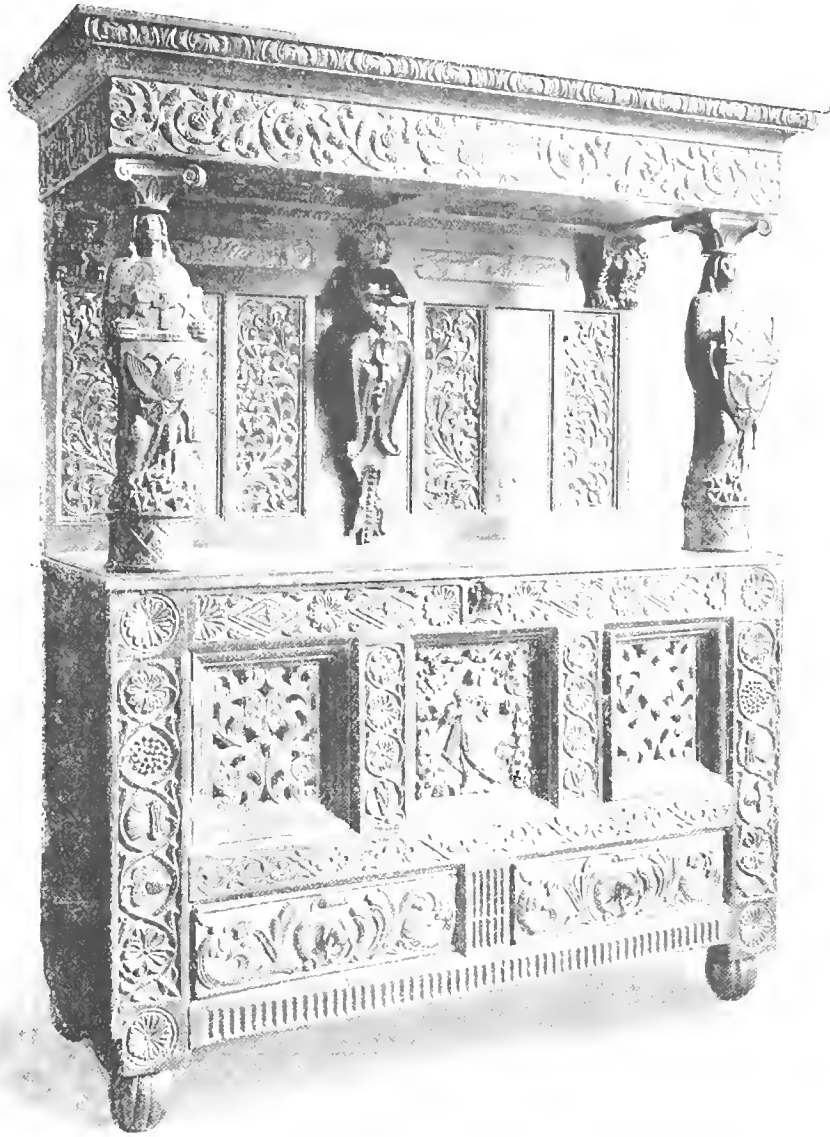




BRUSSELS TAPESTRY PANEL: ECHO AND NARCISSE.



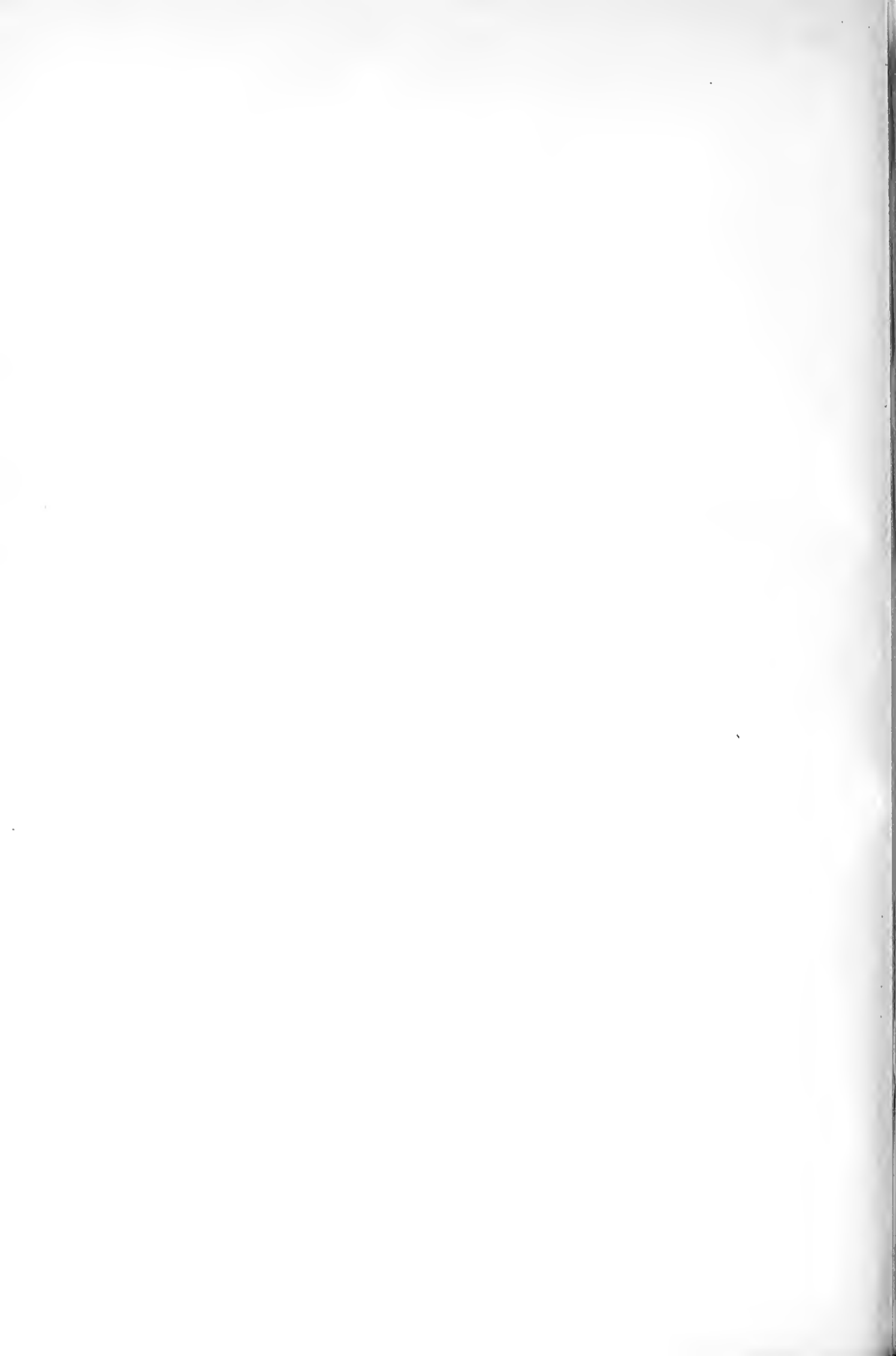
CARLISLE HOUSE: FIREPLACE MANTEL AND SILE HANGINGS.



ANTIQUE CARVED OAK BUFFET.



ITALIAN CARVED WALNUT CASSONI.

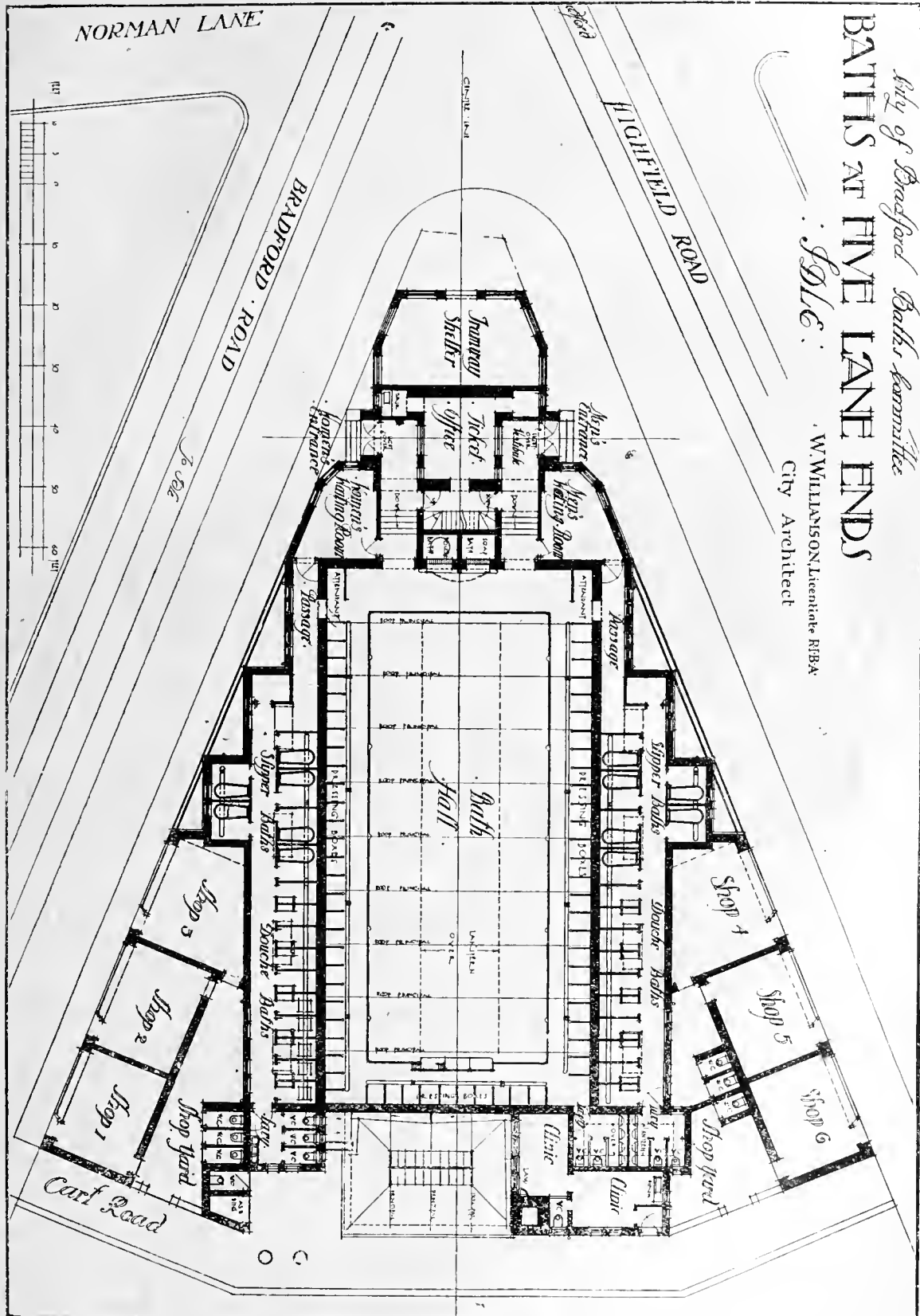


BATHS AT FIVE LANE ENDS

City of Bradford Baths Committee

J. GLE.

W. WILLIAMSON, Licentiate RIBA
City Architect



Facts which cannot be dismissed as irrelevant are sometimes excluded on the ground that they do not approach sufficiently close to the particular subject of inquiry.

The difference in opinion that has existed on the point has probably been accentuated in the case of arbitrations before an expert tribunal.

The weight, for instance, given by a jury to the opinion of a witness based on such instances would be infinitely greater than the weight given to that opinion based only on general qualifications and experience. The weight given by a jury might be too great, and before such a tribunal the danger of admission would outweigh the possible advantage.

Assuming that the recommendations of the committee as to the constitution of the tribunal are adopted, the problem is an easier one. The tribunal itself is expert, and is capable of weighing the evidence, and of discarding it where it ought to be discarded.

The committee, whilst not making a recommendation on the subject, record their opinion that the sanctioning authority should in framing their rules as to the admission of evidence by the tribunal provide that, subject to suitable limitations, the practice of allowing instances to be given in evidence-in-chief should be followed.

Such rules would not be easy to frame, and it would probably result in the matter being left to the discretion of the tribunal in each case where such instances were tendered in evidence.

With an expert tribunal it is considered that greater justice would be done by the possibility of the admission of such instances than by the present impossibility.

Whether such instances would or would not be admitted could be gauged with a certain amount of accuracy before the hearing, by witnesses part of whose function it is to make themselves acquainted with similar instances to the one under inquiry, and the somewhat anomalous practice by which instances can only be brought out in cross-examination, and so are not brought out if it is anticipated that they will support the evidential value of the figures of the witness in the box, would be put an end to, or diminished.

Of the matters to be taken into consideration as relevant to the assessment none stand out more conspicuously than the questions of injurious affection and betterment, or recoupment as an alternative to betterment.

The right of an owner to be compensated for injurious affection has in certain cases long been recognised, but there has been no general recognition of the right, and limitations based on the material sections of the Lands Clauses Acts have been imposed which, at the present time, at all events, it is not easy to support either on principle or in practice.

Adopting the classification in the report, injurious affection may be placed under two heads:—

- (1) Damage to an owner whose land is taken, arising directly from the taking, i.e., by severance or disturbance of occupation.
- (2) Damage arising from the construction or user of the works which may result to an owner, none of whose land is taken, as well as to an owner, some of whose land is taken.

The first head offers but little scope for discussion. Such an owner may properly recover compensation on the grounds indicated, as for damage directly caused by, and flowing from, the compulsory acquisition of his land.

Where there is severance the owner is protected by compensation for damage suffered, and the provisions of Section 92 of the Act of 1845 are unnecessarily stringent against the promoters. In practice those provisions have sometimes been used as a cloak for exorbitant demands, and have sometimes resulted in an unremunerative addition to the cost of the undertaking.

An unrestricted power might well be given to promoters, as recommended by the committee, to take part only of a property, though it is suggested that the further recommendation that they should have an option

to take the whole in cases where, as the result of the owner's claim for injurious affection, they find it cheaper to do so, is not necessary. In the case under consideration part only is required for the purpose of the undertaking and it is conceived that the promoters are sufficiently protected by an unrestricted power to take that part.

The second head raises questions of greater difficulty and perhaps of greater interest.

The outstanding distinction under the Lands Clauses Acts between the position of an owner whose land is taken, and that of an owner none of whose land is taken, is certainly not logical, and its application has given rise to artificial rules and refinements which are not to the advantage of the community and do not make for justice.

An owner none of whose land is taken may suffer by the user of the authorised works damage as serious and as direct as an owner part of whose land is taken.

To take two of the well-known instances as illustrations, there is no logical reason why an owner none of whose land is taken should not be entitled to compensation for user when he is for construction, or why such an owner, unlike an owner part of whose land is taken, should only be entitled to compensation for a grave and serious injury to his land, if the damage caused by the promoters would, without statutory powers, have been actionable.

The moment seems opportune to sweep away these artificial distinctions, to establish a principle on which compensation may be granted, based, not on the accidental position of the particular owner, but on the causation by the promoters and the result to the owner of direct and appreciable damage. The application of the principle must be limited and defined, and the recommendations of the committee on this head are:—

"(a) That the sanctioning authority should exercise a discretion allowing compensation for direct and substantial depreciation of market value if they are of opinion that, in the circumstances, it is reasonable and expedient to do so.

"(b) That the properties in respect of which a claim for such injurious affection may be made should be inserted in a schedule to be settled by the sanctioning authority at the time of sanctioning the scheme, and that all such claims should be made within a limited time to be similarly settled.

"(c) That the assessment should not be postponed, but should take place once and for all time upon the claim being made.

"(d) That claims such as those arising under the Waterworks Clauses Acts for damage by maintenance or user should be dealt with by the tribunal as and when they arise.

"(e) That damage caused by negligence or other unauthorised user of the works should, as at present, be the subject not of a claim for compensation but of an action at law."

The first of these recommendations contains the principle, and the others the limits in the application of it.

The limits are reasonable, and if the first recommendation were put on broader grounds than discretion, and stated as a principle, it would in effect establish that any owner is entitled to recover compensation for direct and substantial depreciation of the market value of his property, by construction or user of the works, if that property is within the schedule. By this means it is conceived that justice would be done if the question is considered in conjunction with that of betterment.

(To be continued.)

It was resolved at a public meeting last week at North Walsham to build a cottage hospital as a war memorial, and several donations of from £50 to £500 each were promised.

The Chief Secretary for Ireland has consented to receive a deputation from the joint committee of the Royal Institute of the Architects of Ireland and the Dublin Industrial Association, on the subject of the future supply of building materials, etc.

Our Office Table.

Delivering his presidential address to the Birmingham Rotary Club last week, Mr. Arthur Harrison said that in none of the arts was a correct judgment on the part of the public more necessary than in that of architecture. The neglect of architecture meant that there was no public opinion behind architects, no education of the public mind to the perception of what was good or bad. We could escape from bad pictures, we need not read rapid books, but a bad building might make a whole city foolish and laughable, or it might ruin a whole countryside of rare and exquisite beauty. The man in the street might not be capable of analysing and appreciating the hidden mystery of beauty in design, but he would be influenced by it, though he might not know or admit it. If the architecture of the city was not what it should be, they must remember that it reflected on the character of the city as a whole. A beautiful city was a great asset, but how seldom was the truth realised? In the late Victorian period art was at its lowest depth. He could remember much that was architecturally beautiful and distinguished in some old Georgian work when Birmingham was a town, but we had destroyed it. Yet Birmingham was no worse than other large towns where commercialism was unrestricted.

The U.S.A. Bureau of Standards has published its final report on an investigation of the strength of large brick piers, which was conducted in the Pittsburgh Laboratory of the Bureau of Standards in co-operation with the National Brick Manufacturers' Association. Tests were made on 46 piers 30 inches by 30 inches by 10 feet high, and four supplementary piers of the same cross sectional dimensions by 5 feet high. Transverse, compression, and absorption tests were made on each lot of bricks used. The bricks used were representative of four districts east of Mississippi River, two or more grades of brick being obtained from each district. Three kinds of mortar were used in the beginning and three grades of bond and workmanship employed throughout the investigation. This report, under title, "The Strength of Brick Piers," is ready for distribution and those interested may obtain a copy by addressing a request to the Bureau.

The oldest canal in the world, dating back nearly 2,500 years, and also the longest canal, measuring in the main section nearly one thousand miles, is that extending from Hanchow, south of Shanghai, China, to Peking. Most of this canal has been filled with mud by overflows of the Yellow River, but the southern portion of it still constitutes a very busy waterway. The canal is now to be rebuilt and improved. The project is too vast to be done at a single operation and the funds are not at hand. At present about \$6,000,000 is available and this sum will be used for the improvement of a section about a hundred miles in length, leaving to a later date, when funds can be accumulated, the reconstruction of other sections. The work is to be undertaken by American engineers.

The British Reinforced Concrete Company, Limited, of 1, Dickenson Street, Manchester, have issued a most useful series of tables showing the various sizes of their fabric to be used for various classes of floor over various spaces, with types of wire, safe-working stresses, and desirable types of span. They are mounted on a convenient stretcher, from which, hung on the office wall, instant reference can be made, which will save much time, as the required standard sizes can be selected at a glance, and as these are all kept in stock for immediate supply promptness of delivery is advantageously facilitated.

A return to an Order of the House of Commons made by the Local Government Board on August 5, 1914, the day after war was declared, showing the land and housing activities of every county council in England and Wales, with the exception of the London County Council has now been published [424]. In view of the housing problems of the moment, and of the fact that building has

been suspended during the war, the figures given are of interest. From January 1, 1906, to August 4, 1914, the county councils of England and Wales had provided 5,864 houses, of which 1,744 had been supplied out of loan moneys. These houses were occupied as follows:—

Smallholders	2,421
Police	2,409
Council employees	843
Other persons	191
Total	5,864

Council employees included 448 teachers and 337 asylum officers. The return also shows the acreage of land owned in fee simple and on leasehold by the county councils, and the purposes for which it was used or acquired. The total area, approximately, of such land was 220,071 acres, of which 160,908 acres was freehold, while 210,825 acres was agricultural land. Of the total area 194,537 acres were used for small holdings, 13,476 acres for lunatic asylums, and 7,824 acres for education.

A big town-planning scheme is engaging the attention of a special committee of the Manchester Corporation. For many months a sub-committee of the Town-planning Special Committee has been at work formulating a plan for the betterment of the southern side of the city, embracing Withington, Didsbury, West Didsbury, Fallowfield, Chorlton-cum-Hardy, Levenshulme, Openshaw, Clayton, and Gorton. Last week at the Manchester Town Hall the General Committee spent over two hours in examining the scheme piece by piece. Altogether the area mapped for improvement is 5,290 acres. It is proposed to make new roads and widen old ones, and to lay out the land for building purposes so as to help relieve the house shortage from which the city is suffering. Many building and constructional schemes are involved, and sites are provided for allotments, playing fields, schools, and hospitals. The new roads are to vary in width from 42 ft. to 100 ft., and one of the larger is to run from Slade Lane to Cheadle. The committee will meet weekly until the scheme has been examined in all its details.

The German Cement Association informs the *Munchner Neueste Nachrichten* that while the object of the competent authorities during the war was to confine private building activities within the narrowest possible limits, the opposite policy is now being adopted. Unfortunately, however, the production of cement is dependent upon coal production and transport facilities, and under present conditions has gigantic difficulties to contend with. Transport facilities have been reduced to a minimum by the demobilisation and the conditions of the armistice. Definite official utterances show that the coal supply will certainly not become better, and will very likely become worse in the near future. Meanwhile, the cement works are required to reinstate all their former workmen when discharged from the army. The productive capacity of the German cement industry amounts to about ten million tons per annum. The quantities of cement despatched in the last years of peace amounted to 7.5 million tons per annum; the quantity despatched in 1917 was 3.14 million tons; in 1918 so far only 1.6 million tons have been despatched, and by the end of the year this figure will have risen only to 1.8-1.9 million tons.

At a meeting of the Academicians held in Edinburgh last week Sir James Guthrie's official letter of resignation was read, and it was agreed to hold a meeting on Friday next, 17th inst., to elect a successor. His early life was spent in London, but at eleven years of age his father went to Glasgow, and the future President was educated there in the Glasgow High School and University, of which he is a graduate. He studied for the Bar, but his strong bent for painting showed itself, and in 1879 he began to devote himself seriously to equipping himself for an artistic career, studying for a time in London. Study in Paris followed, and on his return to Scotland he made a distinct impression by his picture "The Highland Funeral," exhibited in the Royal Academy in 1882. "To

Pastures New"—a girl driving before her a flock of geese—and other pictures of this period are familiar through frequent reproduction. Latterly Sir James Guthrie has devoted himself to portrait painting, and examples of his portraiture have for many years been a conspicuous feature of the Scottish exhibitions. He was elected an associate of the Royal Scottish Academy in 1881, and a full member in 1882, and ten years later he was unanimously elected President. A Knighthood was conferred upon him in 1903.

Mr. Sheriff Banister Fletcher, F.R.I.B.A., C.C., presided in the Guildhall Art Gallery on Friday at the annual meeting of the Royal Drawing Society. Mrs. Banister Fletcher distributed to teachers three gold stars, awarded by the Society, and designed by Princess Louise, Duchess of Argyll. In acknowledging a vote of thanks, the Sheriff said that to him drawing was everything, because the first thing an architect had to learn was to draw, and unless he could draw fairly well he could not commit to paper the thoughts which were eventually to be translated into brick and stone. Architects drew for many reasons, and primarily to study the works of the past. By that means they memorised details of past art, passed those ideas through the crucible of their own imagination, and then produced something modern which they hoped was beautiful. The proper way of tuition was to encourage people to draw anything, and not so much to instruct them how to draw. If one encouraged people to draw they would soon themselves learn to draw. One should get the young to draw from memory, because that was what increased their powers of observation, and in that way they took a considerably greater interest in life.

The Board of Education will not hold a national competition in 1919. The Board will hold examinations in drawing, in pictorial design, and in industrial design. Examinations in painting and in modelling may also be held, provided that the Board are satisfied in due course that a substantial number of candidates definitely desire to take these examinations. The regulations for examinations in art, 1916, will continue in force for 1919, so far as they apply. The interim regulations for scholarships, exhibitions, free studentships, and other awards in art applicable to the year 1914 will also continue in force as regards exhibitions, scholarships and free studentships, subject to the possibility that the number of royal exhibitions, national scholarships, free studentships and local scholarships and of new local exhibitions in art to be aided by the Board may have to be restricted.

A meeting of past and present members of the Artists Rifles will be held at headquarters, Duke Road, Euston Road, W.C.1, on January 22, at 5.30 p.m., to consider a proposal for an Artists' War Memorial, and of appointing a committee to obtain the necessary funds. It is hoped that all who are able will do their best to attend. The chair will be taken by Colonel Robert W. Edis, C.B., V.D., hon. colonel of the regiment.

The district coroner (Mr. T. R. Dawbarn) conducted an inquest on Saturday week on the body of W. H. H. Davis, a well-known Wisbech architect. Evidence showed that deceased, who had been medically attended for mental depression, went out on the afternoon of the 3rd ult., and was never seen again alive. His body was afterwards recovered from the river Nene. The jury returned a verdict that deceased had died from asphyxia by drowning, and that this was the result of deceased's own act while of unsound mind.

If a cottage provided by the employer is defective in accommodation, sanitation, or water supply, or in want of repair, a worker in agriculture may ask the District Wages Committee for his area to fix the sum which may be deducted from his wages on account of the provision of the cottage at less than the maximum sum allowable for such purpose. The maximum sum which may be deducted from the minimum wage in respect of a cottage free from such defects has been fixed at 3s. for all counties in England and Wales except Northamptonshire, Herefordshire, Mid Bucks, and part of Somerset, where the sum is 2s. 6d., and North Bucks, where it is 2s.

CHIPS.

The death is announced of Mr. W. W. Walker, surveyor to the Alford Urban District Council.

Mr. Davey has been appointed by the Thetford Rural District Council as surveyor for the eastern district.

Molesley has decided to erect a monument and to acquire or erect a hall as memorials to those who have fallen in the war.

It is stated that Miss Violet Melnotte has secured an option on a site near the Duke of York's, her present theatre in St. Martin's Lane.

Dr. Ocher, of Geneva, claims to have found a means of converting nitric vapour into an innocuous but powerful disinfectant, which he has called "Azogone."

Plans for the side chapel at the parish church at Penistone have been prepared by Sir Charles Nicholson, of London, at a cost, with other improvements, of £1,000.

The Training College Sub-Committee of the Herefordshire Education Committee has instructed the county surveyor to prepare plans for extensions at the Training College.

Representatives of the Swedish timber industry have reached England to open negotiations for the sale of timber. They propose primarily to offer 250,000 standards for sale.

Messrs. Moore and Crabtree, architects, York Chambers, Cavendish Street, Keighley, are architects for an extensive factory reconstruction scheme to be carried out in that town.

The foundation-stone for the first block of soldiers' and sailors' homes in Ghelunck Park, Worcester, will be laid on January 15. Of the £10,000 required, £7,000 has already been subscribed.

At the meeting of the Royal Institute of British Architects on Monday, January 20, 1919, at 5.30 p.m., Mr. M. H. Baillie-Scott will read a paper on "The Making Habitable of Old Dwellings in Town and Country."

The directors of the London County, Westminster, and Parr's Bank, Ltd., have declared a dividend of 10 per cent. for the past half-year (less income-tax), making a total distribution of 20 per cent. for the year 1918.

The city surveyor of Carlisle, Mr. H. C. Marks, has received instructions to prepare a scheme for the provision of 600 houses for the working classes as early as possible, and to advertise for offers of suitable land to erect them upon.

The Council of Scientific and Industrial Research has submitted to the Dominion Cabinet Reconstruction and Development Committee a proposal to build a central national laboratory at Ottawa at an estimated cost of £100,000.

Mr. J. B. Joel, of the firm of Barnato Brothers, is to erect a theatre on the site of Meux's brewery at the corner of Tottenham Court Road and Oxford Street, on the American plan, including a winter garden. The site covers nearly two and a-half acres.

The death is announced of Mr. Alexander Gill, the largest owner of house property in the Isle of Man. He took a prominent part in the development of Douglas by building several great company-houses on the sea front and in Onchan, an important suburb of Douglas.

A movement is on foot in Cheshire for the amalgamation of Whalley Bridge with other parishes to reduce the number of officials in the district. These consist of five surveyors, five medical officers, three sanitary inspectors, six rate collectors, two relieving officers, two school officers, three fee controllers, and three fish overseers.

An exhibition of maps and globes illustrating the age of discovery opened at University College, Gower Street, yesterday. It belongs to Colonel Dudley Mills, R.E., who has lent and arranged it. Admission is free. One of the most striking exhibits is a road map of the Roman Empire 20 ft. long. The date and authorship are unknown.

Mr. F. H. Broadhead, of Lincoln, who has been appointed to carry out the borough of Relford housing scheme of 150 houses, has had twenty years' experience as an architect and surveyor, including twelve years entirely in connection with housing and town-planning. He assisted several firms in designing and carrying out large schemes at Bourneville, Letchworth, Hampstead (garden suburb), and elsewhere, and he designed and carried out in private practice the houses of the Bristol garden suburb, Shirhampton, and has designed two schemes now about to be carried out for the Shepshed Urban Council.

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TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender: it adds to the value of the information.

BEDFORD.—For erection of a wall between the stone yard and the proposed clunker tip near Cauldwell Road, for the town council:—

Laughton, W. £131 2 7
(Recommended for acceptance.)

HEYWOOD.—For improved water service at Regent Street Council School, for the Education Committee:—

Booth, C. (accepted) £62 0 0

NORTHAMPTON.—For improvement of housewifery centre, Spring Lane, for the Corporation:—

Adkins, W. J., and Co. £107 0 0
(Accepted.)

OKWORTH (KEIGHLEY).—For scavenging of Springwells, Holme House, Goose Eye, and Laycock district, for the Okworth Urban District Council:—

Shackleton, E., Laycock, Keighley £60 0 0

Green, J., Todley Farm, Laycock, Keighley 60 0 0

Gill, J., True Well Hole Farm, Okworth* 52 0 0
(*Accepted.)

TO ARMS!

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REGIMENTAL ORDERS, No. 3, by LIEUT.-COL. C. B. CLAY, V.D., Commanding.

MONDAY, JAN. 20, to SATURDAY, JAN. 25.—Drills as usual.

C. HIGGINS, Capt. R.E., Adjutant.

The Court of the Painters' Company have unanimously decided to confer the Hon. Freedom and Livery upon Mr. Sheriff Banister Fletcher, C.C., in recognition of his valuable services in connection with the Trades' Training Schools, Great Titchfield Street.

Egham (Surrey) Urban Council protest against the price (£2,000) asked by the Crown authorities for six acres three roads thirty-five poles for housing purposes. At a recent meeting of the council one member said it made them wonder whether the Government's housing proposals were a fraud and sham. The council have offered £100 per acre.

LIST OF TENDERS OPEN.

COMPETITIONS.

No Date. For competitive plans of three types of cottages, of four, five, and six rooms respectively. Particulars and conditions of E. L. Morgan, Borough Engineer, Town Hall, Bolton, on payment of £1 1s., to be returned to bona-fide competitors, after the selection.

BUILDINGS.

Jan. 22.—Rebuilding laundry at Kingsland Road House. For the Shoreditch Guardians. Plans and specifications at office of the architect, Mr. A. W. S. Cross, F.R.I.B.A., 45-6, New Bond Street, W. Tenders to Mr. John C. Clay, at Board Room, 204, Hoxton Street, N.

PAINTING.

Feb. 12.—Painting at various places.—For the Lancashire and Yorkshire Railway.—Forms of tender and specification may be obtained on application at the Engineer's Office, Hunt's Bank, Manchester. Tenders to R. C. Irwin, Secretary, Hunt's Bank, Manchester.

ROADS AND STREETS.

Jan. 22.—Laying granite sett paving at Joyce Green Hospital, Dartford, Kent, in accordance with drawing and specification prepared by Mr. T. Cooper, M.I.C.E., M.I.M.E., engineer-in-chief.—For the Metropolitan Asylums Board.—The drawing, specifications, and form of tender may be seen at the Office of the Board, Embankment, E.C.4. Tenders to be delivered at the office of the Board by Jan. 22. D. Mann, Clerk.

Feb. 5.—Work in connection with the deviation of the main road between Hfracombe and Combe Martin, near Bannet's Wood.—For the Devon County Council. Tenders to B. S. Miller, Clerk, The Castle, Exeter.

SANITARY.

JAN. 25.—Collection, removal, and disposal of house refuse from the urban district of Willesden (one year from April 1).—For the Willesden Urban District Council.—S. W. Ball, Clerk, Municipal Offices, Dyne Road, Kilburn, N.W.

The Kettering Urban District Council are about to erect a war memorial on a triangular piece of ground behind the line of the footpath on the Market Harborough and Oundle main road, and in front of the council school in the village of Corby.

In view of the attempts rife to force decimal coinage, etc., on us after the fashion in which "Daylight Saving" was saddled on us, it is interesting to receive from Mr. Alfred Watkins, of Hereford, a pamphlet, in which he not merely urges a case against decimals, but pleads for the adoption of an octaval system of subdivision as fitting the wants of those who make, grow, buy, or sell things. Those interested may obtain a copy of the booklet, price 3d., post free, from the Watkins Meter Company, Hereford, or may order it from any bookseller.

It is proposed that the memorial to old Stonyhurst boys who have lost their lives in the war shall take the form of the foundation of a Solemn annual Requiem Mass; and the setting up at the college of some commemorative design, and the establishment of facilities for the education at the college of sons or dependents of past students who have fallen; and the erection and equipment of science laboratories. For these objects it is hoped to raise £20,000 and subscriptions, which may be spread over several years, may be sent to Mr. Philip W. Colley, hon. treasurer, 15, Hyde Park Terrace, W.2, or to the Rector of Stonyhurst.

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OUR ILLUSTRATIONS.

Palais de Justice, Besançon, France. Hugues Sambin, Architect, 1582-1585. Entrance to courtyard.
 Old Houses, Toledo, Spain. Royal Society of British Artists, from a drawing by Mr. Trevor Haddon, R.B.A.

Strand, W.C.2

Stained Glass Windows for the Palace of Peace at the Hague. "Architecture," "Astronomy," "Electricity," and "Handicrafts." Designed by Mr. Henry A. Payne, Royal Academy Exhibition, 1918.
 Village Centres Council. First Village Centre, Enham, by Andover, Hants. Plan and elevation of proposed Medical Block. Messrs. Fred Rowntree and Son, Architects.
 Hepplewhite Chairs, the property originally of Horace Walpole, and a Chippendale Table and Chair.

Currente Calamo.

The improvement plan prepared by Mr. Thomas H. Mawson in anticipation of the replanning of the metropolitan borough of Stepney was last Friday exhibited in the Whitechapel Art Gallery. The chief feature is to form a new highway starting on the western extremity from Trinity Square close by the new Port of London building, and terminating near the Regent Canal dock, at which point a new station for Stepney forms an essential detail of the scheme, which includes the linking up of the Tilbury and Southend Railway with the Metropolitan District Inner Circle system, a new station being situate at Tower Hill. The new boulevard, called Stepney Greeting, is to be 110 ft. wide, set out in a straight line, and immediately below its surface two railway archways will give direct access to the City. Adjacent to Trinity House Mr. Mawson shows a new unified building for housing the joint consular offices of London almost next door to the Port of London headquarters. This would advantageously concentrate public business. Another good suggestion is the change of site of the town hall—the design for which, by Messrs. Briggs, Wolstenholme, and Thornley, we illustrated in our issue of June 30, 1916—to a new position in "Stepney Greeting" in a line with Albert Square, and in a southerly direction, by means of a new avenue, to open up a vista of the King Edward Memorial Park, Shadwell, and the river. On the site of Albert Square Mr. Mawson has designed a campanile some 150 feet high, furnished with a belfry, well in harmony with the architectural style of the new town hall, as a war memorial of the Stepney men who fell in the war. Another road is projected to lead down to St. George's-in-the-East Gardens by the end of Cable Street, and from the eastern end of that dismal road cut through a wretchedly crowded part of the borough by way of a tangent ending in a circus directly adjacent to Shadwell Memorial Park, thus obtaining a sight of the river, and an inlet for fresh air. Mr. Mawson exhibits a series of warehouses set back from the river frontage in order to secure two ample thoroughfares by the side of the water-way. The higher road is 40 ft. wide next the buildings as an esplanade for business access and general

public use, the lower road being really the quay sufficiently high above high water level, from whence goods may easily be transferred to the basements of the adjacent factory or warehouse. The housing part of Mr. Mawson's programme deals with the abolition of the blocking up of contracted rear yards or gardens of the overcrowded tenements all over this area of London. For the present the proposal is to leave some of the less objectionable blocks of small dwellings, but to pull down those standing at the ends facing the return streets, and in all such cases to clear out the workshops so as to introduce sunlight and air. The new blocks in place of the sections thus removed to be workmen's homes in three stories high, all entered from a central common garden space, and on the top of each block, workshops in the roof. In addition to the intervening openings on plan, already alluded to, a central airway is shown on the long frontage of these sectional reconstructions. The new blocks laid out for other parts of the borough comprise workmen's dwellings in four pavilions for each section four stories high set round a central garden, and having workshops on the top, with a basement at one end of the square set out as a communal kitchen, with dining halls and a common laundry. The lay-out of the Shadwell park by Mr. Mawson provides two organised playgrounds for boys and girls and a pair of bowling-greens, an open orchestral theatre with bandstand, and a pleached semi-elliptical avenue following the line of the river, and bisected by the Rotherhithe Tunnel space twixt the park and the Thames, skirting which a riverside walk is provided. We hope to illustrate the plan at an early date. It is certainly well thought out in every detail.

The Y.M.C.A. has taken upon its shoulders, in addition to the hut work which has deservedly made it so popular in France, a really stupendous task—nothing less than the education of the whole British Army gratis upon University lines and in all subjects, from the most elementary to the most abstruse. They began with isolated classes in the huts, but this system, or lack of it, is now being rapidly abandoned in favour of comparatively large centralised schools located at the principal bases, from which isolated camps can, if and when necessary, be fed. The organisation is extraordinarily

efficient, and is being effected with great rapidity. One school has only been open for three weeks or so, and is already in full swing, with generally full, and in some cases overflowing, classes, a full-time table, and a competent staff. Some of the teachers are University men drawn from the Army, and many are ladies of considerable attainments who have gone out from home, while French is taught by French people. The great demand is for business subjects, such as book-keeping and shorthand, for French and for elementary mathematics, but the art rooms are always full, and there are also good attendances at lectures on even such subjects as Greek philosophy and advanced science. The demand for technical instruction is also considerable. On the building side there will almost immediately be more students than can be properly dealt with by one man. A good quantity surveyor, for instance, could give most valuable help. It is the same in the realm of mechanical engineering, the applicants for instruction exceeding the capacity of the staff; and yet something can be, and is being, done in almost every case. Another great and interesting demand is for instruction in agriculture, especially as regards vegetable growing, fruit farming, poultry and bee keeping, and other matters pertaining to the small-holder. In fact, there is every indication that the men are largely and rapidly awakening to the fact that in these free Y.M.C.A. schools or colleges they have opportunities of exceptional educational value for fitting themselves for a return to civil life.

Really Manchester should hasten to redeem the credit of the city as fit custodian of her art treasures, seeing that she has uniformly been treated so generously by artists. At the meeting last Wednesday to formally open the Horsfall Art Museum, heretofore known as the Ancoats Art Museum, the Lord Mayor admitted that if the Art Gallery Committee had had to begin to-day making such a collection of works of educational value as the museum now contained it would have taken many years. It was a wonderful collection, of which the Art Gallery Committee would be able to make great use, and Mr. Horsfall must feel a great deal of satisfaction that the work to which he had devoted so much of his life was to be continued by the city itself. Mr. Horsfall, in

a speech which recounted in detail the history of the foundation of the museum, said his own committee and himself had been astonished at the kindness with which their approaches had been met. Watts, for example, whom he asked for a memorandum of some kind of what he thought was his noblest picture, "The Court of Death," first sent him a small photograph of it with himself standing at the foot of it, and promised, when he had done with it, to let him have, for Manchester, his first study for the picture. A year before his death Watts recalled the promise, and said the time had come when he could keep it. When he entered Watts's studio he was astonished to find that this first study was really a great work, 13 ft. high and 9 ft. wide. Watts gave him this without a single word of stipulation as to what he should do with it. After Mr. Watts's death he presented it, with Mrs. Watts's consent, to the city of Manchester. He hoped some day to see it in the same room as the same artist's "Love and Death." Lord Leighton gave them a number of engravings, and other great artists had also been most kind.

Safe and comfortable travelling at 120 miles an hour is the promise held out by the Kearney High-Speed Railway. The system is likely to be adopted in a deep-level tube between Beresford Square, Woolwich, and the North Woolwich Station of the Great Eastern Railway on the other side of the Thames. The tube, which will be about three-quarters of a mile long, will be constructed with surface stations and gradients of 1 in 7, which will take it down to a depth of 110 ft. below street level and 42 ft. below the deepest part of the river bed. A maximum speed of 60 miles an hour in 23 seconds is attained with the Kearney system of gradients. It is expected that the construction of the tube will be begun in the summer, and take a year to complete. The cost of power for the line will not be much more than the cost of merely lighting the existing footway tunnel, which is a slow and laborious means of crossing the river. A model of the railway was shown last Thursday in a hall at Wandsworth by the inventor, Mr. E. W. Chalmers Kearney. A single bearing rail is used with an overhead guide railway. The track of the model is 120 ft. long, the gradients are 1 in 7, and the curves are of 10 ft. radius. Mr. Kearney said his system would be one-third less in construction, and about half in running, as compared with the existing twin-rail railways. We heartily wish him speedy success. Something is wanted to mitigate the present paralysis of the managers of the tubes, in face of the horrible overcrowding, discomfort, and delay.

We have read with pleasure and profit, and so will all readers who get it, "Rudiments of Handicraft," by W. A. S. Benson, M.A. (London: John Murray, Albemarle Street, W. 1s.). Its aim is to demonstrate that—just as there is an art of arithmetic, which is taught by itself, independently of all forms of business, domestic or commercial, to which it may

afterwards be applicable, so "if we are to approach the ideal of Ruskin of a 'liberal education founded on right handicraft,' we must lay the foundation on a course of exercises contrived not only to develop sureness of eye and the touch of skilful hands, but also to stimulate intelligence by making clear the relation which drawings and written words, together with the principles of number and other rudiments of science, bear to the actions set for performance. Recognising that the only material we can use for such primary exercises is wood, Mr. Benson gives us a series of Tasks, not such as the joiner or any other woodworker would essay, but such as may be interwoven between the other items of the general education of children between the ages of eight and twelve, and considerably before the average time for specialised or technical training. Then follow advice on the necessary materials, tools and equipment, and a series of sections dealing with working drawings, and the making of simple articles, such as crates of rough laths, garden labels, brackets, a small table, bookshelves, garden frames, etc. Two appendices follow dealing with painting and staining, and a few experiments illustrating the structural application of the materials used in the preceding exercises. Every parent of boys with mechanical aptitudes should buy the booklet, and teachers of technical institutes, schools of art and design, and the like, will find in it much that will interest and benefit them.

The woes and wants of the domestic servant which some of the dailies are regaling their readers with are added to by the *Manchester Guardian*, which gives another story about one of the many faithful handmaidens who have had to suffer from the vagaries of their masters. This paragon of patience, "Red Lion Mary," who looked after Burne-Jones and William Morris when they shared a studio, must have well earned her wages. We are told that one morning after breakfast Morris came out on the landing and roared downstairs: "Mary, those six eggs were bad. I've eaten them, but don't let it occur again." Morris was in the habit of lurching daily, at all seasons of the year, off roast beef and plum pudding, and he liked his puddings large. "Do you call that a pudding, Mary?" he shouted, when served with one about the size of a breakfast-cup, and, having added some appropriate objurgations, he hurled it at her. "Red Lion Mary" endured the irascible one's tantrums, we are assured, to the end of her days.

We are very glad to see that at the Mansion House last Thursday the Lord Mayor fined a man 20s. for spitting in a tramway-car, contrary to a by-law of the London County Council. The Council's solicitor said they had had so many complaints of this objectionable and insanitary habit that they were employing a body of plain clothes officials to detect the offenders. The filthy practice is disgusting, common on trams and buses and elsewhere, and the insolence of the dirty perpetrators to remonstrants hardly less so.

HOUSING AFTER THE WAR.

In May last the Special Housing Committee of the Manchester Corporation asked the Manchester branch of the Auctioneers' and Estate Agents' Institute to answer a series of questions and to state their views in regard to the housing conditions likely to prevail after the war. This was done, and a copy of the correspondence has just reached us from the Committee of the Institute. Necessarily, much of the matter is practically identical with all that we and other well-informed people have been saying for some years past, but the information drafted is so excellently epitomised, and so very pertinent at the present juncture, that, if obtainable, every municipal authority would do well to consider it very carefully before taking upon itself the responsibilities with which they are likely to be saddled in connection with housing schemes.

The questions submitted by the Town Clerk of Manchester at the request of the Special Housing Committee of that city were as follows:—

What is your experience as to shortage of houses? What number of houses are required? For what class of persons are houses required? What proportion of a man's wages should go for rent? Can you give any idea of the cost of houses, pre-war and present time? Do you think there will be any reduction in cost after the war (if so, how soon)? What is in your opinion an economic rent? Who do you think should supply the houses required—private enterprise or municipality? If private enterprise, have you any suggestions to make in regard to the working of the Government grants? What, in your opinion, has caused the shortage of houses? The Institute was also asked to state its views as regards the effect on property of scarce and dear money; the Finance Act, 1909; increased cost of building; competition of municipal building; building bye-laws and cost of paving and sewerage; the Town Planning Act; low wages; and the Rents Restriction Act.

In reply to the first, second, and third questions, the Institute, of course, replied that the greatest shortage was that of small and medium-sized dwelling-houses ranging from the four-roomed house let to the poorer classes at 5s 6d. per week, and of larger houses let up to £40 per annum. That 5,000 houses were wanted at once, and 1,500 thereafter annually to keep pace with the demand. The fourth question the Institute did not feel qualified to answer, rightly declaring that any attempt to fix a percentage of rent to wages was outside its province. Replying to the fifth question, the Institute proposed the schedule given herewith, which shows the actual cost of pre-war-built houses; the post-war figures are based on the prices of labour and materials which were current on last spring's figures. The post-war figures are put on the lowest possible basis. The rate of return on capital, namely, 6 per cent. per annum, would, as it is remarked, be found insufficient as an incentive to ordinary building enterprise. As regards reduction of cost after the war, the opinion is expressed that it was unlikely till time modified demand and prices, but that any attempt to speak more definitely would be merely guess-work.

In regard to an economic rent, it was pointed out that the term has different meanings according to the purpose and theories of persons using it. The sense in which it was used, and in which, of course, only pertinent to the question at issue, may be defined as the rent fixed by

the operation of the law of supply and demand free from any unnatural restrictions. In other words, a rent sufficient to enable the landlord to perform his obligations in the way of upkeep and to provide an adequate return on the capital expended. Accepting this, "economic rent" is the foundation upon which any real and permanent solution of what is called the "Housing Problem" must rest. The possibility of obtaining such a rent with reasonable certainty is, as will be found ere long, a condition precedent to an adequate and permanent supply of houses. Any scheme (except for the supply of almshouses) which is based on rents subsidised out of rates or taxes is unsound and likely to cause more harm than good. It is often urged that the exigencies of the war necessitate schemes based on subsidised rents by the municipalities as a temporary palliative, and for the purpose of bridging over a difficult period. The fact remains that the principle of "economic rent" should not be departed from except in the case of the indigent poor, and even then limited to its least possible dimensions. Assume any number of houses are built by any authority and let at rents below the "economic rent," and the loss charged to the rates. Such houses (judging by the requirements of the Local Government Board) would be of the modern five and six-roomed type, built, say, twelve to the acre and under pleasant conditions. The tenants would naturally be drawn by selection from the best of the skilled artisans, clerks, and such like. It will follow that the poorer sections of the community, in addition to paying their own rent in full, will have to make a contribution towards the rent of these favoured individuals in the form of increased rates. In other words, part of the cost of living will be taken from the shoulders of the better-placed and better-paid citizens and put upon the shoulders of those in poorer circumstances.

Asked who should supply the houses required, the Institute replied quite rightly that under normal conditions private enterprise would, as in the past, have proved the most natural and economical source of supply. But, as we all agreed under present abnormal conditions, and as the then President of the Local Government Board said in his Circular of July 28, 1917, "the complete solution of the housing problem is not likely to be accomplished, except with the co-operation of private enterprise, including public utility societies, and that in order to secure the full advantage of their help it may be advisable for the State to offer them assistance." That any scheme tending to hinder or discourage private enterprise would be pernicious, we shall all, too probably, know ere long, unless, even at the eleventh hour, the Government makes up its mind to assist building societies, public utility societies, and private individuals in every way.

The Institute, of course, recognised that the great difficulty which presents itself in connection with private enterprise is the natural and proper reluctance of the State to make grants of public moneys for the benefit of private individuals. But it was of opinion, and rightly, that private enterprise is essential to the solution of the housing problem; that, unaided by the State, private enterprise cannot move; that, in one form or another, by grant, subsidy, or bonus, public money will have to be given to builders of houses for some years to come. There is no alternative, and until the position is fully recognised by those responsible for housing schemes, suggestions relative to the working of Government grants will be futile.

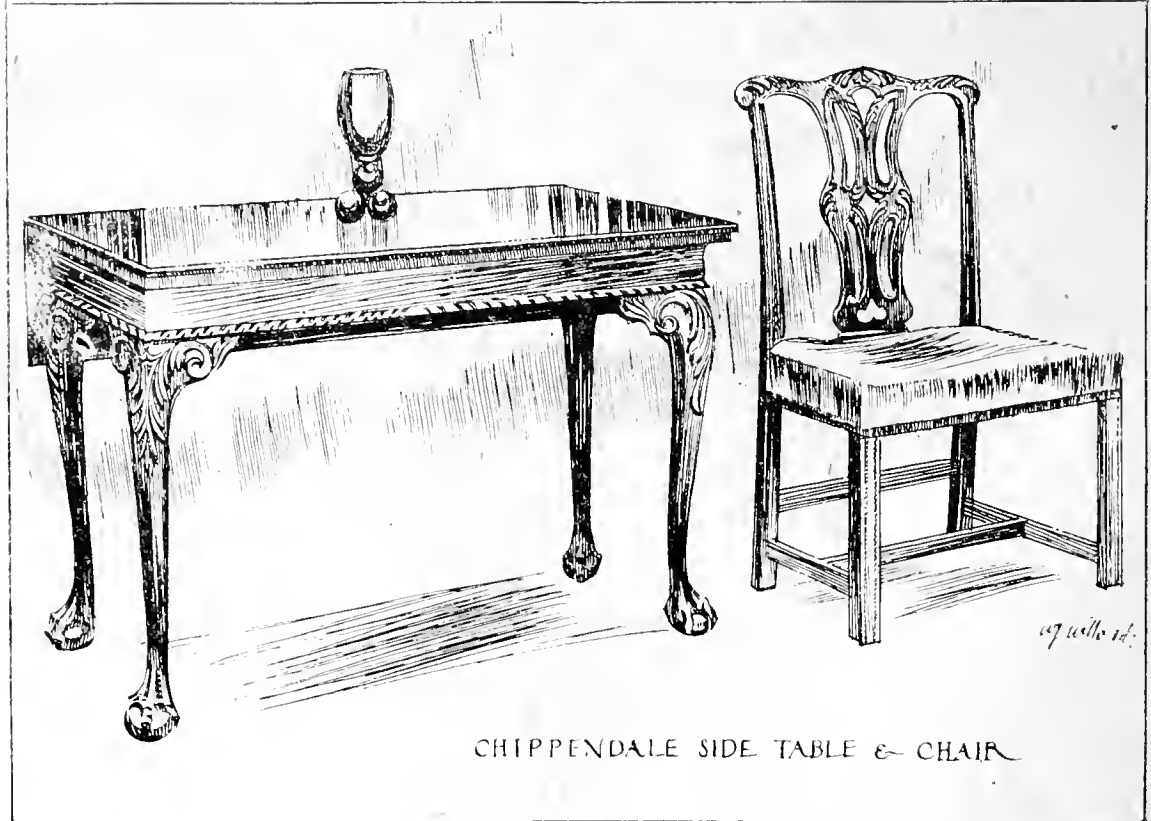
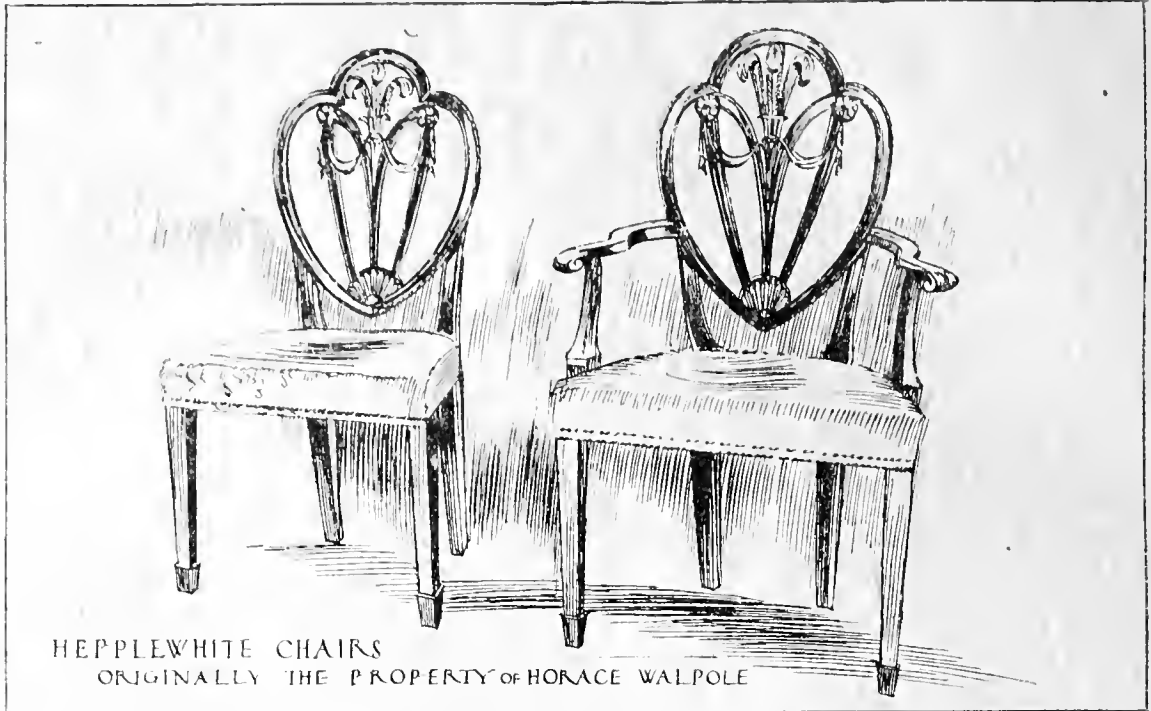
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	Square Yardage.	Cost of Land at 4/2 per yard.	Cost of Building.	Builder's Profits.	Paying and Sewering.	Legal Costs.	Selling Price.	Weekly Rent.	Annual Rent.	Rates.	Other Outgoings.	Net Return.	Approx. % on Cost.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
(1) House with parlour, kitchen, and two bedrooms, with bath in back bedroom, hot water, outside w.c., built in rows of say 12 houses.....	pre war 108	22 10 0	135 0 0	13 10 0	16 0 0	5 0 0	192 0 0	6 6	16 18 0	3 16 10	2 19 0	10 2 2	5 5 3
(1a) A similar house, built semi-detached, and say 12 to the acre.....	post war 108	22 10 0	304 0 0	30 8 0	32 0 0	7 10 0	395 8 0	16 3	42 5 0	11 14 6	6 9 6	21 1 0	6%
(2) House with parlour, kitchen, scullery (no lobby), two bedrooms, small bathroom, with bath and hot water, w.c. outside, built in rows of say 12 houses.....	post war 403	84 0 0	324 0 0	32 8 0	32 0 0	7 10 0	479 18 0	19 0	49 8 0	13 14 0	6 19 6	28 14 6	6%
(2a) A similar house, built semi-detached, and say 12 to the acre.....	pre war 125	26 0 0	146 0 0	14 12 0	18 0 0	5 0 0	209 12 0	7 0	18 4 0	4 17 5	3 3 3	10 3 4	4 17 0
(3) House similar to No. 2, with lobby, slightly larger, and with lavatory wash basin in bathroom, in addition to bath.....	post war 125	26 0 0	328 10 0	32 16 0	36 0 0	7 10 0	480 16 0	17 3	44 17 0	11 18 7	6 18 3	26 0 2	6%
(3a) Similar, semi-detached, and 12 to the acre.....	post war 403	84 0 0	348 10 0	34 16 0	36 0 0	7 10 0	510 16 0	20 0	52 0 0	13 16 2	7 8 0	30 15 10	6%
(4) House with lobby, parlour, kitchen, scullery, three bedrooms, bathroom, with bath and lavatory, w.c. outside.....	pre war 140	29 0 0	200 0 0	20 0 0	20 0 0	5 0 0	274 0 0	9 6	24 14 0	6 17 0	4 6 0	13 11 0	4 18 11
(4a) Similar, semi-detached, and 12 to the acre.....	post war 140	29 0 0	450 0 0	45 0 0	40 0 0	7 10 0	571 10 0	23 3	60 9 0	16 16 8	9 5 9	84 6 7	6%
	post war 403	84 0 0	480 0 0	48 0 0	40 0 0	7 10 0	729 10 0	28 9	74 15 0	20 15 6	10 7 0	43 12 6	6%

NOTES.—In estimating the building cost of houses 12 to the acre, it has been assumed that the plan of the house may be modified and part of the extra cost avoided, leaving the net extra cost as stated. In estimating paving and sewerage costs of houses 12 to the acre, it has been assumed that savings would be effected in passage paving and in other ways, leaving the total charge unaffected.

The item "other outgoings" is made up of Repairs, Insurance, Empites, loss of rent, and Commission on collection. No. 2 (pre war). These figures relate to property erected in Salford. Nos. 1, 3, and 4 (pre war) relate to properties erected in Manchester.

The rates have been calculated on the basis of current rates.



Asked what has caused the shortage of houses, the reply, of course, is the increased cost of building, unwise political and social propaganda, and persistent misrepresentation of facts connected with house building and house owning, which has been particularly rife during the last ten years, which has confused and distorted public opinion, and has undoubtedly materially increased the difficulty of dealing with the present impasse. Next, the Finance Act 1909-10. The Housing and Town Planning Act and similar legislation; the increased standard of sanitary requirements; and building by-laws and roadway requirements. The war has, of course, accentuated the difficulties which existed prior to its outbreak.

That the Finance Act 1909-10 ought to be entirely repealed is once again urged. It has proved valueless as a means of procuring revenue; it is complicated, vague, and confusing in its provisions, and uncertain in its operation; it acts as a strong deterrent to enterprise in house-building and house-purchasing, since it singles out such enterprise for special taxation over and above the taxation of other forms of investment; it has undermined the confidence of mortgagees and consequently has caused a material diminution of the amount of money available for lending on mortgage, without which building operations cannot be carried out.

As regards the competition of municipal building, it is quite rightly predicted that if it is to be undertaken on the lines of the present Government proposals there will be no competition, since the municipalities will have the field to themselves. If, on the other hand, municipalities are to work on the same footing as public utility societies and private enterprise generally, and particularly that each scheme is to be placed on a sound financial basis, there is no objection to municipal competition, but most certainly, speaking generally, by reason of the highly-specialised nature of the business it would be difficult for municipalities to compete successfully with the private builder.

The building by-laws require amendment in the direction of making them less exacting for the types of small houses dealt with in this report. We also suggest that a discretionary power should be given to the local authority to waive parts of the by-laws where circumstances permit without damage to the public interest.

The final pages of the report on by-laws, the Town Planning Act, low wages, and the Rent Restriction Act are in each case temperate and true statements of fact. Beyond all doubt when that Act expires, which it will in six months after the war ceases, most serious trouble and disturbance will follow the necessary and inevitable adjustment in rent which is almost certain to follow. It would have been far wiser to have limited the increase to a given percentage during the first year, an increased percentage on the second year, and so on, thus bringing about the adjustment gradually and avoiding violent changes.

H. J. Wadling, F.R.I.B.A., aged 73, late of Camden Road, N.W., and of 3, Essex Court, Temple, E.C., has left £15,500.

A sculptor of some reputation has been arrested in Paris on a charge of being the author of two statues which bore the forged signature of Rodin.

The annual general meeting of the National Federation of Building Trades Employers of Great Britain and Ireland will be held in the Central Building Trades Employment Exchange, 13-16, Tavistock Street, Covent Garden, London, W.C.2, on Wednesday, January 29, 1919, at 10.30 o'clock in the forenoon, to consider the business mentioned on the agenda.

THE SOCIETY OF ARCHITECTS.

According to the annual report which was presented at the meeting of the Society of Architects on Thursday last, the society has held sixty-two meetings during the year, of which fifty-five were council and committee meetings and the remainder ordinary meetings, for the transaction of routine business.

Thirty-one candidates have been admitted to membership and four to studentship. After allowing for deaths, resignations, lapses, removals and transfers, the total membership on October 31, 1918, was 1,170, made up as follows. Last year's figures are added for the purpose of comparison:—

	1918.	1917.
Members	982	961
Hon. Members	26	27
Retired Members	33	33
Graduates	8	10
Students	121	132
	1,170	1,163

Upwards of 370 of the members (in every class) have been serving with H.M. Forces.

FINANCE.

The revenue account and balance-sheet for the year ended October 31, 1918, shows an increase in the total expenditure, an increase in the income, and a surplus for the year of £559.

BUILDING CONTRACT FORM.

The council has again approached the R.I.B.A. Council with a proposal for joint action in the production of a standard form of building contract, to be agreed by all architectural and other bodies representing the building industry. The Institute, before taking any steps in this direction, invited the Society's comments on the R.I.B.A. revised form of contract. On going through this the society found it in effect substantially identical with the draft form of contract prepared by them in 1915, a coincidence indicating harmony of thought and intention between representatives of two bodies working independently on the same subject. Further consideration of the society's draft in the light of extended experience of war conditions suggested that there was room for improvement in certain directions, and it was decided by the council before going further to ask the Institute whether it was their intention at the completion of the negotiations to issue a joint standard form of contract, or alternatively in what other way the co-operation of the society would be recognised in and on the proposed standard form of building contract when issued. In reply, the Institute made it clear that their proposal was to continue to issue the contract form as an Institute document, but that the committee would meet the society's president and discuss the matter with him.

The president therefore met the Institute Committee, but the representatives of the two bodies were unable to agree to the record of the conclusions arrived at, and in the meantime the Institute Council decided not to accept the recommendations of the conference as put forward by their own representatives—viz., "that in order to keep the conditions of contract uniform, it be issued by each society with the president of the society issuing the contract as appointing the arbitrator."

The point at issue between the representatives was whether the conditions referred to was the "Institute revised form" or the one which the society suggested should be "the joint work of the two bodies," and to be agreed by the representatives of the building industry.

Having twice failed in its endeavours to come to an agreement with the Institute, the council has decided to issue a separate form of contract, which is being published for public sale, and copies of it will be obtainable from the printers, Messrs. W. S. Cowell, Ltd., Ipswich, and from the society, at 23, Bedford Square, W.C.1, price one shilling.

TOWN HOUSING OF THE WORKING CLASSES.

Major Herbert Freyberg, F.S.I., etc., then showed a scale model of four cottages giving the accommodation required under the Government's housing scheme. The model showed how sixteen of these cottages could

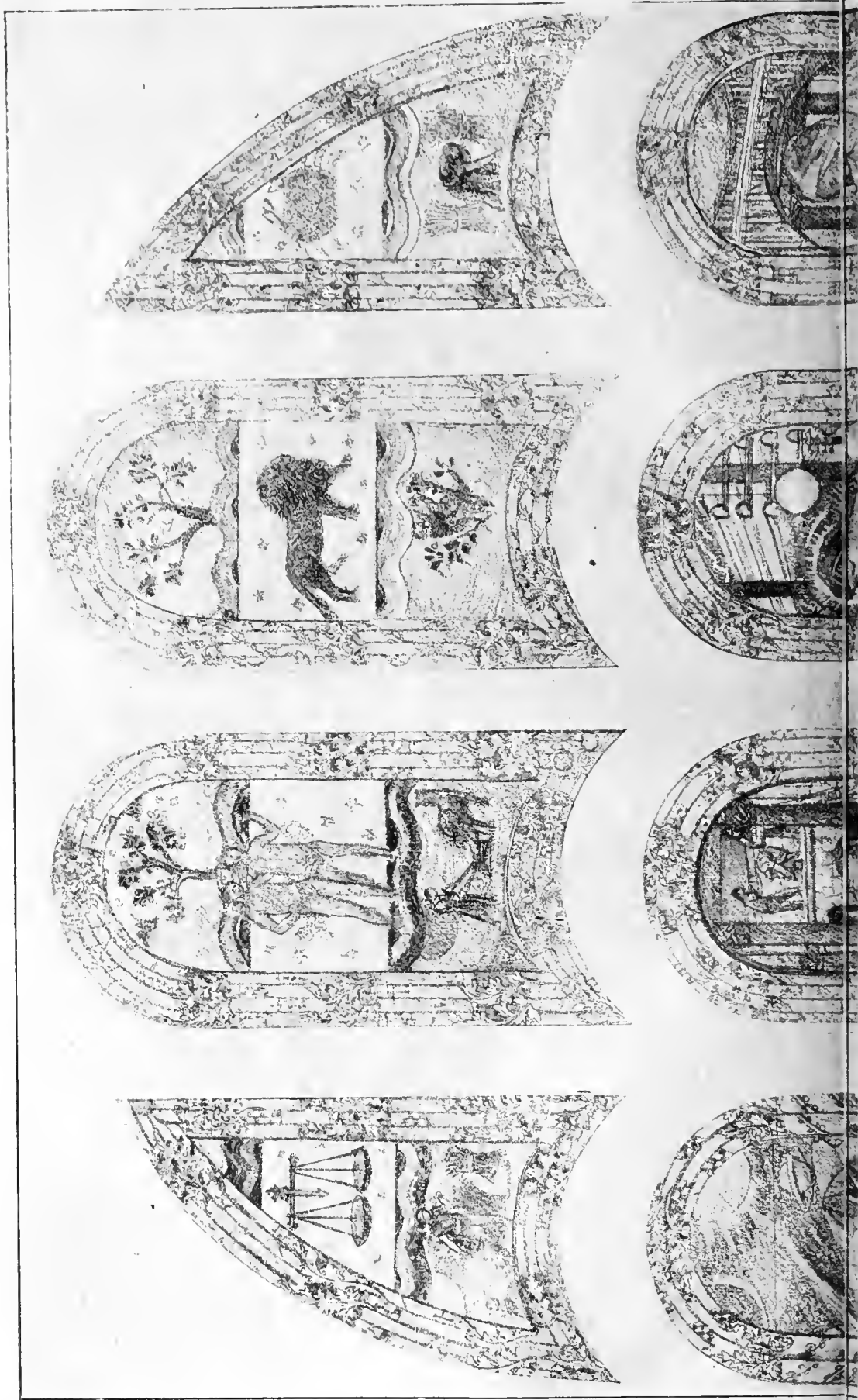
be arranged in four blocks and plotted on a site of one acre and a third.

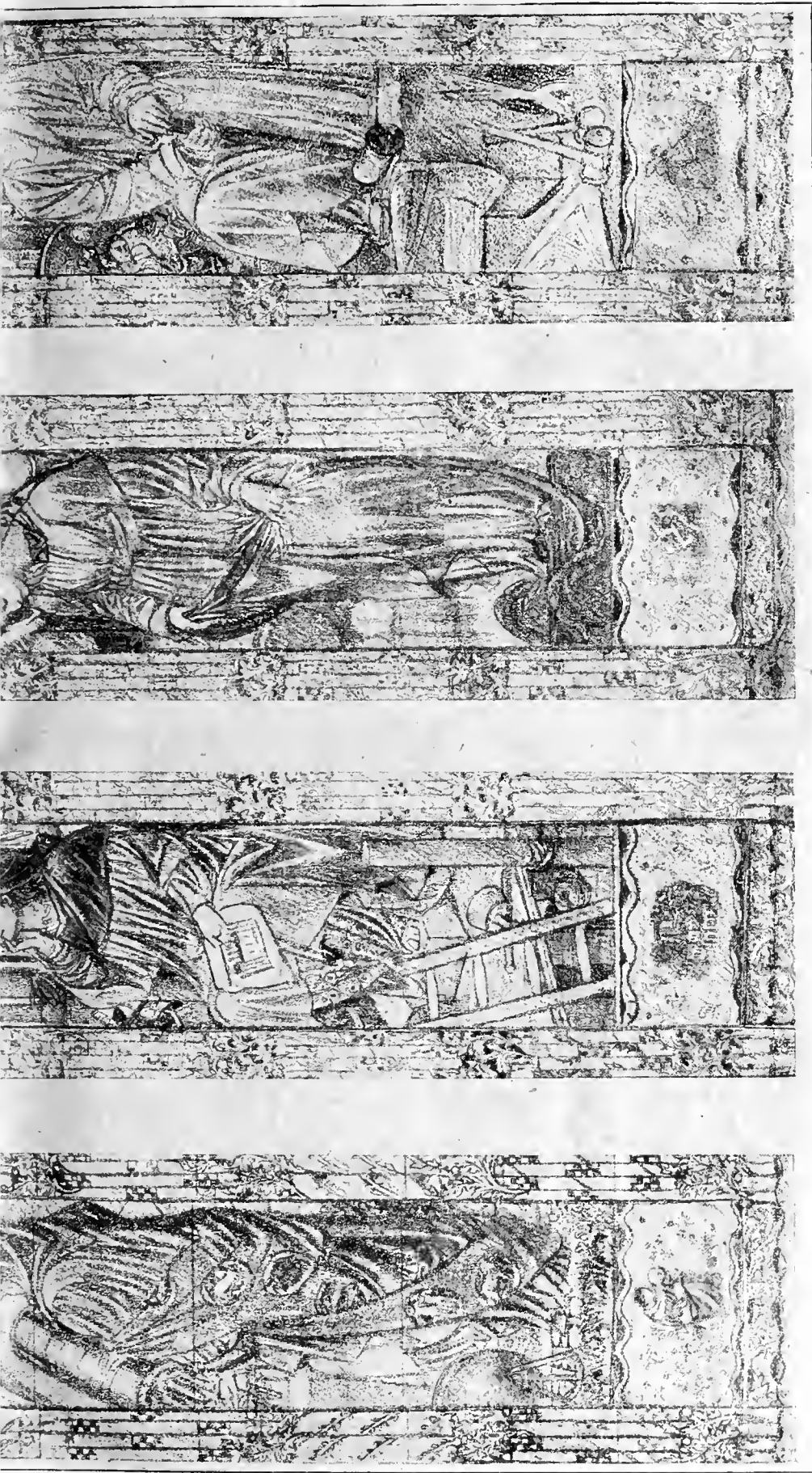
Afterwards he read a paper on the Town Housing of the Working Classes, describing an experience of the administration of Part III. of the Act of 1890; when that Act was put into operation by the Kensington Borough Council in Notting Dale. Here there was a special area consisting of five streets, with a population of about four thousand. The average births per annum were 120 and the average deaths of infants under one year old 54. The average deaths from the seven principal zymotic diseases numbered 5.2 per annum, and the average death rate for the years 1896-1900 was 49.5 per 1,000. One of the five streets was chosen as most suitable for dealing with. On the north side this street had a row of twenty-eight non-basement two-storied cottages, with long gardens, abutting on a small public park; and these houses, it was considered, offered scope for improvement. The other side of the street, consisting of cottages with underground rooms and entire absence of through ventilation, called for demolition. The reputation of the neighbourhood was such that when, on the occasion of the opening of the first batch of dwellings, he called a hansom, the driver advised him not to go there.

Major Freyberg described the Borough Council's experience in buying the street. To avoid the inflation of values, the then Mayor gave a credit of £20,000 to members of the Housing Committee who bought without disclosing the fact that the purchase was on behalf of the Borough Council. In this way the greater part of the street was acquired and taken over by the Borough Council. Next morning houses that had not yet been bought and which, the night before, were worth £500 were found to be valued at £800. Having got possession the cheapest and simplest plan would have been to empty all the houses in order to start on reconstruction and remodelling in one simple and comprehensive scheme; but it was felt that to make many hundreds of people homeless would be a very bad start for a reform which was intended to re-house an existing population. Six of the houses on the north side had been purchased with vacant possession and each of these four-roomed cottages was transformed into two self-contained three-room suites with separate w.c., scullery, larder, and either well-paved or deep balcony overlooking the small park; the works comprising the erection of kitchen, scullery, and w.c., balcony, larder, etc., to each suite, entirely new sanitation of L.C.C. standard, new roofs, practically new plastering, new stairs and floors, paved yards, concrete over site damp courses, etc., etc., and costing about £1,900 all told. These 12 three-room suites let at once at 7s. 6d. per week each. Eleven adjoining houses were then emptied, remodelled at an expenditure of about £4,300, and formed into 19 three-room suites, and three two-room suites, with office and work shop; which let at 8s. and 6s. 6d. per week respectively. Nine other cottages were converted at a cost of about £3,200 into 18 two-room suites which let at 6s. 6d. a week. The remaining two cottages on the north side were demolished, and a new three-storey building put up containing six two-room suites at a total cost of £1,552. These suites let at 7s. per week each. The south side presented a more complicated problem owing to the lack of depth and the restriction of the building line; but, after negotiations with the L.C.C., six new blocks of self-contained two-room suites were erected at a cost of about £8,400, each suite letting at about 6s. 6d. a week. At a closely adjacent site, five dilapidated dwellings were demolished, and 26 single-room tenement erected at an outlay of about £2,400. These let at 3s. 6d. and 4s. per week per suite. Experience showed that rebuilding cost nearly three times as much as remodelling, and that the new buildings were nothing like so popular as the rooms in the more homelike cottages. Another experience was that there was a much greater demand for suites of three rooms than there was for those containing only two. In the case of an appli-

(Continued on page 66.)

THE BUILDING NEWS. JANUARY 22, 1919.





STAINED GLASS WINDOWS FOR THE PALACE OF PEACE AT THE HAGUE.
Designed by Mr. HENRY A. PAYNE, Royal Academy Exhibition, 1918.

(Continued from page 59.)

with a boy and a girl both over twelve of age, of course, the application had refused until a three-room suite became available. Financially considered, this scheme had increased the rates by a farthing in the pound, one of the prime reasons for the deficit being that houses from 14s. to 16s. a week had to be built and then demolished. Some incidental savings to the improvement were that an eighth of an acre was added to the site and about 2,000 feet of extra air space made available free from buildings. However, the deficit was more than covered by the reduction in the cost of Poor Law relief for the area.

Major Freyberg said there were hundreds of wide streets in the East End and here in London, bordered by two-story non-basement cottages, every such cottage being easily adaptable into two-room self-contained suites; and these cottages should not be replaced by buildings of great height shut out the sunlight and air. He knew some buildings in the East End in a third of the rooms it was impossible for direct sunlight to enter—and whose he tried the legs of the tired worker and children. He said he thought that eight feet high was sufficient for a room. Such a room was more easily kept warm than one of a lower pitch, and, if the windows were right, was more easily ventilated. He advocated reforms in housing which he considered necessary if National Housing was to be a success. Among these were included an intensive, easy and simple method for the reclamation of land; the amendment and codification of existing bye-laws and leasehold enfranchisement. He mentioned that he had seen a great difference in favour of the native population of the East End when compared with the aliens who lived in the same neighbourhood; and he considered that if old-age pensions we could combine comfortable homes, we ought to be able to dispense with our costly and now half-empty houses. This step, he thought, would not only effect a great annual saving of rates, but would also make available many sites of great value towards the scheme of National Housing. (Applause.)

An interesting and lengthy discussion followed, in which the Chairman (Mr. Noel D. Field), the Secretary (Mr. McArthur), Captain Bramall, and Messrs J. H. T. Wallis, H. A. Lane, E. F. White, J. Cox, and several others took part. The speakers gave their own experience of housing schemes, and all discussed one or more of the points raised in the lecture. Mr. Field confirmed from his own experience that there was a great difference between the native and foreign-born population of East London, the houses of the native population being much cleaner. Captain Bramall asked that the percentage of the displaced population that did not return to the area, in his mind, he said, one of the worst failures of a reform of this kind was that the people displaced went probably to the overcrowding in some other slum.

He wanted to know how the people remained on the area treated their new homes; it was often alleged, he said, that it was useless to do anything for this class of people, because they soon reduced their homes to the condition of the old ones. The question of leasehold enfranchisement was discussed, and it was pointed out that there were a good many old houses that could be converted into suites of tenements, three or more rooms in each tenement, and that the ground landlord stood in the way. Several speakers objected to housing schemes which took vacant land in the suburbs which to build new dwellings, while leaving untouched the plague spots in the town. It was agreed that the cost of reconstruction, including street widening, was much less than that of the new buildings of the same cubic capacity.

The question of the proper height of the new dwellings was discussed, some speakers supporting Major Freyberg in advocating a low ceiling, but one taking the opposite view. Questions were asked as to

damp courses and as to who carried out the repairs in the case of the Notting Dale scheme.

Replying to some of the points that had been raised, Major Freyberg said that, as far as he could gather, about a quarter of the people displaced went into other parts of the borough where conditions were only one degree better than in the neighbourhood they had left, and where they could still live in the one room. Others moved into neighbouring boroughs, and a good many of these lived under better conditions. Every effort was made to re-house the old tenants on the original area, and not a single suite of rooms was let to anybody else until all claims had been satisfied on the part of people who had been displaced. As to how the people treated their new houses, they treated them exceedingly well. (Hear, hear.) It had been necessary to put new damp courses into the old houses that were converted. There was not a sign of dampness in these houses when taken over, but that was because the old drains, being defective, carried off the surface water. When new drains were put in the dampness rose in the walls. As to repairs, the original building was carried out by contractors, but afterwards a couple of painters, a carpenter, and some labourers were employed as a permanent staff to carry out repairs. When not employed on these the borough engineer found other work for these men to do.

Our Illustrations.

PALAIS DE JUSTICE, BESANCON, FRANCE.

This building is situated in the Place St. Pierre, which leads to the Grande Rue, at Besançon. The Palais de Justice is very unlike its immediate neighbours, which includes the 18th Century Church. This gives its dedication name to the parish wherein these buildings stand. The ponderous Hotel de Ville hard by, and erected in the 16th century, is a contrast to both. Hugues Sambin, a pupil of Michael Angelo, was the architect of this Palais de Justice. He gained more than a local reputation by having rebuilt the façade of the Church of St. Michael, near the Hotel de Ville, at Dijon, his native city. His work now illustrated from Besançon dates from 1582-1585, and it furnishes a distinct contrast to its surroundings, exhibiting less reserve and ignoring formality. Besançon was alternately Burgundian and Arlesian. Among its historic remains it boasts a Roman triumphal gateway of the time of the Antonines, but it is now known as the Porte Noire.

OLD HOUSES, TOLEDO, SPAIN.

This very attractive drawing has an additional value, apart from its artistic merit, because the row of old Spanish houses represented have recently been demolished. The picture was on view at the Royal Academy when the Royal Society of British Artists held their exhibition in Piccadilly just lately. The architecture shown by Mr. Trevor Haddon, R.B.A., is typical of Spanish taste. The buildings stood outside Toledo beyond the Bridge of St. Martin, and occupied a sloping site overlooking the Tagus. The artist acknowledges the assistance of Sen. R. Arredondo, an architect friend who gave him a copy of a painting showing the houses prior to their partial demolition, which happened some while before the final removal of the block. The old Moorish citadel is approached by the Alcantara Bridge, high above the Tagus. The cathedral, the Mudejar, remains, the two old Jewish synagogues, now called El Transito and Santa Maria Blanca, also the world-famed mosque, serving to-day as the church of El Christo de la Luz, are the chief glories of historic fame in

Toledo. In our issue of April 10 last we illustrated the Puerta del Sol from an etching by Mr. Charles O. Murray, R.P.E., who wrote an article about it in the same number. Mr. Trevor Haddon has published several illustrated books on Spanish architectural subjects in colour, and also a fine volume on "Old Venetian Palaces."

STAINED GLASS WINDOWS FOR THE PALACE OF PEACE AT THE HAGUE.

On December 25 last we illustrated the central window of the series of three shown at the Royal Academy Exhibition last summer. To-day we have reproduced the drawings of the second window, showing in the big lower lights figures representing "Architecture," "Astronomy," "Electricity," and "Handicrafts," the avocations of Peace. In the upper panels are figured The Scales, The Twins, The Lion, and The Crab, from the Zodiac. These window cartoons, by Mr. Henry A. Payne, of Amberley, Gloucestershire, were made on commission of the Government. With our previous illustration we gave a few descriptive particulars. The third window will be illustrated at an early date.

VILLAGE CENTRES COUNCIL.—FIRST VILLAGE CENTRE AT ENHAM, ANDOVER, HANTS.—MEDICAL BLOCK.

The Council has recently purchased an estate of 1,000 acres for the curative treatment and training of disabled ex-service men. The centre is about to be opened, and the British Red Cross Society are making a grant of £10,000 for the building and equipment of the Medical Block. These buildings will provide accommodation for the special treatment of orthopaedic cases, and for those suffering from neurasthenia and shell-shock. The equipment will consist of the most approved electric and massage appliances, as well as a complete installation of medical baths, comprising douches, aeration, and whirlpool baths. An aerated sedative pool, with dressing and rest rooms en suite, also a vapour bath, shampooing room, and plunge bath will be notable features of the treatment. The architects are Messrs. Fred Rowntree and Son, 11, Hammer-smith Terrace, London, W.6.

HEPPLEWHITE AND CHIPPENDALE FURNITURE.

The two upper sketches on this sheet illustrate two of the set of three Hepplewhite chairs, originally belonging to Horace Walpole, and given him by his friend John Pinkerton. These were sold quite recently by Messrs. Robinson, Fisher, and Harding, in New Bond Street, the auction price obtained being fifty-two guineas. These pieces are delicately carved with wreaths and prince's plumes, and have square tapered legs, the seats being covered with figured damask. The Chippendale side table has a leaf on one side and the usual claw feet to the carved legs finely made in mahogany, the chair being of the same character, though more sturdy than elegant.

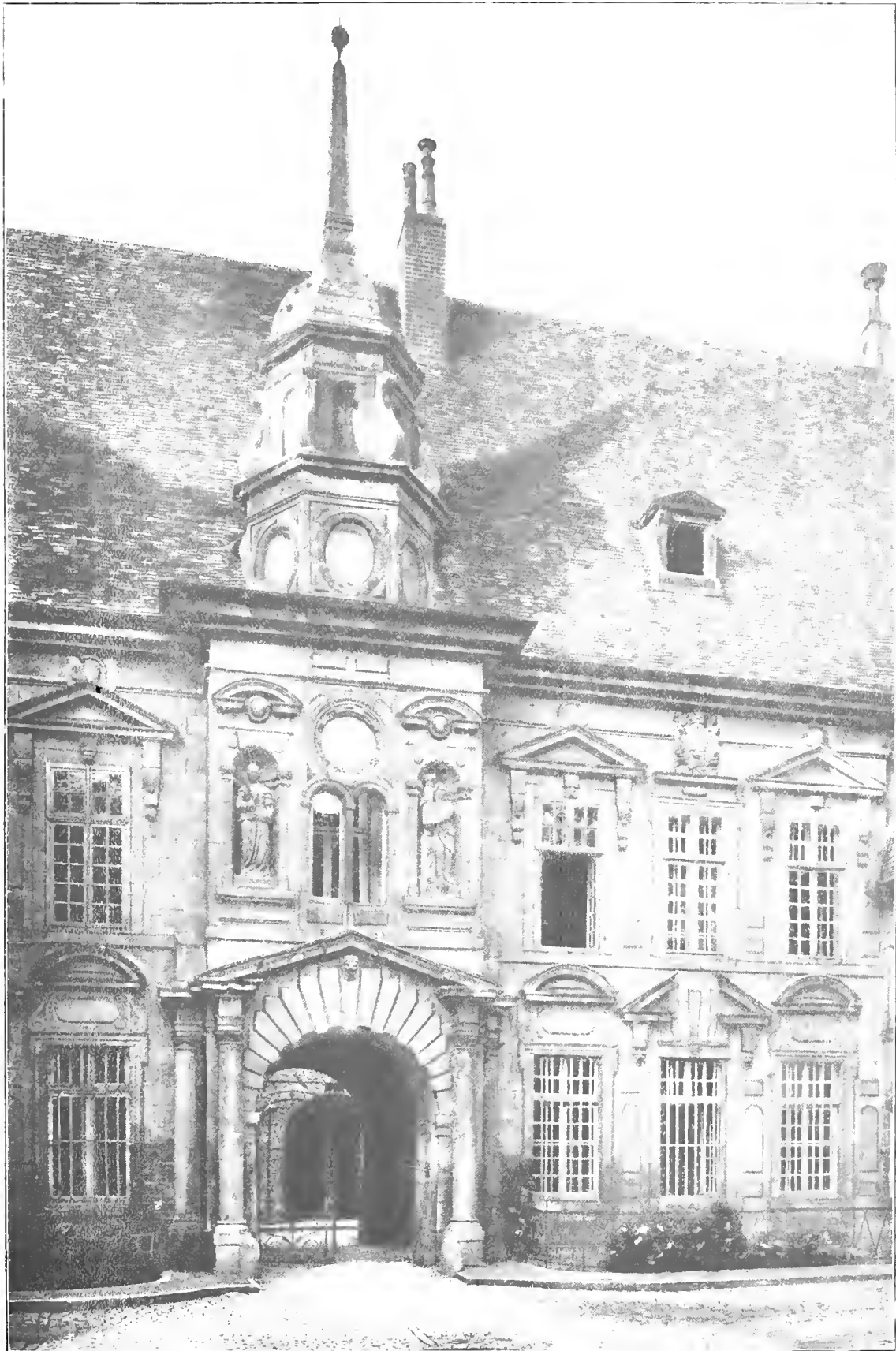
Sentence of twelve months in the second division was passed at Westminster Police Court last Friday on Charles Randall, aged 67, artist, for stealing etchings, value over £1,000, from the Students' Room of the Victoria and Albert Museum, South Kensington.

The death is announced of Mr. Fairfax Blomfield Wade-Palmer, F.R.I.B.A., on Saturday last, in his 68th year. He married in 1877 Harriet Ruth, daughter and co-heir of the late Robert Ruthven Pym, a partner in the bank of Coutts and Co., and, in conjunction with his wife, assumed the additional name and arms of Palmer.

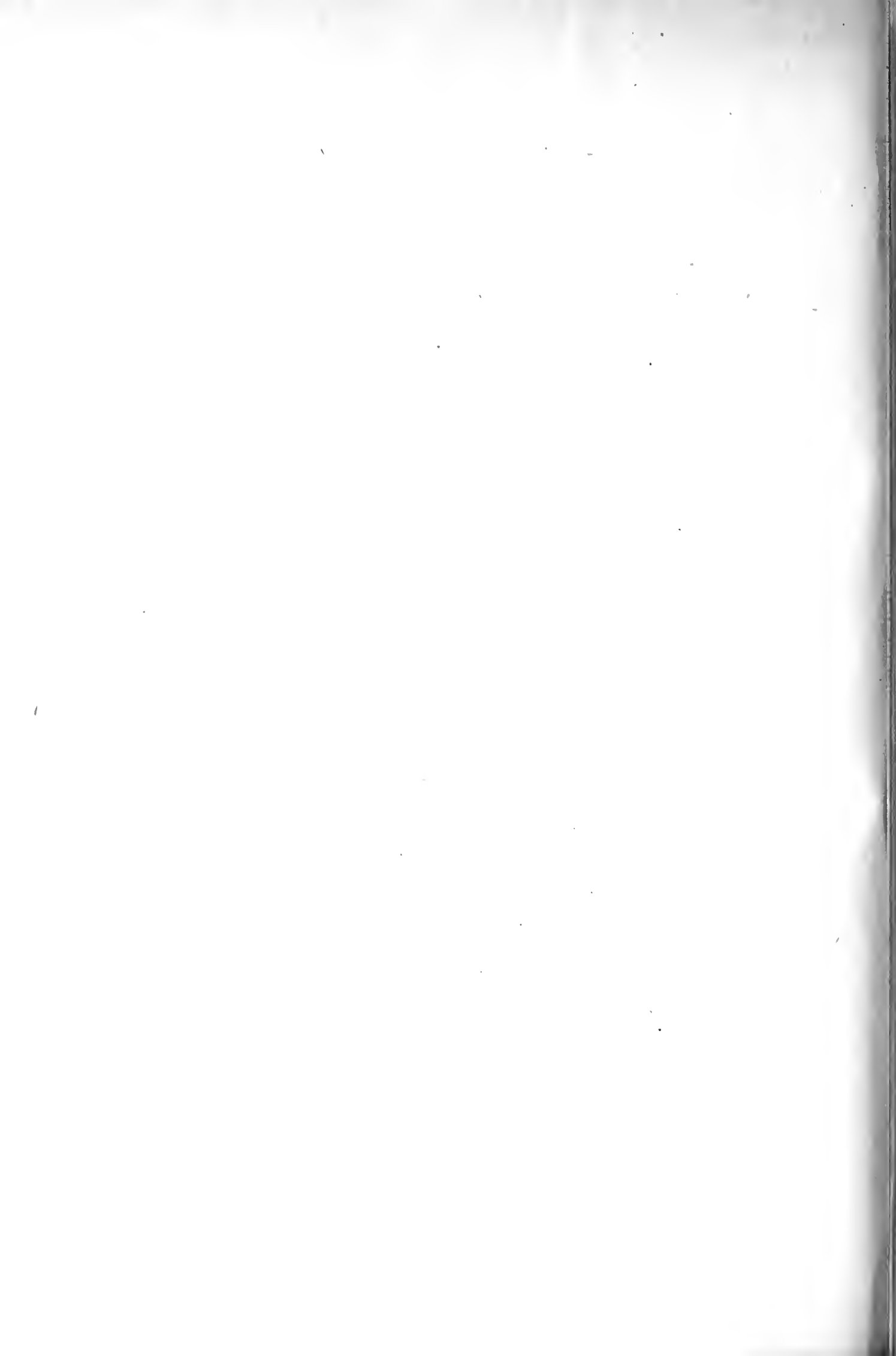
THE BUILDING NEWS, JANUARY 22, 1919.



OLD HOUSES, TOLEDO, SPAIN.
From a Drawing Exhibited at the Royal Society of British Artists by Mr. TREVOR HALTON, R.B.A.

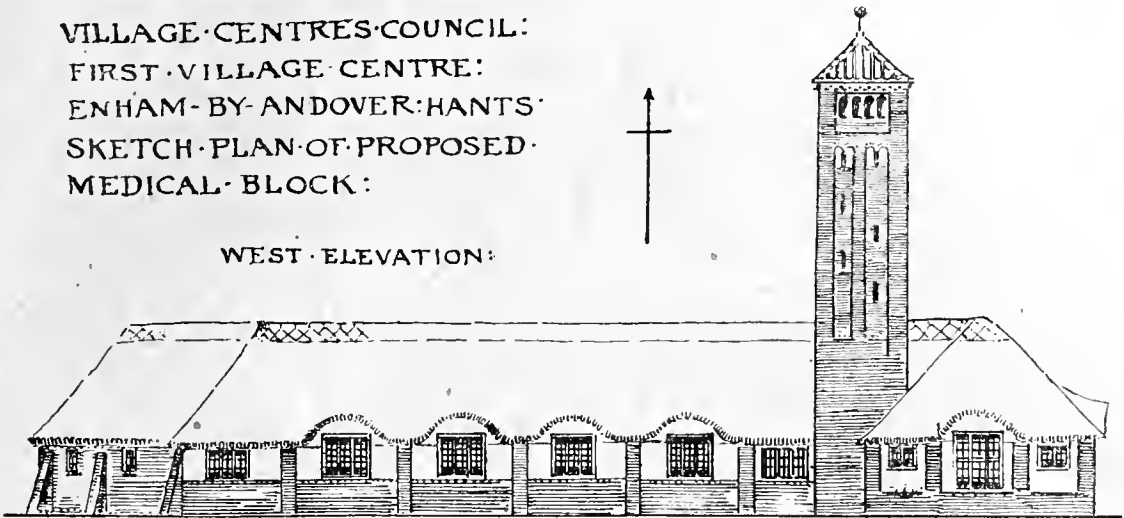


PALAIS DE JUSTICE, BESANCON, FRANCE.
HUGUES SAMBIN, of Dijon, Architect. 1582-1585.

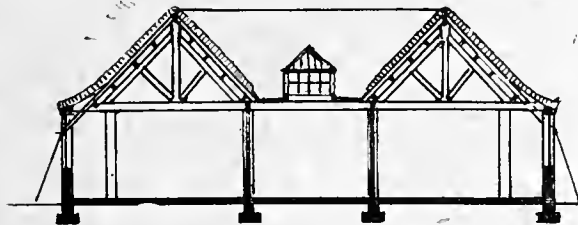


VILLAGE CENTRES COUNCIL:
FIRST VILLAGE CENTRE:
ENHAM-BY-ANDOVER HANTS.
SKETCH PLAN OF PROPOSED
MEDICAL BLOCK:

WEST ELEVATION:

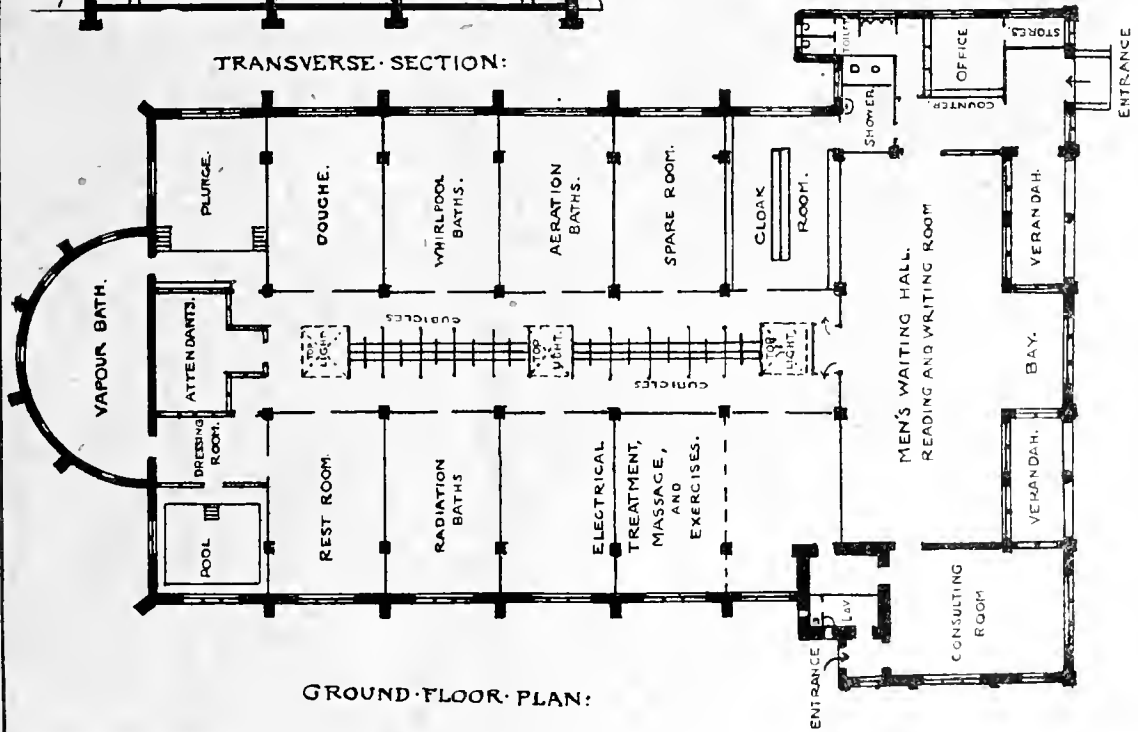


SCALE OF FEET



TRANSVERSE SECTION:

FRED ROWNTREE AND SON
AND RALPH W. THORP, 1918.
JOINT ARCHITECTS



GROUND FLOOR PLAN:

THE SECOND REPORT OF THE COMMITTEE DEALING WITH THE LAW AND PRACTICE RELATING TO THE ACQUISITION AND VALUATION OF LAND FOR PUBLIC PURPOSES.*

By EUSTACE HILLS (Barrister-at-Law).

(Continued from page 52.)

Passing on to betterment, the committee record their opinion that the principle of betterment and the principle of injurious affection are correlative, and that their proposals as to the principle of injurious affection are dependent on their proposals as to the principle of betterment.

The principle that persons whose property has been increased in market value by an improvement should specially contribute to the cost of such an improvement has been widely recognised, and though it finds no expression in the Act of 1845, it does find expression in various forms in a considerable number of Acts.

There can be little doubt that in the past there has been, and in the future there is danger that there will be, an undue restriction on development by compulsory acquisition, owing to the fact that in cases within the ambit of the 1845 Act promoters at present receive no contribution for an increase in market value of property directly caused by the authorised works, however large that increase may be.

The striking figures given in paragraph 35 of the report are an illustration of this.

If it be granted that the principle is approved, the difficulties begin in providing for its application, and an examination of the scheme formulated by the committee will repay close attention.

The general lines of the scheme recommended are that:—

1. As a general principle where the State or a local authority by a particular improvement has increased the value of the neighbouring land, the State or local authority should be entitled to participate in such increased value.

2. The principle of betterment applicable in the case of undertakings promoted by the State or by local authorities should also be applicable in the case of private undertakings authorised in the public interest, but the share to be granted to them in any betterment should be subject to an over-riding limit that it shall not exceed the actual cost of the construction of the undertaking.

3. The promoters when applying to the sanctioning authority for compulsory powers should schedule the limits of the area in respect of which it is proposed to claim betterment in respect of any property, and should specify the period at the end of which they propose that claims for betterment should be made.

Any person having an interest in land within the scheduled area should have a right of audience before the sanctioning authority as to such betterment.

4. Any person having any interest in land within the scheduled area should have the right at any time after the works, so far as they affect his property, have been completed, to apply to the promoters and, failing agreement, to the tribunal for the immediate assessment of the betterment (if any) of his property, which it is estimated will result from the undertaking, and, upon payment of the capitalised value of the betterment charge, or, if there be no betterment without payment, to obtain from the promoters a certificate of discharge of his land from liability to betterment.

5. Either the promoters or the owner should have the right to call on the Inland Revenue Department to make an official initial valuation for the purpose of assessing the betterment charge. This valuation should be supplied to both parties within a limited time, either party having the power to agree to or dissent from it, and if not dissented from by either party within a limited period, the valuation should be binding on both parties. The same procedure should be adopted for the final valuation. On

each occasion each party should, in default of agreement, have the right to have the valuation of the property, or its betterment, assessed by the tribunal.

At the hearing before the tribunal either party should have the right to call the Inland Revenue valuer as a witness and to cross-examine him on his valuation.

6. The principle of betterment should be applied to all interests in land having a market value.

7. In normal cases 50 per cent. should be the percentage of betterment to be taken from the owner.

8. Where the promoter is a local authority the sanctioning authority should decide, when sanctioning the scheme, whether the whole of the betterment should be retained by the local authority, or whether some proportion should be paid to the State.

9. In the case of a private promoter, if 50 per cent. of such betterment exceeds the actual cost of construction the excess should not be payable.

10. The annual charge should be 5 per cent. upon the capital value of the betterment assessed, or such other rate as may be determined by the sanctioning authority, and should rank next after rates and taxes.

1. The fact that promoters may already have statutory power to take land should not preclude them from applying to the sanctioning authority to sanction a betterment charge, and to delimit the area.

Perhaps the main features of this interesting and clearly drawn scheme are the inclusion of all neighbouring lands that are within the scheduled area, the proposal that the share taken by the State or a local authority of betterment created by their undertaking may be unlimited in amount, and the proposal that there shall be an annual charge on the capital value of the betterment assessed.

The principles of betterment and injurious affection are aptly stated in the report to be correlative, and the delimitation of area would be, in principle, the same in each case, and would be as necessary under the one scheme as under the other.

As to the share to be paid, it is recommended that in normal cases, whoever may be the promoters, 50 per cent. should be the percentage of betterment taken from the owner, but that it should be open to the sanctioning authority to grant to the promoters a larger proportion than 50 per cent., with the proviso that in the case of a private promoter, if 50 per cent. of the betterment exceeds the cost of construction, the percentage by which it exceeds should not be payable. Whether, where a local authority are the promoters they retain the whole, or what portion they retain, of the betterment is not of such immediate concern.

As regards the percentage paid by the owner, one can conceive cases in which the payment of 50 per cent. of the betterment to the State or a local authority would press hardly on him, and it is suggested either that the amount might be limited in relation to the cost of construction, or that the sanctioning authority should have a discretion to grant to the promoters a smaller proportion than 50 per cent.

As regards the annual charge, annual charges are not popular, but the only alternative would probably be that enhancement in value should be set off against the amount of compensation due on the arbitration. This would, if it were practicable, have some advantages. The betterment would be assessed at the same time as the compensation for land taken and for injurious affection, and could then be assessed as a capital sum.

It would, however, in many cases be a hardship to the owner to be compelled to pay the whole of the capital sum at once, and so long as he had the option, as he would have under the proposed scheme, of paying the capital sum, he would be sufficiently protected. The machinery of the scheme proposed provides a method of assessment of the betterment which is fairer to the parties and more comprehensive than a payment by way of set-off.

A possible alternative to betterment would be recoupment.

The opinion expressed by the committee that as a general rule the system of recoupment is not desirable, and that undertakers should not be encouraged to embark on land speculation, or the business of owning and managing property not required for the purposes of the undertaking, is strongly held by the reader of this paper.

The compulsory acquisition of land for public purposes is a valuable right, and beneficial to the community if carefully limited. It is believed that in this country, at all events, a general system of compulsory acquisition for purposes of recoupment would not be understood, would be resented, and as a general scheme would be difficult to carry out.

In undeveloped countries it may be the only means of inducing private promoters to embark on a far-reaching and expensive railway undertaking, but even where it has been carried into effect it is by no means free from criticism.

The sections in the Act of 1845 dealing with surplus lands are an instance of the jealousy with which the continued possession of lands not required for the authorised undertaking has been regarded, and whilst the opinion of the committee as to making the sales of such lands unrestricted is endorsed, it may well be advisable to retain the time limit imposed by that Act.

An exception must remain in the case of street improvements, and might be extended to include the reinstatement of displaced interests.

Effect could be given, and could only be given, to the recommendations, or any substantial portion of them, by the course suggested by the committee, the repeal of the Lands Clauses Acts, and their replacement by a fresh code.

COMPETITIONS.

BIRMINGHAM AND BOLTON HOUSING COMPETITIONS.—Members of the Society of Architects are requested not to take part in these competitions without first ascertaining from the secretary of the society that the conditions have been approved by the council.

COMPETITION FOR LAYING OUT THE PINEAPPLE AND FORDHOUSE FARM ESTATES FOR THE BIRMINGHAM CORPORATION.—The Competition Committee of the Royal Institute of British Architects request members and licentiates of the institute not to take part in the above competition until a further announcement is made that the conditions have been brought into conformity with the institute's regulations.

GRANGE-OVER-SANDS CINEMA COMPETITION.—Referring to a note on p. 415 of our issue of December 25 last, requesting members of the Society of Architects not to take part in this competition without first ascertaining that the Society had approved the conditions, the Secretary of the Society has received a note from the promoters, with whom he has been in negotiation, that on further consideration of the matter they decided to cancel the competition.

A subsidence of land at Victoria, near Ebbw Vale (Mon.), has caused considerable damage to property. It is attributed to a mountain slip and to a settlement due to underground workings and the recent heavy rains. So far the damage extends to thirty houses, and is estimated at over £13,000.

The Great Northern London Cemetery, which is situated six miles from King's Cross, is prepared to reserve a special site of 10, 15, or even 20 acres for the erection of individual and collective monuments, memorials, and cenotaphs in memory of men who have fallen in the war. Mr. Paul Waterhouse has been commissioned to lay out the ground in such a manner as to take advantage of its natural beauty.

The wages of men engaged in branches of the building trade in the Manchester district will be considerably advanced in a few weeks. Under the area scheme a meeting has been held between employers and men, and it has been agreed that a flat rate of 1s. 8d. per hour is to be adopted for craftsmen and 1s. 4d. per hour for labourers, with an extra 2d. per hour for hod carriers. This represents an increase of 2d. per hour all round on the list adopted in November.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND.—At a meeting of the Architectural Association of Ireland on January 9, with Mr. W. J. Burke in the chair, a paper on "The Cistercian Monastery and its Plan" was read by Mr. Harold G. Leask. The lecturer described the general arrangement and details of the plan of a typical Cistercian monastery, and the various practical considerations and details which affected the layout of the buildings. He showed, on the whole, a Cistercian abbey to be a piece of practical and commonsense planning, in thorough keeping with the order and regularity of the monastic rule of life, and in many ways far in advance of the other dwellings of the time. The lecture was illustrated by numerous lantern slides.

OFFICE OF WORKS SKETCH CLUB.—A lecture on "Oil Painting" was given on Monday last in the Conference Room, 61, Second Floor, by Mr. John Cooke, and members of other Government Departments were invited. An informal (monthly) meeting of members of the O.W. Sketch Club will be held on Monday, February 3, at 6 p.m., in Room No. 63, 64, Fourth Floor (opposite the Park entrance lift), for the private display of sketches and drawings by members, and discussion thereon. A loan exhibition of paintings, drawings, and works of art (other than members' work) will be opened on Monday, February 24, at 3 p.m., in the Conference Room (Room No. 61, Second Floor). The Honorary Secretary will be glad to receive offers of loans from officials of the Office of Works and their friends, with any particulars and approximate sizes for guidance in hanging. All loans will be insured by the committee. A symposium of the work of the proposed sectional groups of the club will be held on Monday, March 17, at 6 p.m., in the Conference Room (Room No. 61, Second Floor), with a view to the formation of an O.W. "Arts" Club. Discussions will follow on "Literature, Poetry, and Drama," opened by Sir Frank Baines, C.B.E., M.V.O.; "Architecture, Painting, and the Graphic Arts," opened by Mr. T. Wilson; and on "Music and Music Drama," opened by Mr. Wilfred Sanderson.

Efforts are being made to raise £3,000 for building a church institute in connection with Lockwood parish church, Huddersfield.

A scheme has been started to erect a war memorial infirmary, estimated to cost between £50,000 and £70,000, at Peterborough.

The Whitelaven Soldiers' Memorial Committee has decided that the proposed permanent memorial shall take the form of a new town hall.

The sum of £1,700 has been raised towards the fund to complete the tower of St. Peter's Church, Harrogate. A pre-war estimate for the work was £2,000.

The work of reinstating the railway line between Folkestone and Dover, which was blocked by the landslide in the Folkestone Warren in December, 1915, is to be begun at once, with a view to providing temporary connection between the two towns.

The devotional desk used by the King at the Royal Albert Hall in November has been presented by Messrs. George M. Hammer and Co. to the Congregational Union. The desk, with a suitable inscription, will be placed in the library of the Memorial Hall, Farringdon Street.

New Brighton Tower, the familiar landmark to ocean travellers entering and leaving the Mersey, is to be pulled down. Modelled on the Eiffel Tower, it is a steel structure, and was erected twenty years ago. Its height of 522 ft. from the ground level is rather more than that of the Blackpool Tower. The work is to be completed before Whitsuntide.

Mr. William Kelly, A.R.S.A., architect, and Mr. Harbourn Maclean, architect, have been appointed by the Aberdeen Corporation to act along with the borough surveyor, and in consultation, in so far as may be required, with the medical officer of health in advising the Housing Committee in preparing the necessary plans or sketches for the corporation housing scheme.

Our Office Table.

The François method of stopping the flow of water in underground fissures by the injection under superior pressure of liquid cement, has been tried on the lower levels of the East Rand Proprietary Mines, according to the *South African Mining Journal*. While the process has not fully realised the promises of the inventor, it has undoubtedly been proved that it is possible under ordinary conditions completely to seal up water-bearing fissures. The only failure so far has been at the bottom of an inclined shaft, which was being sunk on or about the reef plane. There numerous holes were drilled into the sides and cement injected, but it was found that it had not travelled any distance along the fissures. It is suggested in this case that the water was not contained in any one or two definite fissures, but in a considerable area of water-logged footwall shales, which had become partly decomposed, and which had the nature of a clay sponge.

At the meeting of the Rochdale Master Builders last week Mr. T. Howarth, the hon. treasurer of the North-Western Federation of Building Trades, in an interesting address on the outlook for the trade, speaking on the cost of home building, quoted the case of Cove, Farnborough, where a scheme was carried out by the Office of Works under war conditions. Eighteen acres of land were purchased at a cost of £139 per acre. Sixteen houses for foremen, etc.—with small hall, parlour, living room, scullery, bath-room, w.c., and three bedrooms—were built at £665 per house, against £250 in pre-war times; and for 234 cottages, with living room, small scullery (with bath in scullery), copper, w.c., larder, and three small bedrooms, the building cost was £490 per house, against £190 in pre-war days. Added to this was £82 per house for land development.

Mr. Edward Street, district surveyor for Bethnal Green, East, and South Bow, resigned his appointment as from October 31, 1918. Mr. Street had been a district surveyor for over 35 years, and upon his resignation the Building Acts Committee of the London County Council gave instructions for a letter to be sent to him expressing their appreciation of the manner in which he had always performed his duties. In order to fill the vacancy temporarily the committee appointed Mr. R. H. J. Mayhew, district surveyor for Hackney, East, to be interim district surveyor for Bethnal Green, East, and Mr. E. Walsh Knight, district surveyor for Bromley, to be interim district surveyor for Bow, South. The committee have agreed to the appointment by Mr. W. R. Davidge, district surveyor for Lewisham, of Mr. A. H. Verstage, district surveyor for Sydenham, as his deputy, Mr. Davidge having accepted a temporary engagement on Government work. Mr. Davidge was also deputy district surveyor for Greenwich and interim district surveyor for Woolwich, and for the conduct of the work in these districts, the committee agreed to the appointment of Mr. J. E. Mundell, district surveyor for Rotherhithe, as deputy district surveyor for Greenwich, and have appointed him interim district surveyor for Woolwich. As a condition of the appointments Mr. Mundell asked that he might be relieved of his work in Rotherhithe, and the committee accordingly agreed to the appointment of Mr. C. A. Daubney, district surveyor for Bermondsey, as his deputy. All these arrangements are temporary, and will not continue for more than six months after the date of the declaration of peace. The committee has re-appointed Mr. A. W. Tanner, interim district surveyor for the district of St. George-in-the-East, for another year. Mr. Tanner has passed the retiring age limit, but his services have been retained for several years past in a temporary capacity. The committee has extended for another year the period of office of the undermentioned district surveyors who have passed the retiring age limit:—Mr. F. Hammond (district of Hampton), Mr. H. Lovegrove (district of Islington, South, and Shoreditch), and Mr. F. W. Hamilton (district of Paddington). It has also consented under section 142 of the London Building Act, 1894,

to the appointment of deputy district surveyors in 11 cases in addition to the cases mentioned.

The thirty-ninth conference of the National Federation of Property Owners and Rate-payers was held at Lancaster last Friday, over 150 delegates being present from all parts of the country. The report stated that the question of housing remained prominent, and had required unremitting vigilance. The view was expressed that there would never be any permanent solution of the housing problem by Government doles and grants, whereby money was taken out of the pockets of one set of taxpayers to provide houses at less than their economic value to another set of taxpayers. Mr. Edwin Evans (London) was re-elected president, and among those selected vice-presidents were Messrs. E. Russell Taylor (Liverpool) and T. Holland (Wigan). A presentation of an illuminated address was made to Mr. Bertram B. Moss (Liverpool), in appreciation of his twelve years' services as secretary of the Federation.

The committee appointed by the Secretary for Scotland to consider what steps should be taken towards the utilisation of Edinburgh Castle for the purposes of a Scottish National War Memorial have agreed to recommend that the Castle should be utilised for this purpose, and that the memorial should take the form of a chapel to be used by all denominations for occasional services. They further recommend that the castle buildings should be used for housing an historical collection, and that there should be some form of permanent record of the names of Scots men and women who have fallen in the war. The precise scope of the historical collection has not been determined, but it is proposed that it should illustrate the history of the Scottish regiments, as well as deal with the recent war. Subject to the approval of the Secretary for Scotland being obtained of these proposals, sub-committees have been appointed to carry out the scheme. Sir Herbert Maxwell of Monreith is chairman of a museums sub-committee; Lieut.-General Sir Spencer Ewart, lately commanding the Forces in Scotland, of a records sub-committee; and Lord Balfour of Burleigh of a finance sub-committee; while the Duke of Atholl, the chairman of the main committee, will himself preside over the sub-committee on questions of building and reconstruction.

The use of concrete instead of bricks for house-building and drastic alterations in building by-laws were suggestions made at a meeting held at Queen Square last Friday in connection with the Design and Industries Association. The former proposal came from Dr. Faber, who urged a variety of types in dwellings to remove the monotony of appearance. He saw no reason why the simple four-walled cottage type should not be adopted; in brickmaking districts such cottages might be built of bricks, in other suitable districts of concrete. There would be little difference in cost.

At a meeting last Friday at Edinburgh the members of the Royal Scottish Academy unanimously elected Mr. J. Lawton Wingate president, in the room of Sir James Guthrie, who recently retired. No other name was submitted. Mr. Wingate, who is a native of Glasgow, is 73 years of age. He began exhibiting pictures while in his teens, painting then in water colour. His success led him to throw up his situation as clerk in a Glasgow commercial house and devote himself to art. He went to Italy for six months, and on his return studied for a brief period in Edinburgh. The new President's work has been almost exclusively confined to landscape painting. He was elected A.R.S.A. in 1879 and R.S.A. in 1886.

At an inquest held in the City of London last Wednesday, the Coroner (Dr. Waldo) commented on the increasing number of fatal lift accidents, remarking that that was the fourth he had investigated this year.

A clipping from *Punch* remarks:—"Small one piece houses of concrete," says the *National News*, "are now quite common in America." The only complaint, it appears, is that some of them are just a trifle tight under the arms.

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ADVERTISING.—For the erection of new entrance gates to the Chief Constable's house, for the Bucks. County Standing Joint Committee.

Webster and Cannon, 111 Iss. (accepted).

LIST OF TENDERS OPEN.**BUILDINGS.**

Jan. 29.—Erection of reinforced concrete wall abutting upon the South End main road river bank, South End, Boston. For the Roads and Bridges Committee of the Holland County Council. W. H. G. ne, Clerk to the Holland County Council, Sessions House, Boston.

Jan. 29.—Provision of partitions, etc., in the additions at the Manchester Education Offices, Deansgate, Manchester, for the Manchester Education Committee.

ENGINEERING.

Jan. 25.—Providing, laying, and jointing about a mile of 12 in. cast-iron pipes along the public road between Over Stenton and Easter Pittencher Farms in the parish of Kinglisse. For the Kirkcaldy District Committee of the Fife County Council.—David Beveridge and G. Lewis Atken, joint district Clerks, 230, High Street, Kirkcaldy.

PAINTING.

Jan. 29.—Cleaning, painting, and papering parts of the Town Hall, Loughborough. For the town council.—Specification, form of tender, and other particulars on application to A. H. Walker, A.M.I.C.E., Borough Engineer, Town Hall, Loughborough. Tenders to H. Perkins, Town Clerk, Town Hall, Loughborough.

Feb. 12.—Painting at various places.—For the Lancashire and Yorkshire Railway.—Forms of tender and specification may be obtained on application at the Engineer's Office, Hunt's Bank, Manchester. Tenders to R. C. Irwin, Secretary, Hunt's Bank, Manchester.

ROADS AND STREETS.

Feb. 5.—Work in connection with the deviation of the main road between Hfracombe and Combe Martin, near Bament's Wood.—For the Devon County Council.—Tenders to B. S. Miller, Clerk, The Castle, Exeter.

SANITARY.

JAN. 25.—Collection, removal, and disposal of house refuse from the urban district of Willesden (one year from April 1).—For the Willesden Urban District Council.—S. W. Ball, Clerk, Municipal Offices, Dyne Road, Kilburn, N.W.

Jan. 31.—Removal of house refuse and the emptying and cleansing of earth closets, cesspools, and ashpits in the parish of Dymchurch, Kent.—For the Romney Marsh Rural District Council.—W. Lamcraft, Clerk, Town Hall, New Romney.

Mr. Charles Henry Lawton, of 5, Clarendon Road, Alexandra Park, Manchester, mason and contractor, who died on November 6 last, has left estate of the gross value of £6,035 0s 8d., with net personalty £2,624 11s. 1d.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Ellingham House, 1, Arundel Street, Strand, W.C.2, and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

*Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects, small churches, chapels, houses, etc.—we have usually for more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

REFUSAL TO ADVERTISEMENTS.

Replies to advertisements can be received at the Office, Ellingham House, 1, Arundel Street, Strand, W.C.2, free of charge. If to be forwarded under cover to advertiser, an extra charge of Sixpence is made. (See Notice at head of "Situations.")

Cheques and Post Office Orders to be made payable to THE STRAND NEWSPAPER COMPANY, LIMITED, and crossed London County and Westminster Bank.

Advertisements for the current week must reach the office not later than 3 p.m. on Tuesday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by first post on Monday to secure attention.

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*Our Direct Subscription Agents for Australia are Messrs. E. T. Kibblewhite and Co., Printers and Publishers, 19, York Chambers, 105, Liverpool Street, Sydney, New South Wales; for Japan, The Maruzen Co., Ltd., 11-16, Nionbashi Tori Sanchoe, Tokyo who will receive Subscriptions at £1 10s. per annum on our account. Copies of the paper will be sent by us direct to the subscribers' address.

*The special rate to Canada is £1 10s. = \$7 00c. for 12 months, and 15s. = \$3 65c. six months. Our Direct Subscription Agents for Canada are Messrs. Sells, Ltd., 302, Shaughnessy Buildings, McGill Street, Montreal, who will receive Subscriptions, £1 10s. per annum, on our account.

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The charge for advertisements for "Situations Vacant" is Two Shillings and Sixpence for Twenty-four Words, and Sixpence for every Eight Words after. All Situation Advertisements must be prepaid.

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Telephone: Gerrard 1291.

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NOTICE: Yes.

Major B. Kindly send.

Prospero. "Architectural magic" is a little beyond us.

M. P. Hardly, we fear. See our review last week. We hope shortly to give two or three of the most suitable, if we can spare the space.

TO ARMS!

ROYAL ENGINEERS (VOLTS.), LONDON ARMY TROOPS COMPANIES.

Headquarters: Balderton Street, Oxford Street, W.1.

REGIMENTAL ORDERS No. 4, by LIEUT.-COL. C. B. CLAY, V.D., Commanding.

MONDAY, JAN. 27, to SATURDAY, FEB. 1.—Drills as usual.

C. HIGGINS, Capt. R.E., Adjutant.

Sergeant R. Lindsay, R.E., of Nettlebed, divisional surveyor for the Henley District of the Oxfordshire County Council, has, we regret to state, succumbed to pneumonia in France.

At the meeting of the Royal Institute of British Architects on Monday last, Mr. M. H. Baillie-Scott will read a paper on "The Making Habitable of Old Dwellings in Town and Country."

Mr. R. V. Hall, of the city engineer and surveyor's department, Wakefield, has been appointed borough surveyor and waterworks engineer of Abingdon in place of Mr. George Winship, who has recently resigned.

The Great Central Railway Company has decided to proceed with the rebuilding of the Grimsby Fish Market at a cost of £140,000. The new market is to be on the site of the old one, which is over a mile long.

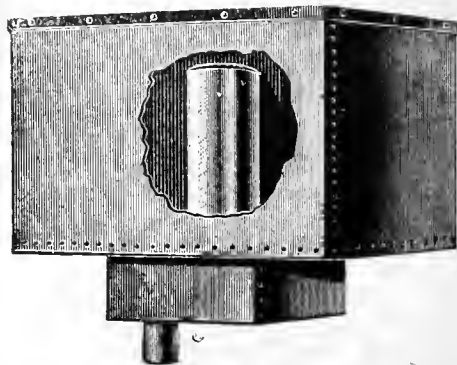
At a public meeting at Worksop it was resolved to enlarge the Victoria Hospital as a war memorial, and to erect a monument in Victoria Square, of octagonal design, surmounted by a German gun, with the names of the fallen inscribed on the base.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.	
Pennyfather Memorial Buildings, Barnet, Herts. Exterior view and interior of hall. Mr. W. Charles Waymouth, F.R.I.B.A., Architect.	

Strand, W.C.2

Morden College, Blackheath, Kent. West Front. Sir Christopher Wren, Architect. View drawn by Mr. T. Frank Green, A.R.I.B.A. From the office of Works Sketch Club Exhibition.
Government Housing Scheme, Well Hall, Woolwich. Houses in Dickson Road. Sir Frank Baines, C.B.E., M.V.O., I.M. Office of Works, Architect.
Midland Road Infants' School, Manningham, Bradford, Yorks. Elevation and plan. Mr. W. Williamson, Licentiate R.I.B.A., Architect.

Currente Calamo.

The conversion of large, awkward, old-fashioned empty residences into convenient modern flats is about the best thing that can be done just now in the way of building. For such work is both progressive and profitable. It is also a practical public service, for the housing of the middle classes is as pressing a problem as that of the working poor. Both in London and the provinces we find this conversion is going on everywhere. One would expect that even local authorities would do their utmost to encourage work of this kind for the benefit of their ratepayers and for the good of their own rates. Yet we find that Messrs. Cammell, Laird and Co., the shipbuilders, were recently summoned at Birkenhead for having unlawfully occupied a "new building" as a dwelling house before it was certified as fit for human habitation. The proceedings were based upon an old local Act of 1881, which doubtless has many counterparts about the country. The defendants admitted having converted two large old houses into flats, but they contended that the building stood exactly as it did before the Act was passed, and so no certificate was needed. The flats had a common entrance and a common staircase. They were under one roof and comprised only one building. The prosecution argued that each flat was a separate dwelling house and that each set of rooms required its own sanitary arrangements and so must be certified separately before being let. The magistrates took this view and fined defendants £1, but they were willing to state a case for the defendants, who gave notice of appeal to the High Court. So we shall, in time, hear more of the matter and of our old friend the "new building." Meanwhile, owners and builders must go on doing their best to meet a pressing public want in the way of this conversion and modernising of these old, unlettable large houses, and keep as clear as they can of local officialism and its hampering fussy interference.

No more urgent task follows upon the demobilisation of the forces than the reinstatement in civil life of the soldiers and sailors. The number of men to be dealt with in this country alone makes the labour gigantic; but the machinery exists for performing it, and it only remains for

intending employers and employees to avail themselves of their opportunity. The Employment Exchanges, assisted by the Local Advisory Committees, which represent equally the interests of both parties in every neighbourhood, have the organisation ready for use. The staffs of the Exchanges have been considerably strengthened in order to meet the extra strain thrown upon them. It is not generally known that branches have been set up to deal with discharged men only, in a great number of cases special sections for disabled men having been established. As far as possible, the work in these new additions to the Exchange system is carried on by men in the same position as those whom they are helping back to civil employment. Discharged men, with no small proportion of disabled among them, superintend the placing of discharged and disabled men. It has been found that the loss of an arm, of a leg, of two legs, and even of eyesight, is no insurmountable obstacle to the performance of efficient work, given employers who will employ the man, and the Exchanges which make use of such men are patent examples of the fact that war, even when it has dealt serious bodily injuries, does not unfit the fighter for successful life as a civilian.

There is a scheme afoot, backed by some wealthy industrial leaders, to establish a great central emporium of British industries in London, on the lines of the New York great Bush buildings and docks, a 40-storey building, showrooms in which are let to all the manufacturing firms, who have their goods on exhibition for wholesale men to inspect. In this way the middleman and agent are eliminated. It is estimated that the initial stages of the scheme will cost £3,000,000, and the project is so far advanced that the promoters have acquired an option on a large site for building, and architects' plans are being made. The criticism levelled against the scheme is that, unlike America, British manufacturers and retailers will not buy from public exhibitions, but prefer to send travellers round the warehouses. That may have been so in the past, but the drawback to all exhibitions of the kind contemplated has been their brief duration. A permanent exhibition might soon outlive old-fashioned reluctance of the kind hinted at.

The obituary notices last week of the late Mrs. Pollen made singularly brief references to her distinguished husband, a very old friend of and contributor to this journal, and we read with pleasure a note from Mr. James Britten, K.S.G., in the *Westminster Gazette*, of John Hungerford Pollen, whom all who knew him had an affectionate regard for. Born in 1820, Pollen went to Christ Church, Oxford, at the age of seventeen, and speedily came under the influence of Newman, which was to colour his life. After a period of foreign travel he returned to Oxford, where he was ordained deacon in 1844, and took up parish work in the Church of England. In 1847-51 he was associated with St. Saviour's, Leeds—built by Pusey and a pioneer of the High Church movement; and when the clergy of that church seceded to Rome carried on the work there for a time single-handed. In 1851 he became Proctor of Oxford University; towards the end of 1852 he was received into the Catholic Church at Rouen by the Archbishop. After a year's travel in Italy, during which his artistic talent found full scope, he returned to England, and was invited by Newman, then Rector of the Catholic University, Dublin, to become Professor of Art there, and later to undertake the decoration of the University Church, which remains as a monument of that abortive scheme and as a tribute to Pollen's artistic skill. In 1855 he married Miss Maria La Priaudaye. From 1864 to 1876 Pollen was official editor of the Science and Art Department at South Kensington, in connection with which he published numerous works and filled many important posts. He resigned this position to become private secretary to the late Lord Ripon. Mr. Pollen continued his artistic and social work, taking part also in various Catholic undertakings until his death, which occurred suddenly in London in December, 1902. Pollen's biography, which contains numerous examples of his art work, was published by one of his daughters in 1912, with a preface by his widow. Prefixed to it is an extract from a letter written to him by Newman in 1869: "Everyone who knows you must wish you success in any object you have at heart, for the love he is sure to have for you."

The second edition of the excellent "Handbook on Canals," issued by the Canal Control Committee, whose head-

quarters are 7, Princes St., Westminster, S.W.1, is now ready, and can be had for sixpence of any of the Government Stationary Offices, or through any bookseller, to order. The total length of the important canals in England and Wales is over 2,500 miles, of which some 1,025 miles are controlled by the Railway Executive Committee, and some 1,226 miles by the Canal Control Committee, making 2,251 miles under Government control at the present time. To enable manufacturers and traders to ascertain the communication by canal between any two points and to get into touch with the carriers in their districts, the maps given and the lists of the principal carriers, given in Appendices 4 and 6, will be useful. In cases where a manufacturer may desire to purchase boats and run them himself, he will be able to obtain such information as he may require from the local Sub-Committee, with whom he should communicate. Except in a few cases, the canal companies are not carriers, their business being confined to keeping the waterways in a good navigable state of repair and to the collection of tolls, as owners of the waterway. The carriage of goods on the canals is mainly undertaken by firms of carriers owning a fleet of boats, tugs, etc., and also by numerous carriers, who own only one or two boats and a few horses, and who, generally, carry short-distance traffic only. Canal carriers are known as "Bye-Traders," as distinct from canal owning companies which also carry. A list of the carriers on canals is given in Appendices 4 and 6. In addition to the canal map of England, a map showing the canals of Ireland is also included in this edition of the handbook.

Whatever differences of opinion exist with regard to housing, and the intentions of the Government and others concerned, all are agreed that the details of fittings, labour-saving devices, and aids to personal cleanliness must have every care and attention at the hands of those charged with their design and erection. They are little likely to get it if the necessary appliances are procured from the vendors of the rubbish stocked by the cheap ironmongery stores, and it is imperative that architects, when specifying, should not fail to insist on resort to firms whose reputation has been well earned by years of successful study of real requirements and how to secure them. One of the foremost of these, the Leeds Fireclay Company, of Wortley, Leeds, and 167, Strand, W.C.2, has just issued a very timely booklet, entitled "A Few Practical Notes," which architects, builders, and all members of local authorities will do well to read. It deals in a practical fashion with baths, sinks, and closets, grease and grease extractors, fireplaces and smoke prevention, and other fittings and materials, in regard to which failure is almost certain, if the embarrassing idiosyncrasies of too many of the likely tenants of the new houses to be erected are not carefully foreseen and studied. In industrial dwellings all fittings must be simple, fireproof, and of the

best quality of material, or the repairs bill will be a constant and formidable one. The avoidance of trouble of this kind will in most cases be secured if the hints given in the booklet under notice are studied.

SIR ASTON WEBB, P.R.A.

The unanimous election of Sir Aston Webb as President of the Royal Academy, last week, will certainly add to the reputation of that body as the official representative of English Art. We need hardly say that every reader will heartily congratulate the new President, whose acknowledged standing as the first of British architects is seconded by every qualification a President of the Royal Academy should possess. Still full of vigour—and, although in his seventieth year, as hard a worker as any of the many who give the lie to the slackers who talk about "too old at sixty"—genially tactful, a good speaker, and an excellent man of business, we are confident Sir Aston will fill the chair in a fashion that will recall the reputation of Sir Frederick Leighton, whose fame will long survive as the most brilliant President of our age.

We are glad, of course, that the new President is an architect. It was certainly time that Architecture should receive some more emphatic recognition that our art is not merely one of but the chiefest among those included in the Academy's title. We may, indeed, confess, without a blush, that James Wyatt, the only other architectural President of all who have filled that position, including Sir Joshua Reynolds, who was selected in December, 1768, when the Academy was incorporated, rather more than a century and a half ago, was hardly a man of whom we are proud. His election was never confirmed by George III., who is believed to have resented Benjamin West's rather fulsome eulogies of Napoleon Bonaparte after the Peace of Amiens. West, however, who had resigned, is said to have confessed that he had "made a fool of himself," and was reinstated in 1806: so that, presumably, although Wyatt certainly was regarded as President by his contemporaries, his position in the history of the Academy is analogous with that of other potentates whose abdications have followed hard on their grasp of sceptres they failed to hold.

We are not so sure that Sir Aston's election is due to the recognition, "tardy" or otherwise, of the fact that the "Cinderella of the Arts," as one daily contemporary styles her, should take her due place among the immortals at Burlington House. The rumours for some days before the election that the choice of Sir Aston was certain were coupled with others to the effect that the selection of a painter was unlikely because the only obviously eligible candidates would not offer themselves. It is said that in the ordinary way Sir Frank Dicksee would have succeeded Sir Edward Poynter but for the feeling that presidents of the Grant and Eastlake sort were a little out of date. It is also said that some of the Academicians wanted a sculptor, perhaps as another "tardy" recognition of an art which has hardly fared better at the hands of the monopoly of the painters than our own. It is, to say the least, quite as possible that the more vigorous Associates, from whose ranks of late years have come men like Sir William Orpen, Sir John Lavery, and others who have certainly brought more distinction to the Academy, though only Associates, than most of the

present-day Royal Academicians, while not hostile to reforms badly needed in themselves, are indisposed to co-operate merely as passive assenters, but are resolved to have equal powers with the Academicians in regard to shaping any sort of changes. Much the same state of things exists at the R.I.B.A., where democracy, as indeed everywhere else just now, is demanding much, and failing to get it is making hash of much that is offered it by peace-makers whose eulogies thereof in the abstract, though fervid, are not particularly successful as inducements to consent to mere passive participation in reforms or the vagaries some crude democrats regard as such.

Much more to the purpose, perhaps, is the hearty hope that Sir Aston Webb's presidency may be marked by a broader extension of the activities of the Academy than at present prevails. He is not exactly a "Rest and be Thankful" man, and the brilliant story of his past record bears witness to persistence in the face of difficulties that converts obstacles into stepping-stones, and disarms mere factious opposition as effectively as it soothes the scruples of the inert. Anyhow, all architects, we are convinced, will rally to his support in the pursuance of the highest interests of the Arts generally, and of the best methods of administering and extending the meagre aids extended to those who seek to cultivate them. In this we are encouraged to hope the co-operation of the outside public will not be lacking. They, at any rate, we have reason to know, have realised that his work for the nation has been good, and that it has been no fault of his that, as in the case of the Admiralty Arch, the spoiling of its effect by its surroundings has been no fault of his. They have also not failed to note that, in the pursuance of real public improvements, such as the opposition to the perpetrating of that eyesore, the Charing Cross bridge, the relief of the Thames from its sewage, and his sane advocacy of national town-planning, in contrast with the fantastic conceptions of some of its noisier friends—rather perhaps of themselves as a fine advertisement, than of it—he has maintained the true attitude of the genuine reformer, that of patience and courtesy, which without sacrificing an iota of principle conquers by intelligent endurance.

Sir Aston Webb is the tenth president since Sir Joshua Reynolds, appointed when the Academy was incorporated on December 10, 1768. Sir Aston was born in London in 1849, and became president of the Architectural Association in 1884 and of the Royal Institute of British Architects in 1902-4. He was elected A.R.A. in 1899 and R.A. in 1903. He was awarded the Royal Gold Medal for Architecture in England in 1905, and was American Medallist in 1907. His works include the new front to Buckingham Palace, the surroundings for the Victoria Memorial there, the new Admiralty Arch, the Britannia Royal Naval College, the completion of the Victoria and Albert Museum, the restoration of St. Bartholomew-the-Great, E.C., the French Protestant Church, Soho, the Grand Trunk Railway offices in Cockspur Street, and other works too numerous to mention. Sir Aston, whose father was Edward Webb, engraver and water-colour painter, married, in 1876, Marian, daughter of the late Edward Everett, F.R.C.S.

Mr. W. I. Harrison (75), a retired builder, passed away at Wellingborough on Friday week. He was a director of the Corn Exchange Co. and a sidesman of the parish church.

Our Illustrations.

THE PENNYFATHER MEMORIAL BUILDINGS, BARNET, HERTS.

This institution was erected a short time since. The exterior view now reproduced was exhibited at the Royal Academy last summer. The accommodation, a hall to seat 450 adults. The interior of this room is also illustrated. A kitchen is attached to it with rooms for men and women's clubs adjoining, also billiard and reading rooms. The buildings occupy a site in the grounds belonging to the church and vicarage, and the hall serves as a parish room, as well as Sunday-school. The church is of flint walling with stone dressings, and the vicarage is built in brick. These buildings, therefore, are carried out in all three of these materials in order to harmonise with the previous work. The late Mr. Dumes, of Barnet, was the builder, and his successor, Mr. W. Harrison, was largely responsible for the execution of the work. The roof timbers, and practically all the internal joinery, are of British Columbian pine. Mr. W. Charles Waymouth, F.R.I.B.A., of 104, High Holborn, is the architect.

MORDEN COLLEGE, BLACKHEATH.

(FROM THE OFFICE OF WORKS SKETCH CLUB EXHIBITION.)

Morden College was endowed and erected by Sir John Morden, Baronet, a merchant of Bishopsgate Street, and member of the Turkey and East India Companies, who appears to have had a considerable and lucrative trading connection with the Levant. The architect was Sir Christopher Wren, and Edward Strong is mentioned by some authors as the Master Mason responsible for carrying out its erection. There is a tradition that Sir John's instructions to Wren were to base his design upon that of Bromley College, at that time a recently completed foundation of a similar nature, of which the founder of Morden College had been trustee and treasurer. The illustration given, from a drawing by Mr. T. Frank Green, gives sufficient indication of the external design, although the side and rear elevations are less ornate. The internal court, with its colonnaded walks, is a good example of the work of the period, and the chapel has excellent oak furnishings, with some good carving. The main building was commenced in 1695, and completed, except perhaps some decorative interior work, five years later.

GOVERNMENT HOUSING SCHEME, WELL HALL, WOOLWICH.

In our issues of November 27 and December 4, several photographs, plans, and elevations to scale, were reproduced from Sir Frank Baines' working drawings for some of the cottages erected at Well Hall, under the direction of H.M. Office of Works. In the earlier number will be found a descriptive article of the houses already built. To-day we give the geometrical drawings of a block erected in Dickson Road, having a progressive frontage gradually projecting by set-offs from left to right, and including in this manner a row of seven tenements of picturesque outline only possible on an ample site or where the roadway assumes a curved line for the forecourts. In our issue for December 25 more plans were given, these being larger blocks erected on a balanced lay-out.

MIDLAND ROAD INFANTS' SCHOOL, BRADFORD.

This school has recently been erected in the Midland Road, Manningham, for 260 infants. The front aspect is south-east, and entrances are provided from Midland Road and from Bateman Street. An attempt has been made to economise as much as possible in the general planning, and the school is not provided with a central hall. In place of this two of the class-rooms are so arranged that they can be thrown into one room by sliding back the collapsible screen forming the division, and this room is used for assembling and dismissal exercises. The babies' room, at the east end of the building, occupies a corresponding position to the open-air class-room. This is fitted with collapsible screens on the east and west sides, and abutting another class-room is a play shed, suitable for easy conversion into a class-room should the necessity arise. A corridor runs the whole length north of the school. The cloakrooms, lavatories, and teachers' room are placed centrally out of this corridor, and a separate cloakroom, w.c., with lavatory, is provided for the babies. The school is cross ventilated, the corridor being kept low, and the cloak and other rooms being covered with a flat roof. The openings to the class-rooms on the front elevation have glazed screens, which extend to the floor and doors open outwards. Externally the walls are faced with inside wall-stones up to the sill level, and above this are built in brick finished with rough cast. The internal walls have redwood dados to the class-rooms, finished above in plaster, and the corridor, cloakrooms and lavatories have glazed brick dados. The furniture is of a loose, light, and portable character to facilitate quick removal, which is particularly necessary in the two class-rooms previously referred to being used for assembling. Garden plots have been laid out for the use of the children, and the west portion of the site not used for playground has also been planted, and this gives a very pleasing setting to the school. Mr. W. Williamson, Licentiate R.I.B.A., is the architect.

OBITUARY.

We regret to announce that Mr. J. Byam Shaw, the artist, died in London last Sunday. He caught a chill when on duty as a special constable, and complications ensued which caused his death. Mr. Shaw was taken ill with neuralgia about a month ago, and a fortnight later took to his bed. He became unconscious almost immediately, and slept continuously till he died. Several doctors saw him at intervals, and diagnosed his disease as encephalitis—inflammation at the base of the brain, allied to sleeping sickness. Dr. Kenneth Fraser Lund, who was in regular attendance, said: "Mr. Shaw's illness was induced by over-exposure to cold and wet in the discharge of his duties as a special police constable." Mr. Byam Shaw was forty-six a few weeks ago. His first picture, "Rose Mary," suggested by Rossetti's poem, was hung at the Royal Academy when he was twenty-one, and among his best-known later pictures were "Love the Conqueror" and "Christ the Comforter."

At the first meeting of the executive committee of the Kent War Memorial Fund it was decided that the primary object should be to raise a memorial in monumental form; that advice should also be given to parishes as to designs for local memorials; and, if funds permit, assistance should be given in specially deserving cases of women and men of his Majesty's services who have suffered by the war. The committee have secured the assistance of Mr. Herbert Baker, F.R.I.B.A., as honorary expert adviser. The amount aimed at is £50,000.

SURVIVING CITY HOUSES BUILT AFTER THE GREAT FIRE.*

BY WALTER GEORGE BELL, F.R.A.S.

Few people realise that numbers of houses still stand in the City which date from the great period of rebuilding after the Fire of London in 1666. Some at least are familiar, like the "Chained Swan," in Cheapside, No. 37, which bears a tablet stating that it is the only house there that escaped the flames. This is one of the untrustworthy legends of the City, for the old brick house which attracts the attention of passers-by fulfils the requirements of the Rebuilding Act of 1667, and stands upon the site occupied before the Great Fire by the "Nag's Head," a famous tavern it in no way resembles. Cheapside was among the first of the City streets to be restored from the ruins, and there is reason to believe this is the earliest of the surviving houses built after the Fire, in 1667-8.

Three dwarf houses in Cheapside, sheltered by the famous plane-tree at the Wood Street corner, are known to everyone. Each consists of two rooms only, a shop the size of a box below and a room above. They have stood there more than 230 years, having been built in 1687. They owe their place on so important a frontage as Cheapside to the extreme shallowness of the site, only a few feet, which made larger buildings impossible. As long ago as the year 1401 the parishioners of St. Peter Chepe obtained leave to build a "long shoppe" on this church ground, and these tiny structures—the smallest houses in all the City—are its successors. Another Cheapside house of the Great Fire period is No. 73, known as "the Old Mansion House," because so many Mayoralties were kept there. It is said to have been built for Sir William Turner, Lord Mayor, 1668-9, but its original front is concealed by much over-elaborated ornament of later date. Within is a magnificent oak staircase.

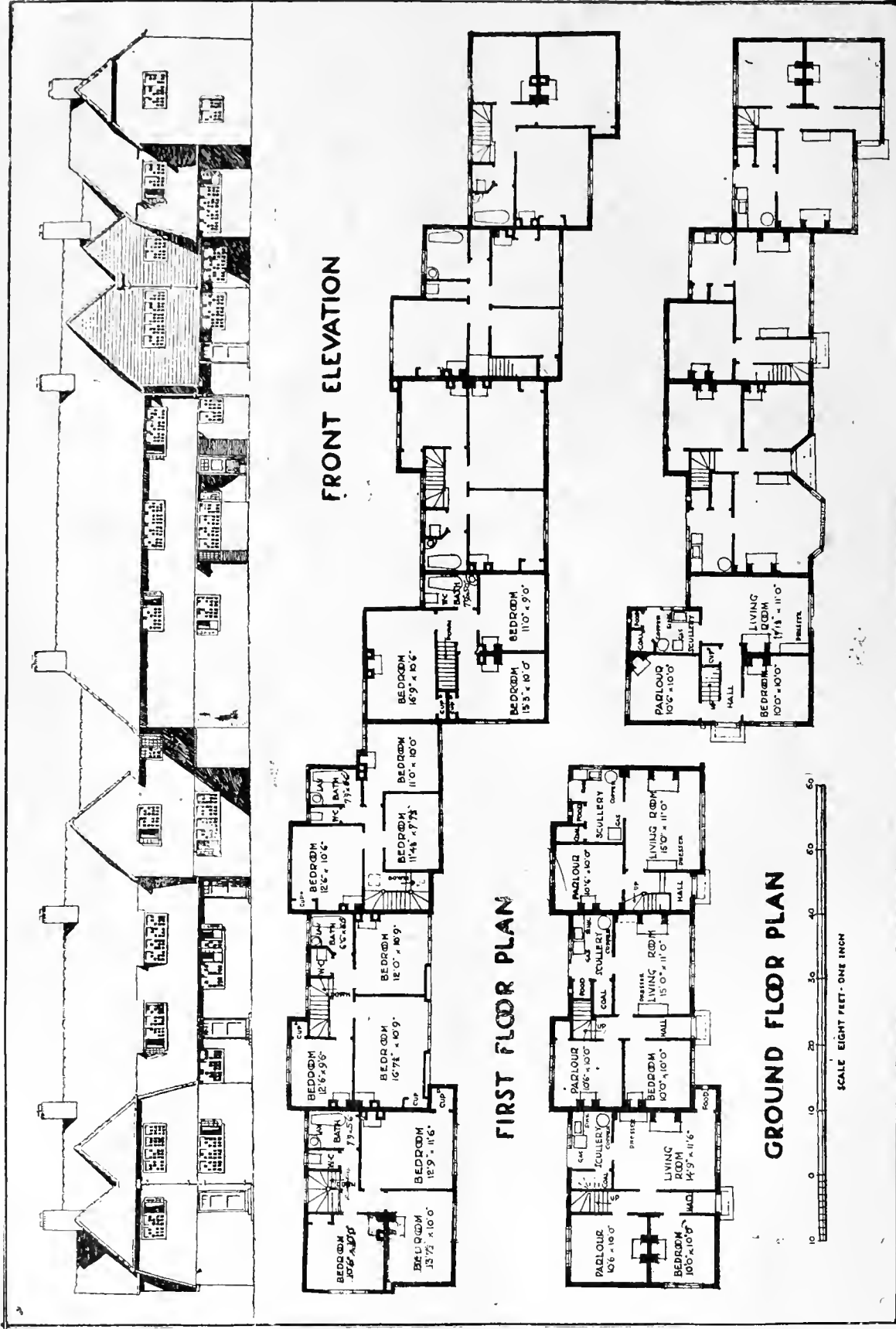
The Deanery of St. Paul's was built by Sir Christopher Wren for Dean Sancroft at a cost of £2,500, and was finished by 1670. The Dean, in order to raise the funds, was allowed to sell the larger part of the hitherto spacious Deanery garden; hence the house to-day is cooped in on every side.

For the rebuilding of the College of Arms, destroyed in the Fire of London, Charles II. granted a brief to the Kings and Officers-at-Arms to beg funds from the nobility and gentry. The nobility and gentry were not generous. They subscribed in all only £700. Fortunately the Herald's themselves were more public-spirited, giving largely from their fees and private fortunes, and the main structure of the college, which is attributed to Wren, was completed in 1682.

One fine example of the old City's merchant's house, "of the greatest bigness," four storeys high, is No. 34, Great Tower Street, circa 1670-72. It has been maintained in perfect preservation, and still has all the appointments of a wealthy merchant's residence, with bold carvings in the dining-salon and ante-chambers, and age-browned wainscot. A plain brick house at the Knight-riding Street and Godliman Street corner preserves a timber framework in its lower storey, this part having probably survived the flames and heat of the Great Fire, after which a careful builder raised his superstructure above it. Other City houses of the after-Fire period, easily recognised by their characteristic exteriors, are in Watling Street, in Crane Court, Fleet Street (one bears the date 1671); in Pinner Court, Fleet Street; Wardrobe Place, Doctors' Commons; in Milk Street, Amen Corner (the Canons' houses); St. Swithin's Lane; Aldermanbury, and elsewhere.

The Works Committee of the Westminster City Council recommend that a proposal made by a correspondent, that the name of Vanover Square should be changed to Roosevelt Square, as Mr. Roosevelt was married at St. George's Church, in the square, be forwarded to the L.C.C., as the street-naming authority.

*From a Paper read at the London and Middlesex Archaeological Society, Bishopsgate Institute, on January 22nd.



FRONT ELEVATION

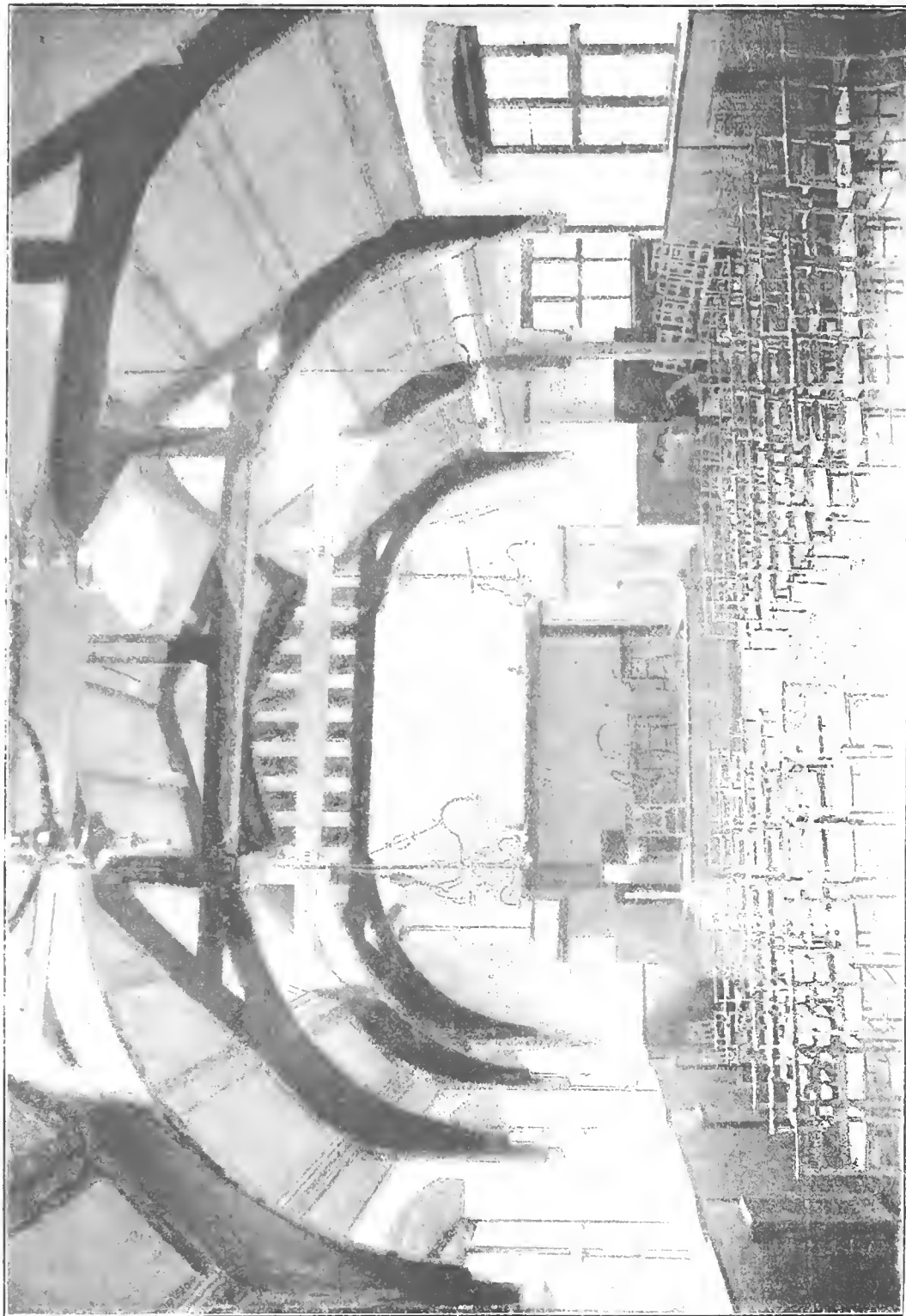
FIRST FLOOR PLAN

GROUND FLOOR PLAN

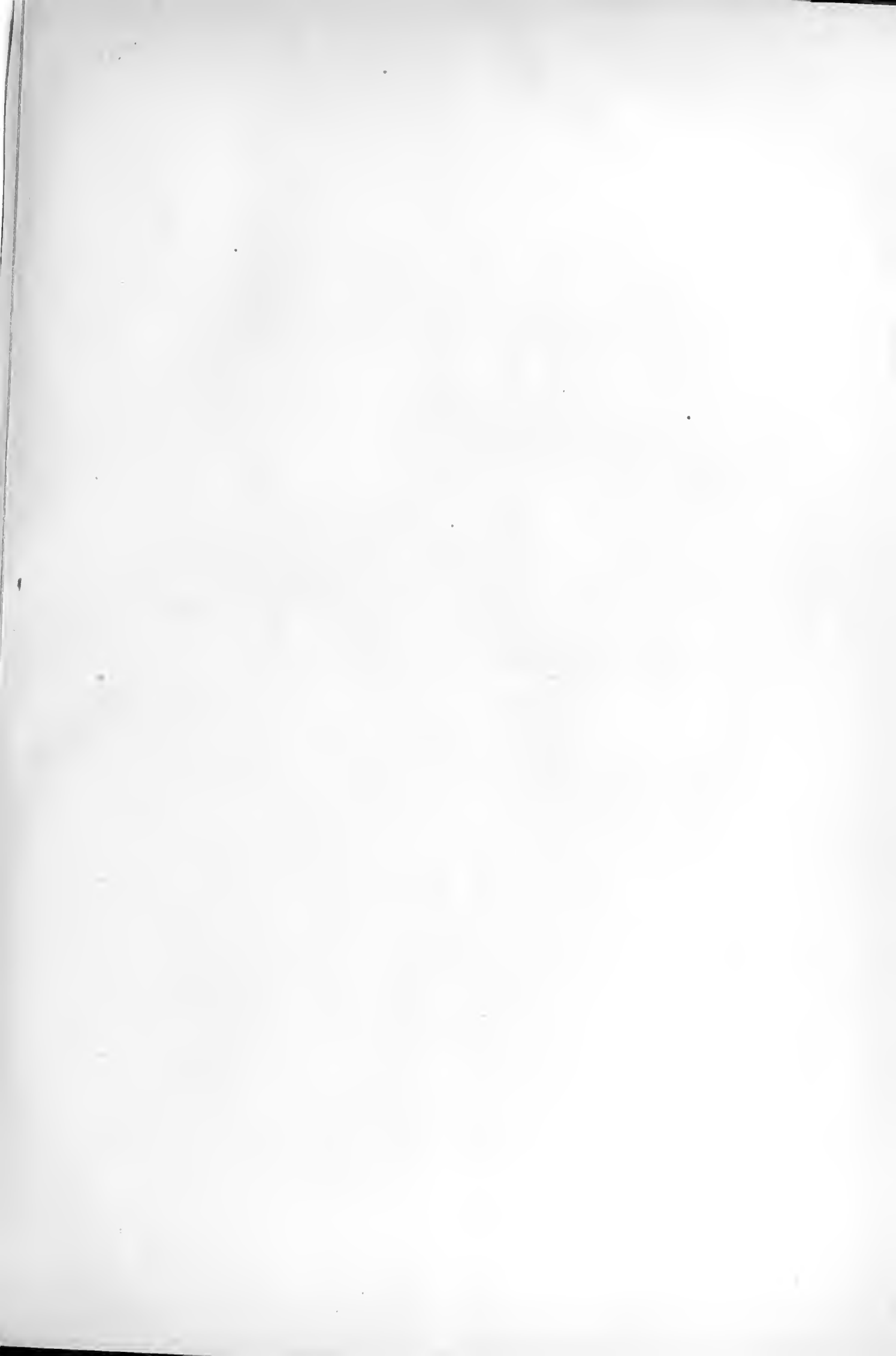


GOVERNMENT HOUSING SCHEME, WELL HALL, WOOLWICH: HOUSES IN DICKSON ROAD.
 Sir FRANK BAINES, C.B.E., M.V.O., H.M. Office of Works, Architect.

THE BUILDING NEWS, JANUARY 29, 1919.



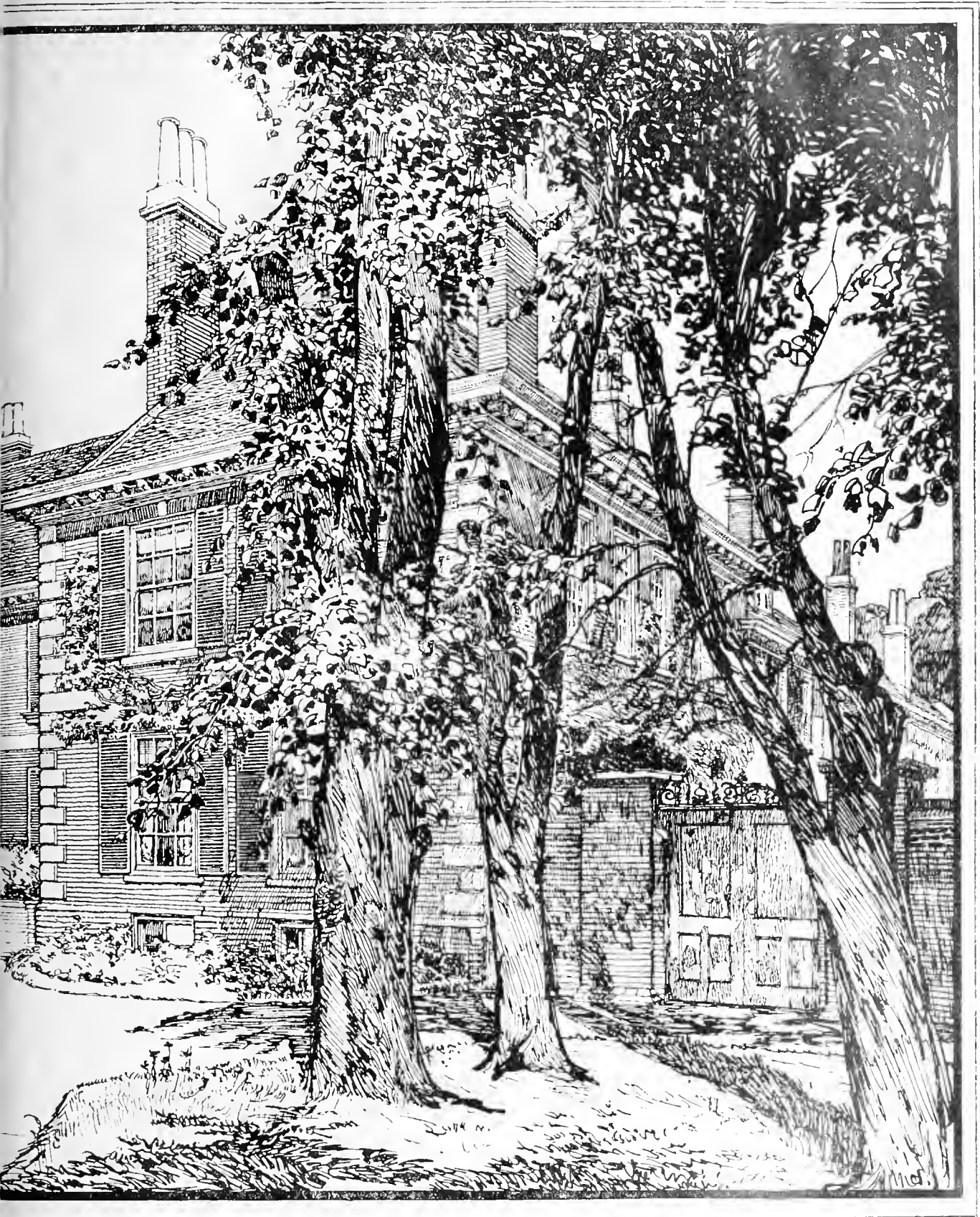
PENNYFATHER MEMORIAL BUILDINGS, BARNET, HERTS : THE HALL.
Mr. W. CHARLES WAYMOUTH, F.R.I.B.A., Architect.



MORDEN COLLEGE
BLACKHEATH: KENT
THE WEST FRONT

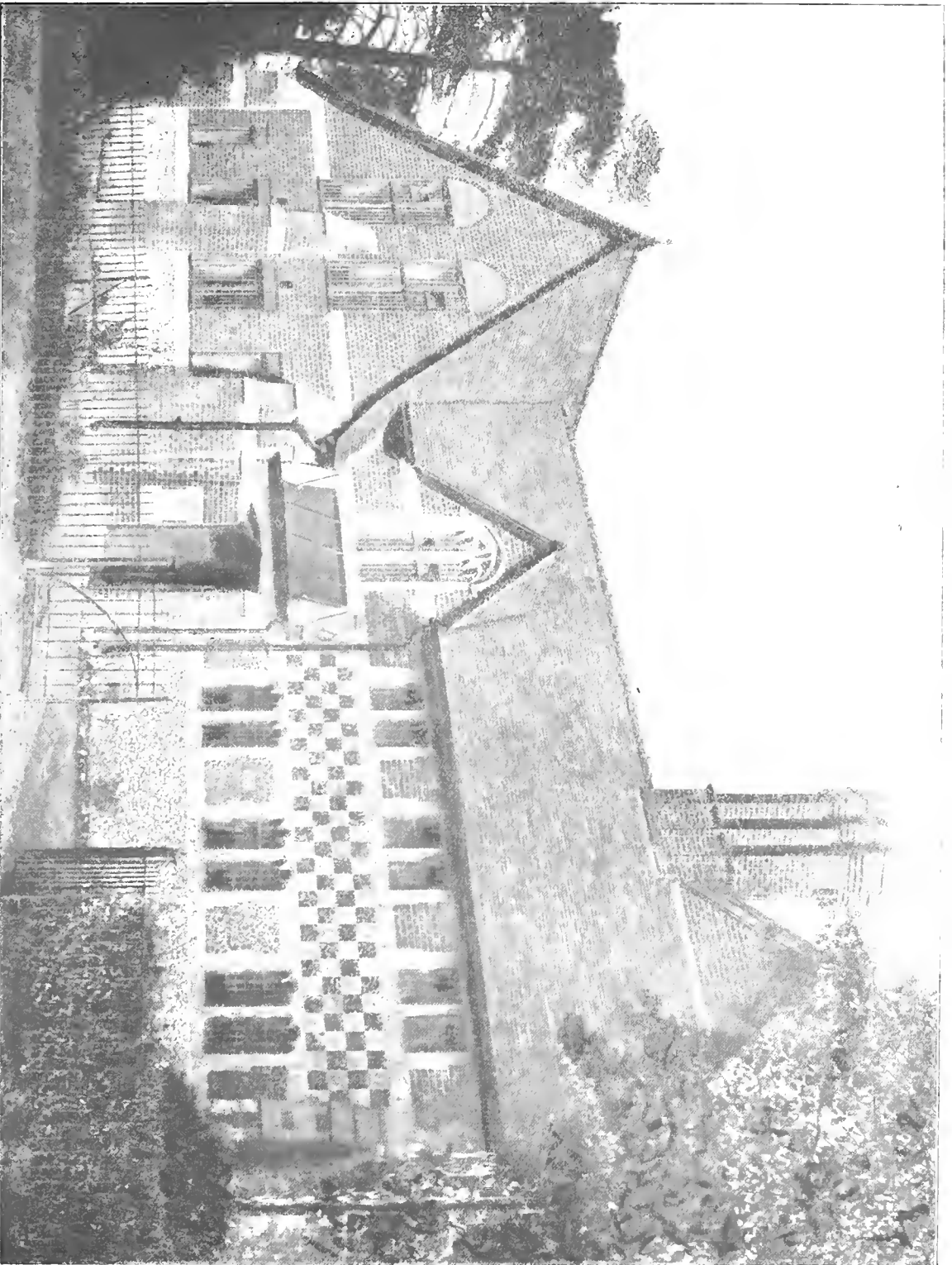


FROM THE OFFICE OF WORKS SKETCH CLUB EXHIBITION.—Drawn



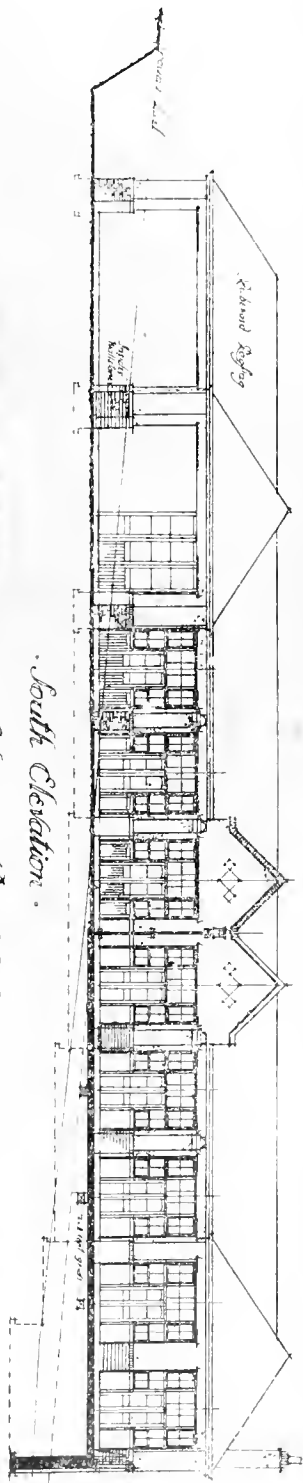
Mr. T. FRANK GREEN, A.R.I.B.A. Sir CHRISTOPHER WREN, Architect, 1695-1700.





PENNYFATHER MEMORIAL BUILDINGS, HARKNET, HERTS.
MR. W. CHARLES WYMOUTH, F.R.I.B.A., Architect.

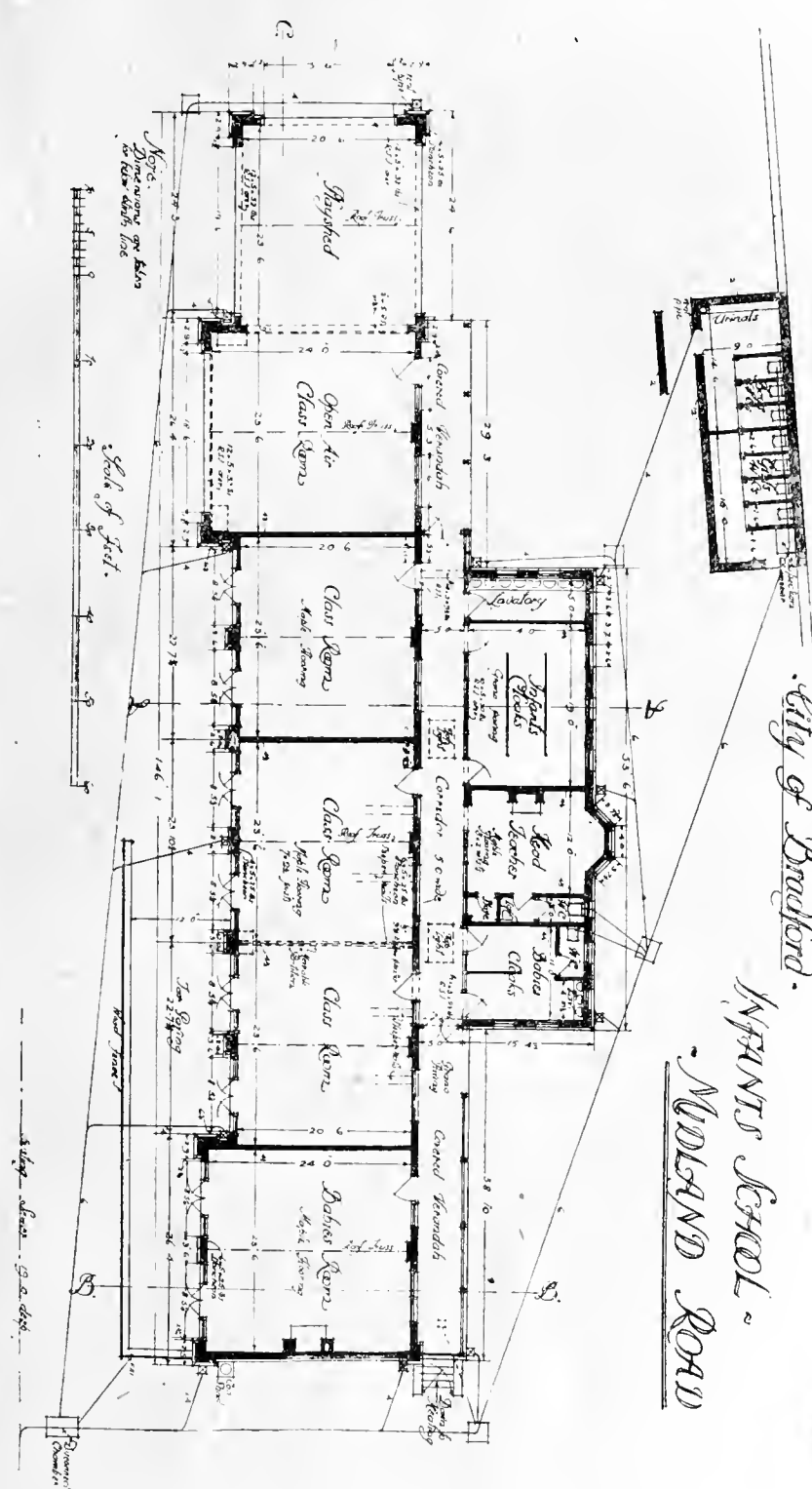




South Elevation.

City of Bradford.

INFANTS SCHOOL.
MIDLAND ROAD



Note: Dimensions are given in feet and inches.

Scale of feet.

Scale - 1/4" = 1' 0" deep.

MIDLAND ROAD INFANTS' SCHOOL, MANNINGHAM, BRADFORD.
Mr. W. WILLIAMSON, Licentiate R.I.B.A., City Architect.

CEMENTATION PROCESSES.*

BY A. H. KRZYNAW.

During recent years experience has proved that cement can be introduced, under pressure, into the minutest fissures and cracks in rock strata, as well as cracks and interstices in masonry and concrete constructions, and made to set there. This practice of introducing cement grout under pressure has evolved to that known to-day as the Francois cementation process. An essential condition in the introduction of cement into fissures and cracks is that the injection should be done under a considerable pressure, the object being, firstly, to overcome the contra pressure of water present in the fissure; secondly, for the purpose of forcing the cement as far as possible into the minute cracks; and, thirdly, for the purpose of squeezing out the superfluous water from the cavity which is being filled with cement pulp, and thus leave the cement in a condition most suitable for its rapid and efficient setting.

Cement milk, when allowed to set ordinarily under water, does so only very slowly and reluctantly, but when the same milk is subjected to pressure, such as produced by a specially constructed cementation pump, the cement sets hard within twenty-four hours. The setting of cement is chiefly due to the inter-crystallisation of hydrated calcic silicate and hydrated calcic aluminate, just the necessary amount of water being taken up to complete the crystallisation; the crystals grow together and form a hard mass. Now, when a superabundance of water is present, such as in the mixture used in cementation work, these crystals ordinarily seem reluctant to inter-crystallise, consequently the setting of the cement is very slow and incomplete. The condition most suitable for hard setting in the shortest time, when the cement is pumped under pressure into fissures, etc., appears to be somewhat as follows:—First of all, the constricted exits of the fissures are choked with cement pulp, which forms a filter bed on which successive layers of cement are deposited, the surplus water being squeezed out through the cement filter already formed in the peripheral areas of the fissure or cavity. As more cement solution is injected the pressure gradually rises and goes on rising, owing to the fact of the water having to be squeezed through an increasing thickness of cement filter. The successive layers of cement eventually fill the fissure or cavity completely, leaving the cement in a condition suitable for complete and good setting. Pressures of 1,000 to 4,000 lbs. per square inch are used, and for this purpose a specially designed pump is employed, of the double ram horizontal type, with a 12-inch stroke, the steam end having a diameter of 14 inches and the water end a plunger diameter of 1½ to 3 inches, depending on the final pressure likely to be required. As the wear on the valves is great, hardened steel balls are used.

In the following cases cementation has been successfully applied:—

1. In greatly minimising water difficulties in shaft sinking or tunnelling through water-bearing strata, faults and dikes.
2. In sealing and rendering water-tight the concrete tubing or lining often used in circular shafts.
3. In sealing open fissures through which water is flowing.
4. In damming back water leaking through broken ground, in the vicinity of faults and dikes.
5. In rendering underground dams water-tight.
6. In rectifying defective boreholes.
7. In rendering impervious the foundations of surface dams or making solid the rock and concrete foundations of engines, etc.

The process as applied to shaft sinking consists of a treatment of the strata, through which the shaft is to be sunk, with cement grout, which is injected into the fissures and cracks of the rock mass, thus sealing them and rendering the ground practically free of water. The method of carrying out the work is as follows: A system of drill holes is put down on the

periphery of the shaft, and through these holes a thin cement mixture is introduced, which finds its way into the cracks and crevices, rendering them impervious to water. There are two methods of carrying this out. In the Portier method the holes are put outside the perimeter of the shaft, and it is claimed that this has the advantage of permitting the sinking of the shaft simultaneously with the injection of the cement. This is a very strong point, in that it practically overcomes the interruption and delay to the sinking of the shaft while conducting the process. On the other hand, the Portier system is attended by the following disadvantages:—

(a) The possible deflection of the boreholes into the shaft, rendering them useless for the subsequent injection of cement.

(b) The danger to sinkers, when applying great pressure in the boreholes, owing to the possibility of rupturing the sides of the shaft.

(c) The boreholes may intercept several fissures, but the mouth of the hole being above the water-level, it is not possible to tell which fissure is the chief water carrier, so that when injection takes place the tendency will be for the cement to take the course of least resistance into the larger fissures, while the smaller ones, though probably of considerable importance, are only sealed in the vicinity of the hole itself.

In the Francois system the boreholes through which the cement is introduced are put down, within the limit of the shaft, arranged on the perimeter at various distances apart, depending on the size of the shaft and thickness of rock strata to be treated. The detailed method of procedure is indicated by the following description of the work being done at the Daggafontein and Brakpan mines:—

Daggafontein No. 2 shaft is a 7-compartment rectangular shaft, 49 ft. long by 9 ft. wide, and was sunk from the surface to 175 ft. in dwyka conglomerate containing numerous cavities and fissures, giving a fair amount of water, but not of such quantity as to seriously hinder sinking. At a depth of 354 ft. the syenite dike of the Far East Rand was encountered, and the shaft sunk in it to its present depth of 500 ft. At this stage the water dealt with amounted to 21,000 gallons per hour, and the management decided to put down a pilot borehole to ascertain the nature of the strata ahead. This hole intercepted the dolomite series at a depth of 12 ft. below the shaft bottom, and at a depth of 165 ft. a considerable amount of water was encountered. In view of the probability of large quantities of water being met with in the dolomites, shaft sinking was stopped, and the adoption of the Francois cementation process decided upon. From the data available the thickness of the dolomite formation was estimated at 200 ft., the direction of the boreholes being set out accordingly, so as to permit of a single stage treatment for the full width of the strata. Unfortunately, the thickness of the dolomites proved to be considerably more than anticipated, being a total of 345 ft., which distance was considered too much for treatment in one stage. A distinct open parting exists at the contact of the syenite dike and underlying dolomite. This was clearly demonstrated, for when drilling through the dolomite contact the feed water was forced out of holes previously drilled. At a depth of 35 ft. the first feeder was met with containing sufficient water to cause a flow of 250 gallons per hour out of a 1½-inch drill hole. A second and larger fissure was struck at a depth of about 130 ft., and as each hole intercepted water, cement grout was injected, the progress of the inspection being observed by the rise in pressure indicated on a pressure gauge. When a pressure of 2,000 lbs. per square inch was reached pumping was stopped and the cement allowed to set. In all 55 tons of cement were used, and as the depth of the holes is about 180 ft., sinking can now be continued for that depth.

The Lydney R.D.C. has instructed Mr. Kennard, architect, to prepare plans for a housing scheme.

BIRMINGHAM BUILDERS AND HOUSING.

Criticism of "official" efforts to solve the housing problem was made at the annual meeting of the Birmingham Building Trades Employers' Association at the Chamber of Commerce last Thursday.

The subject was introduced by Mr. William Molat, who proposed the following resolution:—"That this association is generally in accord with the provisions of the Bill, but desires to place on record its opinion that before proceeding to make by-laws as contemplated by Clause 20 (1), in view of the fact that the matter is one which intimately concerns the building trade, an opportunity should be afforded to this association of assisting to prepare the draft. That it is, further, the view of this association that the powers conferred upon the corporation by Clause 22 should apply also to dwelling-houses the occupiers of which cause wilful and avoidable damage thereto."

He recalled the appointment of the Technical Advisory Committee to the Corporation Housing Committee, and added that although the body had met from time to time its work had been a disappointment to those who were present. At no time, although they put certain suggestions forward, had they been allowed to make any real contribution to the problem as it was presented in Birmingham until a meeting in October last, when a memorandum was discussed, which had been already drawn up and approved by the Council. In reporting generally on the subject he expressed the view that very little attempt had been made to find out what the difficulties of the problem were. He dreaded the fact that from the present position, which should be regarded as a temporary necessity for three, four, or five years, it might happen that in the future it would be thought that the State had got to be responsible for the whole of the housing in the country. He did not think any of them could regard such a prospect with anything but dismay. In reference to the resolution, he pointed out that if the Bill went through the Corporation would be empowered to make by-laws in regard to buildings of iron, steel, or reinforced concrete, and in drawing these up the builders ought to take part. He also felt that the Corporation should have power to deal with tenants who caused wanton damage.

Mr. H. M. Grant, who seconded the resolution, remarked that it seemed as if the Government wanted to flood the country with a lot of officials who knew nothing about the building trade.

The President (Mr. W. Harvey Gibbs) urged that it would be a great mistake for the municipalities or Government bodies to undertake the building, and the resolution was passed unanimously.

MEN'S DEMAND FOR MORE WAGES.

Mr. A. J. Bowen, the retiring president, in moving the adoption of the report, said in spite of numerous applications for increased wages he did not think their relations with the operatives were less cordial. He could not say that all the demands made had been reasonable. The men had always got less than they asked for, the matter having been referred to the Government, but experience seemed to suggest that they always asked for double what they expected to get. As to the future, one could not predict what would happen, but he did not anticipate any serious difficulty, and he thought they could take an optimistic view.

Mr. A. J. Bowen retired from the presidency, having held office for three consecutive years, and he was succeeded by Mr. W. Harvey Gibbs.

Upwards of £6,000 has been subscribed towards the Sherborne School War Memorial Fund. It is suggested that the first call on the fund be the enlargement of the school chapel.

Mrs. Arthur James, of Coton School, Rugby, has purchased a site near the centre of the town, upon which she proposes to erect a public hall for the use of the town in memory of her late husband, Mr. Arthur James, a former High Sheriff of Warwickshire, the only stipulation being that the hall be called the "Arthur James Memorial Hall."

* From paper submitted to American Chemical, Metallurgical and Mining Society.

GYPSUM HOUSES.

Gypsum or plaster Paris as the principal building material for dwelling houses is a new development in building that is being advanced by the Ontario Gypsum Co., Ltd. This firm is now finishing up a pair of houses opposite their office at Paris, Ontario. The walls are of gypsum blocks, cast from gypsum mortar in the form of a double wall, the outside being of three-inch blocks and the inside four-inch blocks with one inch air space between. Each course is tied with wire wall ties at 3 ft. intervals. Joints are broken as in brick construction. The blocks are all cast 24 in. long and 12 in. wide, being cut with an ordinary wood saw for fitting where necessary. The arches over windows and doors are cut skewback by the mason on the job, using an ordinary saw.

The exterior is plastered with two coats cement and lime stucco. Owing to the porous nature of the gypsum blocks it is necessary to provide absolute waterproofing of the exterior wall surface. This is obtained by using hydrated lime as one of the principal constituents of the stucco mortar, and is further ensured by coating the blocks with a waterproofing paint and by using a waterproofing paste with the finish coat of stucco. The first coat is reinforced with ordinary poultry netting stapled directly on the blocks. The appearance of the finish coat is improved by a pebble dash of red and white pebbles. First and second coats stucco are three parts sand, one part grey Portland cement, and one part hydrated lime, measured by volume. The surface is finished by pressing pebbles into the second coat while still soft. The bungalow roof is of wood covered with red asphalt shingles, and the wood trim painted cream colour. The bottom of walls from grade line 4 ft. 6 in. high is red pressed brick with black rake joint capped with a cut-stone belt course, on top of which is laid a layer of waterproofing paper to prevent dampness drawing up from the foundation into the gypsum block. Chimneys are of red pressed brick with cement cap and show a projection of 9 in., having a 4 ft. breast tapering to 3 ft. in 4 ft. from the line of the upper storey window sills. The combination of red pressed brick with black raked joints and the stuccoed walls makes a very pleasing colour scheme, which also harmonises with the red shingles and cream woodwork.

The dividing wall of the two houses, which are semi-detached, is built up of two 3-inch gypsum blocks, making a double wall with 1 in. air space similar to the exterior walls. This wall rests on a concrete basement wall at grade line with waterproofing paper on top of the concrete. The basement is divided into two compartments by a wall of 4-in. gypsum blocks. It is beam filled by cutting blocks to fit, and separates the furnace room from the vegetable cellar. It is also used as a bearing wall for the first floor joists.

A proposal is under consideration for the demolition of the church of St. Katherine Coleman, and the union of the benefice with St. Olave's, Hart Street, and now a poll of all the parishioners is in progress. A church has existed on the site from the fifteenth century, but the present edifice only dates back to the year 1734.

As an act of thanksgiving and as a memorial of the fallen, it has been decided by a meeting of St. Mary's congregation, Stamford, to proceed as far as possible with the completion of the chancel screen in the church. The design of the late John Sedding is felt to be impracticable, in view of the expense (estimated at over £700), but its main features will probably be adopted, so far as the funds will permit.

Mr. Thos. Brailsford, a former art master at Peterborough School of Art, died in Peterborough Infirmary on Saturday week, after a long illness, at the age of 42. He was a fine landscapist, and was more of a pre-Raphaelite than an impressionist. He was an undergraduate of London University. After the closing of Peterborough School of Art he became art master at Aske's Haberdashers' School at West Hampstead for three years.

Our Office Table.

The Corporation committee charged with the care of the old site of the Manchester Royal Infirmary, at their meeting on Tuesday—Sir Charles Behrens in the chair—passed the following resolution:—"That 5,500 square yards of the infirmary old site be allocated to the purposes of an art gallery, and that architects who will be invited to submit plans be requested at the same time to supply a plan for the laying out of the whole of the area." It is already understood that the Libraries Committee will seek a site elsewhere for the new library. There is no announcement as to what is in the Committee's mind as to the utilisation of the remainder of the old infirmary site, but it is suggested that besides something in the form of a war memorial the Lincoln statue might find a place there.

According to a recent patent by Mr. G. Ross, 21, Linwood Boulevard, Kansas City, Missouri, U.S.A., a material for surfacing roads is made by mixing preferably 100 parts of earthy material, such as loam, soil, or clay, with 35 parts of water to form a thin mud, and adding in succession 20 parts of asphalt, natural bitumen, or coal-tar pitch, or other artificially prepared pitch, and 1 part of a solvent for the asphalt, etc., such as dead oil, cresol, or crude carbonic acid. The bitumen may be added in a powdered state, or it may be liquefied by heat. In a modified process, the solvent is sprayed upon the mixture of bitumen, etc., and mud after the mud has been spread upon the road and when substantially all the water has evaporated therefrom.

Colonel R. W. Edis, hon. colonel of the Artists Rifles, presided over a meeting of past and present members held at the headquarters in Duke's Road, St. Pancras, on Wednesday last, to consider a proposal for an "Artists' war memorial. In moving that an executive committee be appointed, Colonel Edis said that to him, now in the 80th year of his life and the 60th of service in the Artists, it was difficult to speak on so sad and solemn an occasion. On mobilisation the strength of the regiment was 621. Between then and the beginning of the present year 14,201 recruits enlisted, and 9,081 had been gazetted to commissions, so far as had been officially reported, although the number would probably exceed 10,000. He believed that the Artists were represented in every regiment in the Army except one or two cavalry regiments. There had been killed or died of wounds 1,549; wounded or gassed, 3,079; 532 were missing, and 286 were or had been prisoners of war, so that the total number of casualties was 5,446. His proposal was that the memorials should take the form of a fund to assist the relatives of those members of the Artists who had died, and those who, owing to disablement or other causes, were in financial need, and to erect some suitable memorial. The motion was agreed to unanimously, and an executive committee was appointed. A statement which was circulated shows that eight members of the Artists have gained the Victoria Cross, and 741 British and 40 French, Italian, and Belgian honours have been awarded to men associated with the regiment; while 400 members have been mentioned in dispatches and 30 by the Secretary for War.

As we stated a fortnight ago on p. 53, the directors of the London County, Westminster, and Parr's Bank, Ltd., have declared a dividend of 10 per cent. for the past half-year (less income-tax), making a total distribution of 20 per cent. for the year 1918. The full figures, which are very satisfactory, amplify those then given. There has been a substantial increase in deposits, the total at £262,857,000 being about fifty millions higher than a year ago. The total cash in hand and at call is but slightly changed, it being now £84,400,000, against £84,900,000 at the end of 1917, but the total of bills discounted and advances is over fifty millions higher at 140 millions.

It is understood that Sir Eric Geddes will shortly be relieved of his task of co-ordinating the activities of the various Gov-

ernment Departments concerned with demobilisation in order that he may be ready to take up the duties of Minister of Ways and Communications. Our Parliamentary correspondent states that the Bill for the establishment of the new Department is ready, and will be introduced and proceeded with immediately in Parliament assemblies. The Bill is an "enabling" measure. It is designed merely to set up the new Department and to define its powers in general terms. Under the Bill the Ministry will be enabled to take over and control railways and canals.

It will be recalled that the Southwell Diocesan Conference in October, 1917, decided it was desirable to form a new diocese for the county of Derby, to comprise the two archdeaconries of Derby and Chesterfield; that the parish church of All Saints, Derby, be made the cathedral of the new diocese, and that until the formation of the See the church of All Saints should be styled and utilised as the pro-Cathedral. A report of the preliminary committee proposed to raise £10,000 in Derby and Notts as a memorial to those who have fallen in the war, and that the £10,000 or more raised in Derbyshire should be spent on the cathedral as the Church memorial to the Derbyshire men who gave their lives for their country. The committee suggest £30,000 as a contribution which the city and county of Nottingham might be invited to raise, leaving £50,000 to be raised by Derbyshire, in addition to the sum proposed as a war memorial. The proceedings of the executive and finance committees were submitted and approved with slight amendments, at a recent meeting of the Diocesan Council held at Derby, under the presidency of the Bishop of Southwell. A report of the Committee on Buildings was read by the Bishop of Derby (chairman), who said the new buildings should be designed in the classical or renaissance style of architecture, in fullest accord and sympathy with the present interior of All Saints' Church. Any additions planned should grow naturally out of the present structure, should be fully in keeping with its style, and enhance its proportions and spaciousness. There was abundant exterior space on the site for the eastern extension of a lofty chancel and the structural arch at the east end of the church lent itself readily to that purpose, whilst there was also room to the south-east and south of such a chancel for the harmonious grouping of the memorial chancel and other buildings most suitably cited for the public services of a cathedral church. The report was adopted, and it was also agreed that the whole of the alterations and embellishments to All Saints' Church, which was ultimately decided on, shall be undertaken and carried out as a memorial to Derbyshire men who have fallen in the war.

There seems to be very little prospect of building operations being begun on the site of the old G.P.O. at St. Martin's-le-Grand for some time. Before the war plans were completed for a new building to house the staff of the Accountant-General, but these, and other similar schemes for Government buildings, will now have to be reconsidered in the light of new requirements. It is satisfactory to learn that, recognising the possibilities of the St. Martin's-le-Grand site, the authorities are determined that the buildings to be erected shall not be a mere block of offices, but architecturally worthy of the position and their purpose.

A deputation from the Birmingham Civic Society had an interview last Thursday with the Housing and Town Planning Committee of the City Council on the subject of beauty in town-planning. The meeting was presided over by Councillor G. Calbury, jun., and the deputation were introduced by Alderman Neville Chamberlain, M.P. Mr. Chamberlain explained that the Civic Society was composed of various classes of members who were anxious to place their services at the disposal of the Corporation by giving help and advice on questions respecting the artistic development of the city, and also with regard to the lay-out of estates for housing schemes. They recognised that the members of the City

Council must be responsible for the schemes, but they asked that they might be consulted at early stages of the proceedings in town-planning an area. A long discussion ensued, during which it was stated that the Civic Society had appointed a Technical Committee, representing architects, engineers, artists, and the university, to advise the Council on matters in which their assistance might be useful. At the close the chairman of the committee thanked the deputation for their offer, and said the committee hoped to avail themselves of the society's assistance.

The adoption of surface bed stone for domestic building purposes, advocated by more than one writer in some of the daily papers lately, is not without its dangers. The chief defect of many of the existing cottages is their dampness, and the use of rubble stone walling, upon which the minimum of labour has been expended, necessitates wide joints, which greatly increase the risk of damp walls from the relative porosity of stone and some bricks. To counteract this, walls built with a hollow cavity may be used, but increased labour is involved, both in rough preparation of the stone and in placing it in position. Stouter walls may be used, but if of an adequate thickness to resist damp effectually, there are few districts in which their adoption would compare favourably with the cost of bricks.

The Board of Trade state that in view of the abolition of consumers' permits for timber, announced on December 27 last, applications for the purchase of timber from Government stocks should now be addressed to the Government Timber Buyer, Mr. Montague L. Meyer, Salisbury House, Finsbury Circus, E.C.2. The Controller of Timber Supplies will, on application, grant permission to purchase pitwood from Spain, Portugal, Newfoundland, Scandinavia, and Finland, and licences will be recommended for its import to specified ports. Permission will also be granted on application for the shipment and disposal here of overlying wood goods belonging to traders in this country, and such goods can be sold subject to the maximum prices in force on the arrival of the goods in this country. Registered firms who have exhausted both their first and second rations of imported soft woods and who require further supplies to satisfy their customers' needs are invited to communicate with the Controller of Timber supplies.

At the Royal Geographical Society on Monday week a lecture was given by Lieutenant Colonel Winterbotham on "The British Survey on the Western Front." The lecturer said that the work which in the war had fallen to the surveyor had been extremely interesting. When the Expeditionary Force embarked in 1914, it was well found in small maps, but after the pause on the Aisne came a demand for maps more accurate and on a much larger scale, and the Ordnance Survey set itself at once to prepare maps of the enlarged area on a scale of, roughly, three inches to the mile. Far more important than the needs of the infantry or staff who had to arrange the system of defence were the needs of the artillery. Before any set piece, any big attack in which the artillery was to take part, the surveyor had to get to work to provide accurate groundwork to enable the gunner to do the utmost damage in his power.

Speaking at a meeting of the Sanitary Inspectors' Association (Midland Centre), held at Wolverhampton on Saturday last, Mr. T. Speake (Shrewsbury), said it must be admitted that the existing health service had failed and the causes must be discovered, because the magnitude of the task could not be exaggerated. Co-ordination was wanted at headquarters and a strong Minister at the head of a department, which should include full equipment for research work. Too often local vested interests were allowed greater freedom than was desirable. The methods should be less permissive; there should be more of "shall" and less of "may," and duties of inspectors should be more clearly defined. Also, their pay should be such as to attract the best men, who should have security of tenure as well.

Experiments are being conducted in North Wales to extract alumina from slate refuse.

LEGAL INTELLIGENCE.

IS A FLAT A "NEW BUILDING"?—Messrs. Cammell, Laird, and Co., shipbuilders, were summoned at the Birkenhead Police Court last Friday for having unlawfully occupied a new building as a dwelling house before it had been certified as fit for human habitation. The proceedings were instituted under a local Act of 1881, which provides that the conversion of a building into more than one dwelling house, which was originally built as one dwelling house only, shall be considered to be the erection of a new building. Defendants admitted they had converted two large houses into flats, but contended that the building stood exactly as built before 1881. Therefore, no certificate was needed. Prosecuting counsel argued that each flat was a separate dwelling house.—The magistrate imposed a fine of £1, promising to state a case for defendants, who gave notice of appeal.

WHERE BUILDERS DIFFER.—At Rhyl County Court last Friday, Mr. William Pickersgill, builder, Rhyl, sued Mr. W. Price, Tegian, Llandudno, for recovery of £10 10s., less £5 paid on account, for repairs to the defendant's Rhyl property. The plaintiff's case was that he was instructed by the defendant to raise a chimney 3ft., but on examining the property he found that another chimney and the roof wanted repairs. The defendant told him to proceed with the work. Two builders supported the plaintiff's contention that the charge was reasonable, but the defendant called two builders who said that £5 was more than enough. One witness put the hours for the work at 135, another at 55 hours, and a third at 32½. One witness said scaffolding was necessary for both chimneys, and another said it was necessary for only one. The judge awarded the plaintiff £9, less £5 paid.

CHIPS.

Lieutenant E. S. Moule has been appointed assistant surveyor to the Aldershot Urban District Council.

Capt. M. E. Fitzgerald has resigned the position of surveyor to the Warmley Rural District Council.

The parishioners of Mobberley, Cheshire, have decided to erect a parish hall as a war memorial, and it is expected about £2,000 will be required.

What is claimed to be the world's biggest hotel, the Pennsylvania, which has 2,200 rooms with baths, was opened in New York on Saturday last.

The Aberdeen T.C. has appointed Messrs. W. Kelly and Harbourne Maclellan, architects, as expert advisers in connection with the preparation of a local scheme of town planning.

Mr. Sheriff Banister Fletcher, C.C., F.R.I.B.A., will take "Piers, Towers, Spires, and Roofs" as the subject of his lecture on "English Mediaeval Architecture" at the L.C.C. Central School of Arts and Crafts tomorrow.

At the general meeting of the Royal Institute of British Architects on Monday, February 5, at 5 p.m., Mr. George Hubbard, F.S.A., will read a paper on "How to Obtain a Water Supply in the Absence of Springs, Rivers and Rains."

The death is announced of Mr. James Harvey, building contractor, Enniskillen, at his residence, Enniskillen, from heart failure. Mr. Harvey had reached the age of 76 years, and was one of the most extensive and highly respected contractors in the north of Ireland.

Mr. William Liversidge, of Millgate House, Selby, who died on October 29, aged 91, has left estate of the gross value of £182,601, and bequeathed, on the death of his wife, £9,000 in trust for underpinning and restoring the entire west front of Selby Abbey Church. Mr. Liversidge expended over £12,000 in rebuilding the south transept of Selby Abbey after the fire in 1906.

The House of Lords last week dismissed the appeal of the Corporation of Glasgow in the action by John Hepburn, contractor, Victoria Road, Nitshill, Glasgow, for damages in respect that when, on October 31, 1916, driving his horse and van along Meadowpark Street his horse fell and sustained injuries necessitating its destruction. Mr. Hepburn alleged that the accident was due to the fault of the Corporation in allowing the street to be for some time prior to, and at the date of, the accident in a state of disrepair dangerous to vehicular traffic. Lord Ormisdale found that Mr. Hepburn had failed to prove his case, but the First Division of the Court of Session reversed this decision and granted decree in favour of Mr. Hepburn for £300 in name of damages.

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TENDERS.

*.*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender: it adds to the value of the information.

DUDLEY.—For erection of four tramway shelters, for the corporation. Accepted tenders:—Bayliss, Jones and Bayliss, Wolverhampton, iron-work, £128; M. Round and Sons, Dudley, woodwork, £504 10s.

HEBBURN.—For repairing the boiler at the hospital, for the Hebburn Urban District Council:—Sprout, Marley and Co., Hebburn (accepted).

LONDON, S.E.—For work, etc., for the Camberwell Borough Council. Tenders recommended for acceptance:—For six months ending June 30, T. Tilling, Ltd., horse hire. For one year to March 31, 1920, Hudsons, Ltd., house refuse removal by L. B. and S.C.R.; W. T. Lamb and Sons, house refuse removal by S.E. and C.R.; T. Russell, clock winding; E. Bridger, window cleaning; P. Mills and Co., Ltd., and Everett, Ltd., street refuse, trade refuse, and excavation barging.

STIRLING.—For repair of main pipe, for the Central District Council of the Stirling County Council:—Scott Bros., St. Ninians . . . £30 13 6 (Accepted.)

LIST OF TENDERS OPEN.

COMPETITIONS.

March 1.—The Bucklow Rural District Council invite competitive designs for (1) laying out certain land, and (2) of houses to be erected thereon in Dunham Massey. Premiums of £50 and £25 respectively will be awarded for the designs adjudged to be first and second in order of merit. Designs to the Clerk, Union Offices, Knutsford. A plan and particulars of the surveyor, J. McD. McKenzie, 27, Station Buildings, Altrincham.

March 31.—The Burial Committee of the Carlisle Corporation invite designs and estimates for a suitable memorial to be erected in the Carlisle Cemetery in memory of the men who have given their lives in the defence of the Empire and who have been buried in Carlisle cemeteries. Applications for further particulars to H. C. Marks, M.I.C.E., City Engineer and Surveyor, 36, Fisher Street, Carlisle.

BUILDINGS.

Feb. 8.—Labour and materials required in erection of an electricity converter station in Old Trafford.—For the Stretford Urban District Council.—E. Worrall, Surveyor, Stretford Council Offices, Old Trafford.

PAINTING.

Feb. 12.—Painting at various places.—For the Lancashire and Yorkshire Railway.—Forms of tender and specification may be obtained on application at the Engineer's Office, Hunt's Bank, Manchester. Tenders to E. C. Irwin, Secretary, Hunt's Bank, Manchester.

ROADS AND STREETS.

Feb. 5.—Work in connection with the deviation of the main road between Ifracombe and Combe Martin, near Bament's Wood.—For the Devon County Council.—Tenders to B. S. Miller, Clerk, The Castle, Exeter.

At a recent public meeting a scheme was adopted for the enlargement of the Town Hall, Andover, to include memorial recreation rooms for service and ex-service men, and to cost £3,000.

"There are lots of bricks and mortar for cinema houses, and there are poor people out in the cold and starving for want of houses and cannot get them built. You cannot get money to build dwelling-houses for the poor, but you can get money to build cinema houses," said Judge Craig, in refusing at Belfast Recorder's Court an amusement licence for a cinema house.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

Borough of Stepney Town Planning Scheme, by Messrs. Thomas H. Mawson and Sons. Proposed

Strand, W.C.2

War Memorial Campanile, Albert Square, in "Stepney Greeting," near suggested new site for the new Town Hall (Messrs. Briggs, Wolstenholme, and Thornely, Architects). Elevations and plans of new blocks of industrial dwellings, with communal kitchen, dining-room, and common laundry in the basement.

Bardwell Manor House, near Pakenham, Suffolk. Sketch by Mr. Maurice B. Adams, F.R.I.B.A.

Currente Calamo.

The carrying out of building work which is contrary to any of the numerous regulations made under D.O.R.A., or doing more work than a licence covers, is a very risky business. For though, of course, a building owner may pay up at the end, yet, on the other hand, he may not, while, if he pleads the illegality of the contract, the builder cannot recover at law. This is well shown by the recent case of "Brightman and Co., Ltd., v. Tate and another," in which Mr. Justice McCardie delivered a full considered judgment. The plaintiffs, who were builders, brought their action for £1,171 for work done and materials provided in connection with a building belonging to the defendants. The contract was for repairs and alterations upon an old and dilapidated farm to fit the premises for holding classes in dairy and agricultural work. A licence was granted by the authorities for building work up to £1,350, but the changes and additions required turned out to be far more costly than was anticipated. No other licence was obtained, but the plaintiffs continued carrying on the job, under the defendants' architect, knowing, or having come to know, that their doing so was illegal, but, as the judge said, in the hope that the defendants would raise no question as to payment at the end. The building owners, however, now pleaded the illegality of the contract, and defended the plaintiffs' action to recover the admitted cost of the work done and materials supplied by them. The judge held that the regulations under D.O.R.A. were valid and that the building work done beyond the licence was illegal, to the knowledge of the plaintiffs. Therefore he ruled that the plaintiffs could not recover their claim, and he gave judgment for the defendants with costs.

Builders and other users will do well to watch carefully the changed state of affairs in connection with the recent

notice of the Timber Controller. Already many firms have applied to 80, Newman Street, and have got additional allocations, and it is pretty evident that others who have been speculating in rations at a low price will be left with them on their hands. On the other hand, sleepy firms who have been in no hurry to sell their rations have missed their market, because in the future, there being no limit to a merchant's right to draw on the National stock, the orders will go to those who show the most energy and enterprise. How this change will affect prices is another interesting point. Is there, asks *Timber*, the leading trade organ, any room for cutting in the authorised profit of £3 15s. per standard? When only a certain amount of business was possible, merchants kept strictly to the controlled figures, and we do not hear of instances where less than maximum prices were accepted. But now it may quite conceivably pay a merchant with an office only, and no yard and mill to keep up, to turn over as much as he can at less profit per standard than £3 15s. In the old days, as we know, there were firms in the large towns who did a purely turnover trade, selling spruce and unassorted Scandinavian stocks at ten or fifteen shillings per standard profit, and it paid very well when there was enough of it. Now there is not the possibility of a loss, and it is quite likely therefore that the rate of profit will be reduced below the £3 15s. per standard, at any rate until orders become more plentiful.

While not covering the ground, as Mr. Montague Edwards' suggestion for financing the building of the proposed dwellings, on which we have commented on another page, seems to us to do, a proposal mooted last week at the meeting of Rural District Councils in London, by Councillor W. A. Ross, of the Isle of Axholme Rural District Council, might very well be tried, at any rate in small districts. He suggested that the War Savings Certificates should be changed to National Housing Certificates, issued at 15s. 6d., bearing the same rate of interest as at present. A person, before building a house, should deposit certificates, together with the interest, to the value of

not less than one-fourth the cost, the remaining amount to be provided by the State. It was decided to refer the scheme to the Executive Council, who are to consider additional facilities for the acquisition of houses by private enterprise.

The Hampstead Garden Suburb has decided to have a Repertory Theatre of its own, and last week an inaugural public meeting was held, at which Mr. Macdermott explained his views and gave figures as to probable cost. He read letters supporting the scheme from Mr. Manfield, Mr. Bernard Shaw—characteristically witty and bitter about West End "mis-managers, who occasionally produced plays that did happen to be both pot-boilers and masterpieces"—and Lord Dunsany. It was decided that the theatre should be uncommercial, that actors should be paid for rehearsals, and that members of the suburb be entitled to a vote in the government on taking shares. A council was formed, and Mr. Macdermott was appointed first director, Mr. Gilbert Clannon describing him as "a fellow Lancastrian, who combined commonsense with idealism." The total cost of the scheme was estimated at £30,000, but the contractors have promised a temporary structure for April, and it was decided to proceed at once with this as a preliminary venture. There is a proposal that the theatre shall constitute a Peace Memorial.

The Barnard "Lincoln," which is going to Manchester, raised a good deal of controversy in America some twelve months ago. One critic said that Barnard had given Lincoln "bulbous feet, eccentric, with a skyline like a storm at sea." Roosevelt admired the work, but an antagonist in the *New York Times* maintained that as Roosevelt was only seven years old when Lincoln died, "he could not have remembered him distinctly enough to pass judgment on the portrait." The most drastic of Barnard's critics was Lincoln's own son, Mr. Robert T. Lincoln, who said: "The result is a monstrous figure which is grotesque as a likeness and defamatory as an effigy." On the other hand, some of America's foremost art critics spoke highly of the statue's grave and rough-hewn beauty.

THE HOUSING PROBLEM AND ITS COST.

SOUND FINANCE THE NEED.

In his presidential address to the 400 delegates from rural district councils of England and Wales at a conference of the Rural District Councils Association, held at the Guildhall last week, Sir Courtenay Warner, M.P., said he was revealing no secret when he told them that Dr. Addison had been appointed to his office because he wished to deal with the question of housing. There could be no permanent remedy for the problem unless it provided for an economic rent. He believed that the Government had under consideration the payment of 75 per cent. of the loss incurred over and above what would be produced by a penny rate.

We know nothing about any secrets in connection with Dr. Addison's appointment as President of the Local Government Board. He has dealt with many things, and his record has hardly been marked by such success as to warrant the aspiration that better luck may be his than has befallen the quick-shifts who have preceded him in his present job. Mr. Courtenay Warner's two succeeding statements are, no doubt true enough. The Government is still "considering" that little matter of 75 per cent. and is likely to—just because the Treasury knows well enough that no permanent solution of the problem is possible, unless it provides for an economic rent. And just because no financier can provide that, matters are still under "consideration," and we very much fear they are likely to remain so. If so, it will only be another batch of promises, like pie-crusts, made to be broken, in the same fashion as the pledges given with regard to the very last lot of War Bonds.

Long ago we pointed out that present conditions of all sorts totally prevent any such enterprise as the Government has committed itself to, and that the one chance left to our rulers was to legitimately encourage private enterprise. We are glad to see that one convincing authority recognises this. Mr. E. Montague Edwards, J.P., in the *Financial Times* of the 28th ult., propounds a scheme which is at least honest, though that may not commend it to recent Chancellors of the Exchequer, who have possibly inherited their predatory instincts from Mr. Lloyd George, whose Finance Acts, 1909-10, especially in regard to builders, were a *multum in parvo* of the science of robbing Peter to pay Paul.

It is, of course, perfectly true that the current cost of production of materials necessary and the high price of labour are factors which have to be faced. Nevertheless, says Mr. Montague Edwards, preference should be given to an established builder possessing experience of this class of public necessity. The executive may argue that necessity knows no law and consequently, without attempting to make the scheme a financial success, put it into operation and decide that any loss must be made good out of the rates. The resources of the public purse offer inducements for extravagance such as in private life would not be tolerated by an individual or individuals carrying out a scheme on their own behalf. Mr. Edwards quite rightly states that 75 per cent. of the municipal housing schemes show some loss in working which the ratepayers have had to bear. Individuals who can only allocate a small portion of their time to municipal matters

cannot reasonably be expected to give the close attention necessary to keep the cost of working at a figure necessary to ensure a fair result upon the capital outlay.

The schemes before the public represent a mere drop in the ocean as compared with what is urgently needed. How is the problem to be solved? Mr. Edwards' conviction is that the Government must encourage private enterprise. It must also remove the vexatious difficulties existing in the Land Valuation Act, the Town Planning Act and others which at present bar the way to the development of private enterprise in this connection. On the other hand, it is essential that the details of the Small Holdings Act should be widely disseminated in order that those individuals desirous of possessing their own residences may learn of its advantages and avail themselves thereof. The number of experienced builders in the United Kingdom who would be willing, were they assured that the Government would assist them upon the following or a similar basis, is legion. There should, as Mr. Edwards proposes, be set up in each district a Housing Committee, comprised of the Borough Treasurer, Borough Engineer and three of the Highways and Works Committee of the local governing body to determine a standard value of all local land suitable for the erection of artisans' dwellings. All land should be freehold or leased in perpetuity at a ground rent not exceeding 5 per cent. per annum upon its fixed standard value, with the option of purchasing the freehold at any time at the initial standard price. Until the existing shortage of houses has been satisfactorily outset, the paramount duty of each Committee would be to encourage proposals by responsible builders; to impartially consider these; to arrange the finances, and obtain the approval of the Central Board. Then with all consistent speed to assist each undertaking through to completion.

SUGGESTED SCHEDULE.

The following schedule is suggested as a basis only, and may or may not require revision. Intermediate figures, of course, would be in proportion:—

a. Standard rent (per week)	4/-	6/-	8 -	10/-	12/-	14/-
b. Actual rent (per week)	5/-	7/6	10/-	12/6	15/-	17/6
c. Difference to liquidate loan (per week)	1/-	1/6	2/-	2/6	3/-	3/6
d. Assessable for local rates at (per annum)	£ 5	£ 7	£ 10/-	£ 12 10	£ 15	£ 18
e. Standard value of land and house (per holding)	100	150	200	250	300	360
f. Actual cost of land and house (per holding)	125	180	250	320	380	460
g. Difference to be loaned (per holding)	25	30	50	70	80	100

(a) Standard rent, to be fixed for the purpose of assessment for local rates.

(b) Inclusive of the local rates, but subject to variation as follows:—The Central Board to issue a schedule defining the excess collectable or abatement allowable to correspond with the rise or fall of the local rates, the mean average of which must be fixed and regarded as the standard.

(c) The raising of rents is always a thorny question; nevertheless, with impartial consideration of all interests involved and the necessities of the present time, this appears to be inevitable. The difference can quite readily be paid without imposing an undue burden upon the tenant. Prospectively this difference will be offset by the reduction in price of

foodstuffs, clothing and other commodities.

COSTS OF BUILDING.

The present high cost of building construction will, when the output of materials can be considerably increased, probably come down to a minimum basis. That minimum basis or standard value must be anticipated by the Reconstruction Committee now sitting and then published, land and house separately. (f) The current cost of construction will involve the amount or more than suggested in the foregoing as actual cost of land and house. This, however, must not stand as an obstacle to the progress of the erection of suitable dwelling-houses, any excess in cost of land and building to be loaned to the builder to be repaid by him over a period not exceeding twenty years, by equal payments, without interest. To insure the fulfilment of this obligation, the life of the builder or the purchaser should be covered by a State life insurance policy, or one issued by a combination of several of the life assurance offices, the premium to be computed upon the average of the repayments and added as a charge to each. Until this loan has been repaid a charge upon the property must be effected in favour of the local authority. Some builders might need further financial assistance. This should be readily furnished by the local authority at a rate not exceeding 5 per cent. per annum. For this section a legal mortgage must be arranged. The legal expense should be fixed at a standard basis something less than those in force by the building societies which have been in existence for twenty or more years and whose operations have proved successful. Such societies, however, owing to the present and prospective high cost of building construction, cannot efficiently deal with the situation as it exists to-day, borough treasurers should be empowered to negotiate with the Treasury for any funds which may be necessary to the efficient working of the scheme. In large boroughs such financial assistance will not be necessary. The financing of the scheme could well be dealt with in connection with the capital account of the borough.

We have said several times that the adoption of the principles embodied in Mr. Edwards' scheme would give an incentive to enterprising builders to promptly meet the urgent needs of the situation), some of whom might redeem their obligations in a much lesser number of years than had been agreed. Further, it would distribute the responsibility over the whole of the area necessary to be covered and at the same time fix the administration with the local authority and thus relieve the Central Board. As salaried administration would be considerably reduced—indeed, almost dispensed with—the cost of working when compared with the magnitude of the aggregate schemes would be infinitesimal. The last consideration, of course, may not commend itself to the swarm of parasites that thrive on bureaucracy, but it should commend itself to any honest Minister likely to be charged with housing.

It is proposed to build a parish hall at Lamorbey, Sidcup, at a cost of £1,700, as a war memorial.

The stained-glass windows in St. George's, Hanover Square, are being reinstated. The great east window was injured by a suffragette bomb in 1914, and the week after it was put back, after the leadwork had been restored, it had to be again put in the vaults, together with the two fine east windows in the North and South Galleries, lest they should suffer during an air raid. The great east window is part of a Jesse window.

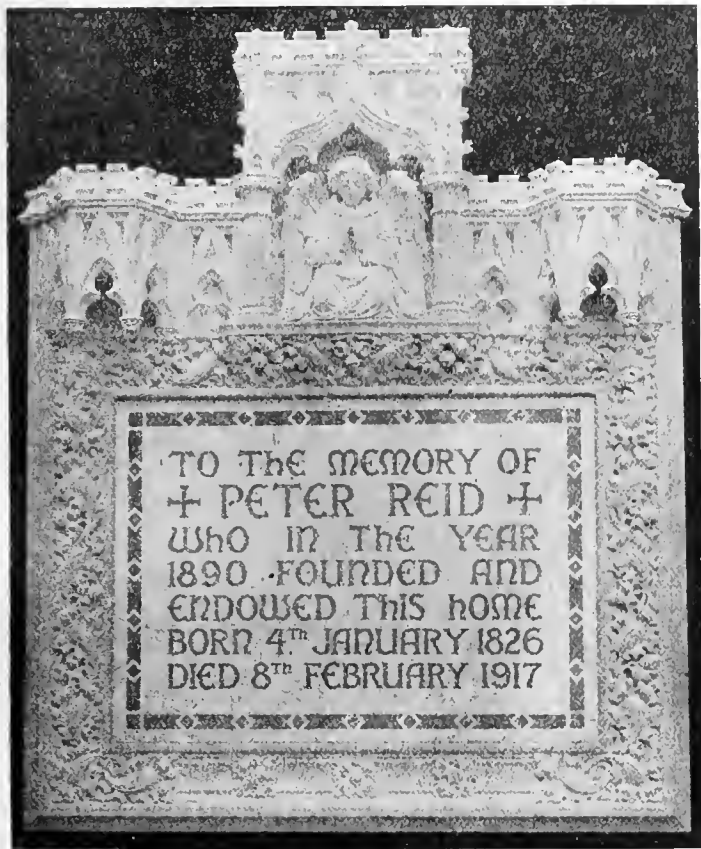
Our Illustrations.

BOROUGH OF STEPNEY TOWN PLANNING SCHEME.

In our issue of January 22 we described the new scheme prepared by Mr. Thomas H. Mawson for the improvement of this part of the Metropolis, and to-day we give a general plan showing his proposed new thoroughfare designated "Stepney Greeting," which is to reach from Trinity Square, Tower Hill, to the precincts of the Regent's Canal Dock, thus opening up a very crowded district by the creation of a highway 110 ft. wide,

to include, as shown, a replica of the Town Hall for further municipal buildings. Messrs. Briggs, Wolstenholme and Thornely are the architects selected for the new Town Hall designed for the site in Arbor Square further north. We illustrated their chosen design in our issue of June 30, 1915. The second double page shows the intended groups of workmen's dwellings laid out in blocks of four pavilions four stories high, and contrived as a series of industrial flats set round a central garden space from whence all the entrances are arranged. A communal kitchen is provided, with a dining hall and a common laundry, in the basement of one of the end blocks, as

somely detailed chimneys of Tudor character. The colour scheme of the building, as seen from the high road, with the flint wall in front, is uncommonly attractive. This result is mainly due to time; but the designer, whoever he may have been, was undoubtedly an artist of great taste, gaining his effects without effort and avoiding ostentation, consequently his results are pleasing and suggestive for all time. The pen sketch reproduced to-day, though necessarily wanting the charm of colour, gives a good idea of the grouping and character of this wayside Suffolk home. The building is quite unimportant in scale, and is comparatively devoid of historical distinction when considered among the country seats of East Anglia.



THE PETER REID MEMORIAL, SWANLEY, KENT.

This is erected in the Chapel of the Peter Reid Home at Swanley, in the County of Kent. The frame is carved in Caen stone with a centre slab of Pentelicon marble, on which is incised the inscription and a simple border filled in with lead. The marble is tinted slightly golden by a special process. The architect is Lieut.-George H. Wenyon, M.S.A., of Grafton Street, W., and the sculptors who carried out the work, Messrs. H. H. Martyn and Co., Ltd., Sunningfield Works, Cheltenham.

and linking up the Inner Circle District Railway with the Tilbury and Southend system by means of an underground extension, having a station near the Tower of London, and reaching a new station, to be built, close by Regent's Dock end of "Stepney Greeting." The position of the King Edward Memorial Park at Shadwell is also shown on this East London area plan, together with the opening up of St. George's-in-the-East Gardens by a new roadway from Cable Street. One of our double pages to-day illustrates the proposed War Memorial Campanile to be placed in Albert Square, at the top of the vista to be created southward, overlooking the public gardens at Shadwell, and the Thames. In this connection a new site for Stepney Town Hall is likewise suggested in "Stepney Greeting," so as to compose with this Campanile, as the "Civic Centre" of the borough, and to balance this arrangement Mr. Mawson proposes

shown by the accompanying plan. Other parts of the scheme include set-back warehouses along the river frontage, and arranged to insure an esplanade, with also a quay or lower road sufficiently high above spring-tide level. Also Mr. Mawson proposes to retain some of the existing dwellings in the best of the side streets by dividing the old blocks up and introducing new pavilions. Those parts of his scheme will be illustrated in an early issue.

BARDWELL MANOR, SUFFOLK.

Bardwell is not far from Pakenham, in Suffolk. The Manor House is a combination of brickwork, plaster and timber employed in an exceedingly harmonious and picturesque fashion. The crow-stepped parapets and diapered brick facings to the gables add a richness to the otherwise homely appearance of the place. The dignity is enhanced by several beautifully designed and hand-

WAR MEMORIALS: WORK FOR ALL THE CRAFTS.

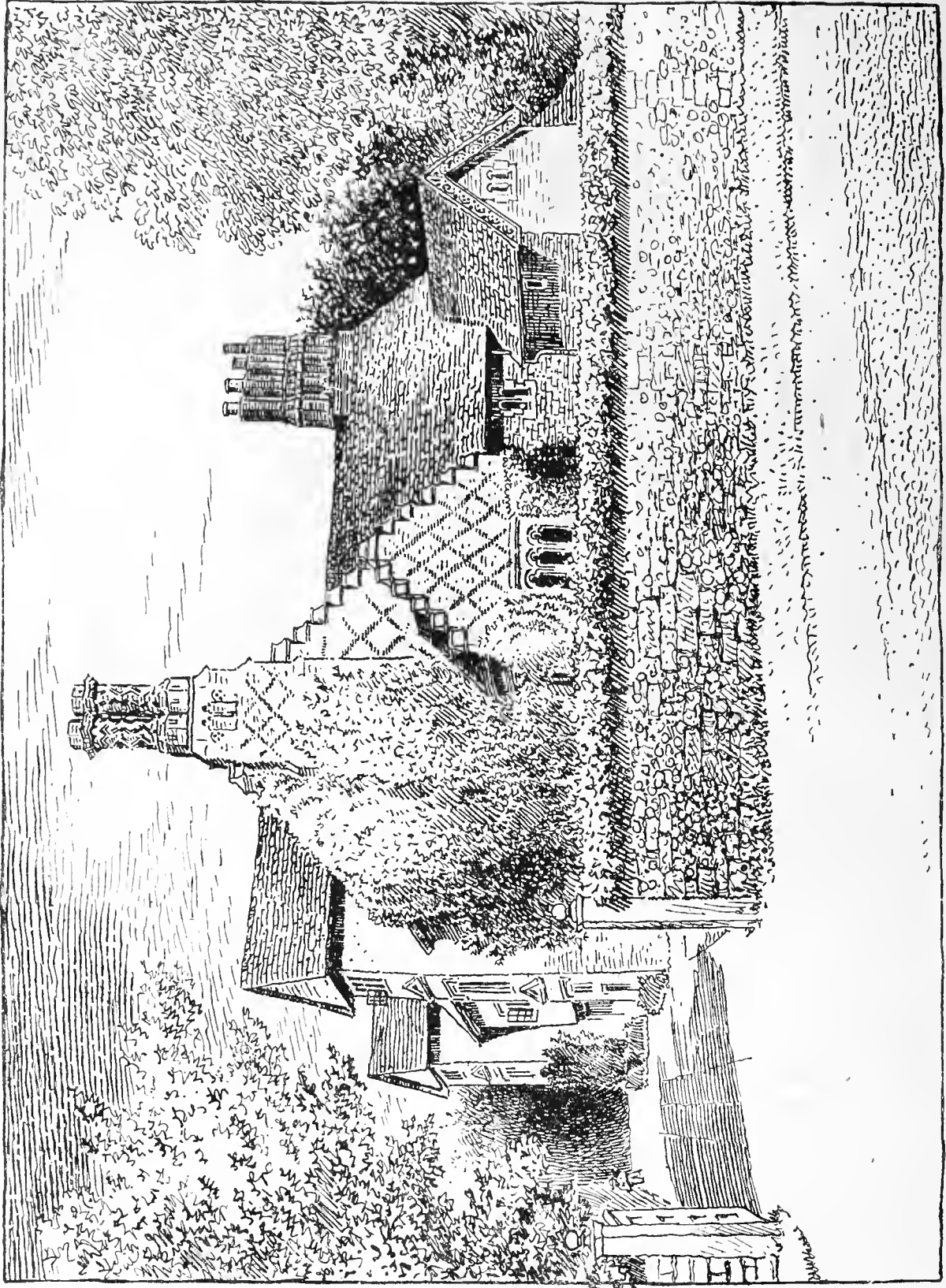
Sir Cecil H. Smith, the Director of the Victoria and Albert Museum, in a paper on War Memorials read before the annual meeting of the Church Crafts League last Wednesday, said it was in war memorials in connection with churches that the greatest opportunity was afforded of adding beauty and zest to life; at the same time, it was there that the greatest danger lay. It was essential that nothing should be done involving the alteration of or addition to an existing structure except under the soundest advice.

As regards what might be called detachable memorials, the two most general forms, no doubt, would be the stained glass window and the wall-tablet. For stained glass we were fortunate in having an excellent body of accomplished artists, and stained glass might be used to provide a monument equally appropriate for a group or for an individual, for, while an entire window was expensive, it was always possible to put a single quarry into any plain window, and it was an admirable form of memorial, although it need cost only a few pounds. The wall tablet was always a difficulty. It was not easy to avoid a monotonous effect, and very few tablets were designed to fill the places which they occupied.

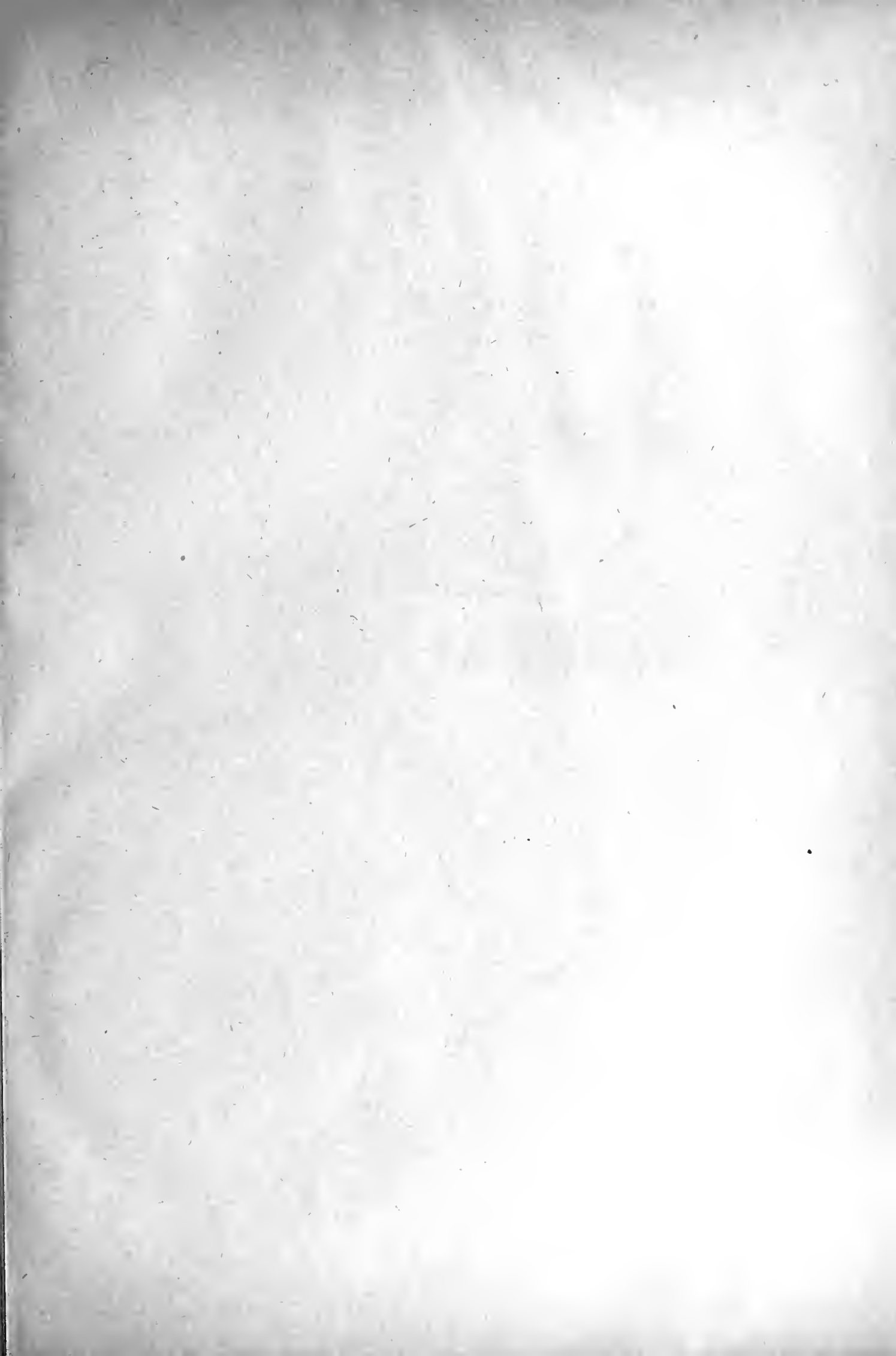
He suggested that the help of our great writers might be enlisted to do something worthy of the great days through which we had passed, something which would give to posterity an indication not only of what we felt but of the new attitude which had grown up during the war towards those who had saved civilisation for us; that lively hope, that unity with the dead, which seemed to be borne out by a comparison of what had been written during the war with much that had preceded it: "no turgid verdicts covering up the truth," but something simple and sincere, and the shorter the better. He would like to induce applicants to postpone the erection of permanent monuments for, say, a period of twelve months. In the meantime artists and craftsmen should be banded together and submit designs, not only in sculpture, painting, and architecture, but in all the crafts, to a selecting body composed not exclusively of working artists, but representative of intelligent and educated opinion. They might then have an exhibition, and issue portfolios and leaflets of advice, not for the purpose of providing models for copying, but rather for the inspiration of artists and for the guidance of memorialists as to the lines which might be followed.

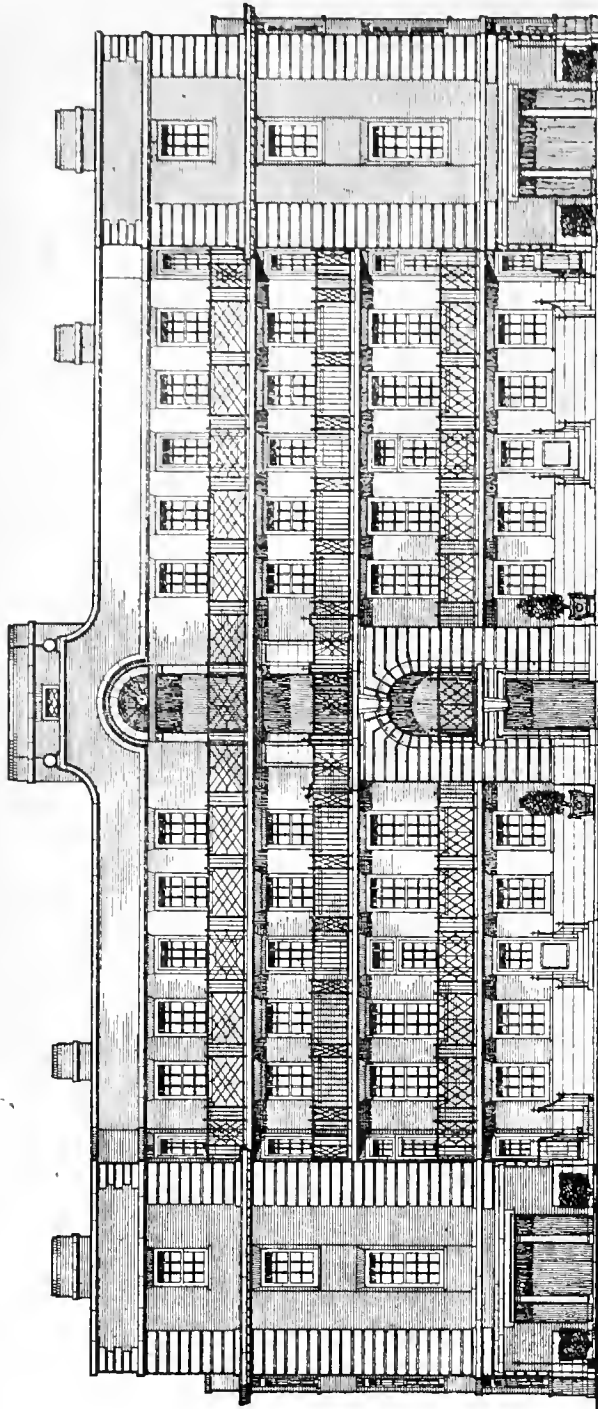
In the discussion general approval of this last suggestion was expressed.

The Victory Memorial at St. George's School, Harpenden, will take the form of an extension to the school chapel, the design for which, by Mr. H. W. Hensley, was hung in the Royal Academy Exhibition in 1916. The cost will be about £3,000. The memorial for the fallen is already completed. It is the work of Mr. Alec Hunter, O.G., and his father, Mr. Edmund Hunter, of Letchworth, and consists of oak panels, on which the names and records of the fallen are illuminated.

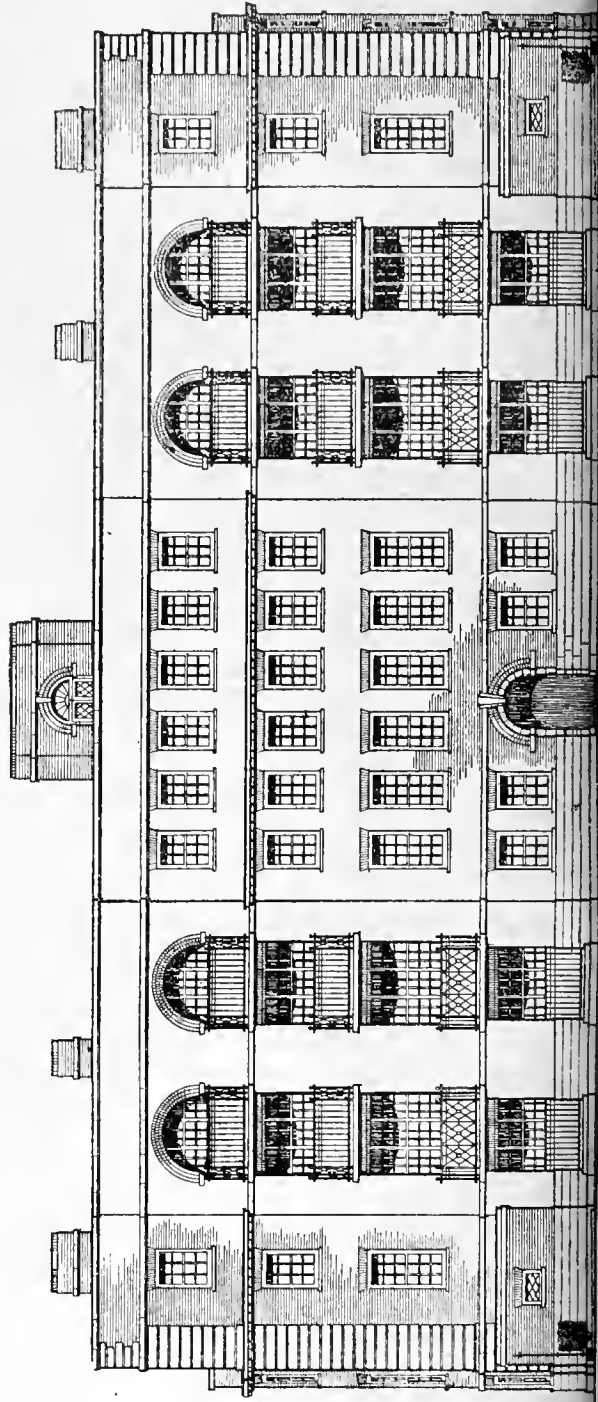


VIEW OF BARDWELL MANOR HOUSE; SUFFOLK SKETCHED BY MAURICE B. ADAMS. F.F.J.B.A.



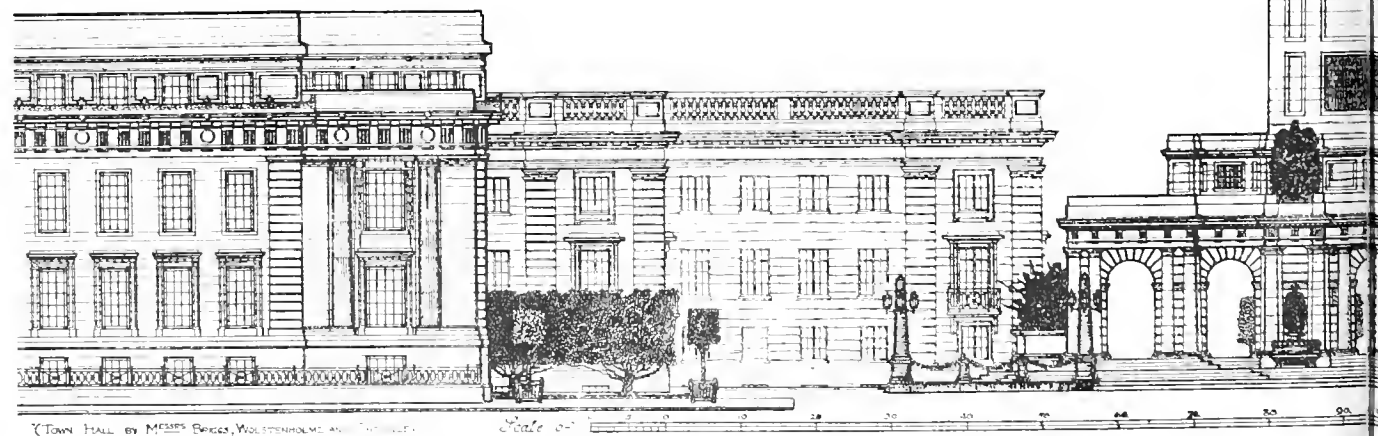
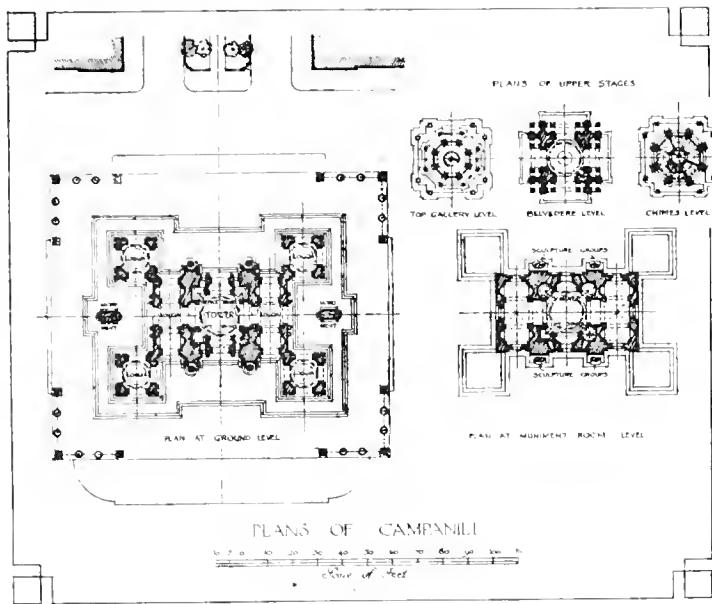


ELEVATION TO ROAD AND GARDEN





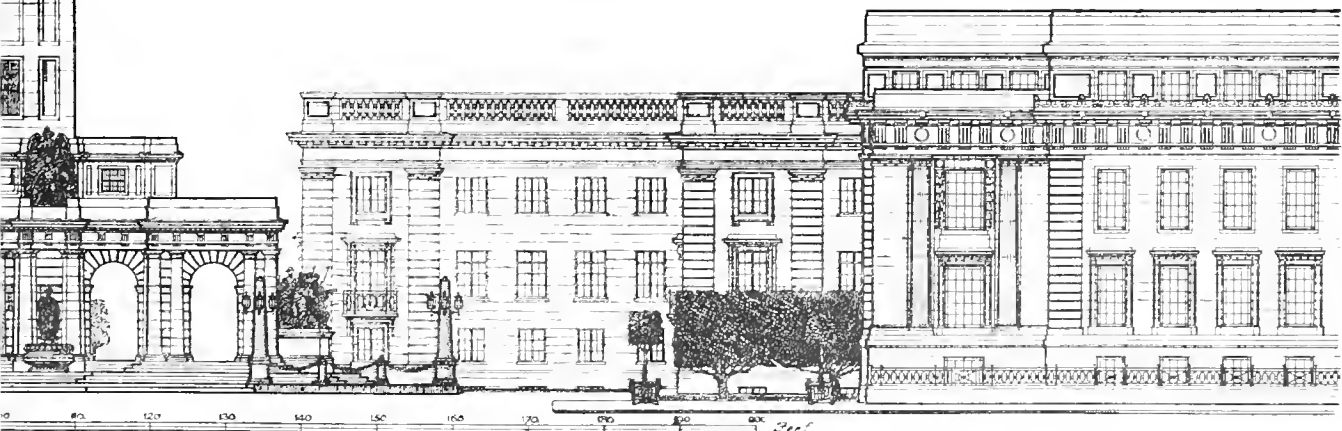
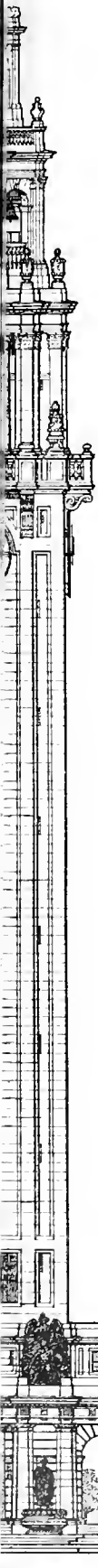
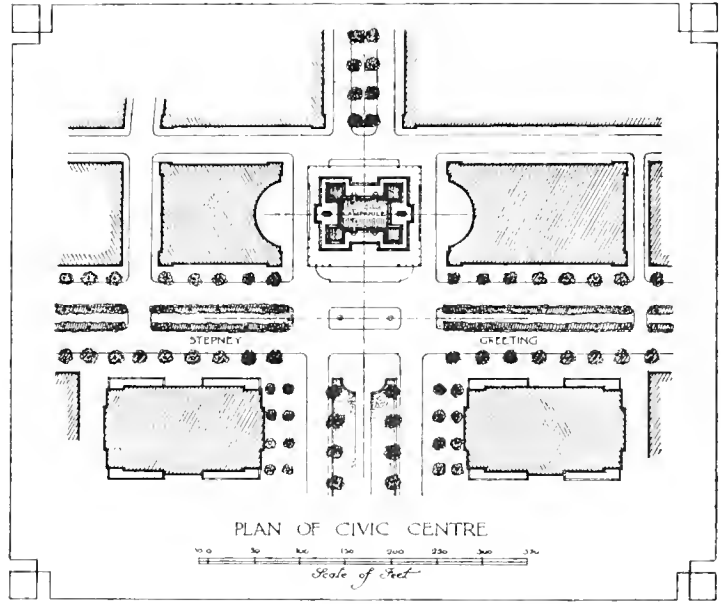
THE METROPOLITAN BOROUGH OF STEPNEY



SEPTEMBER 20TH 1918

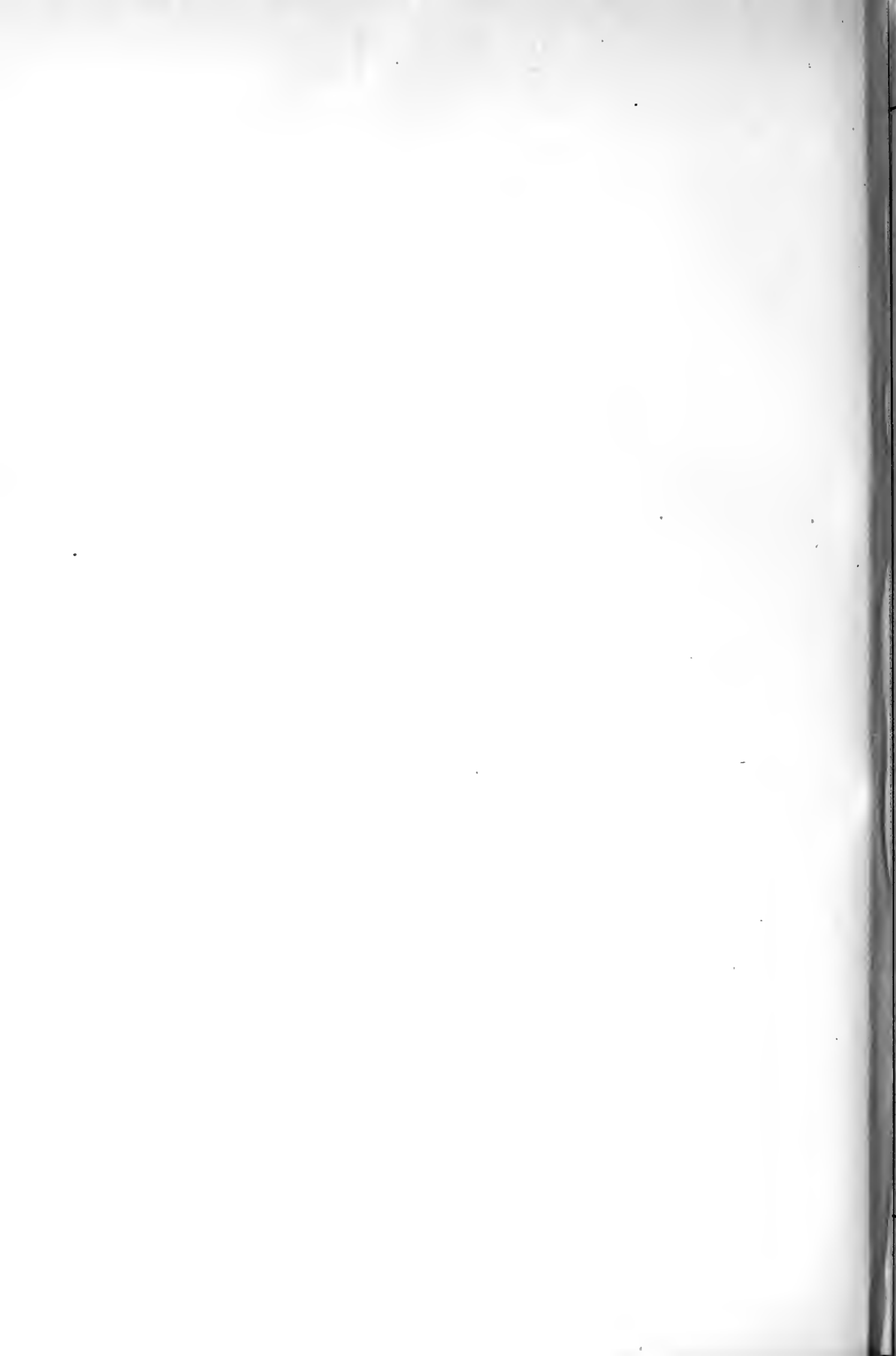


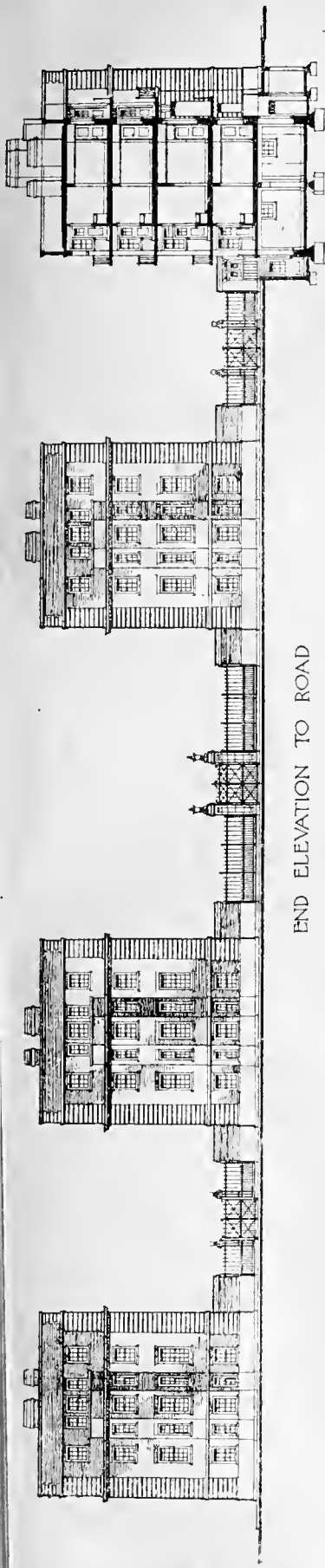
PROPOSED CIVIC CENTRE WITH CAMPANILE



ON

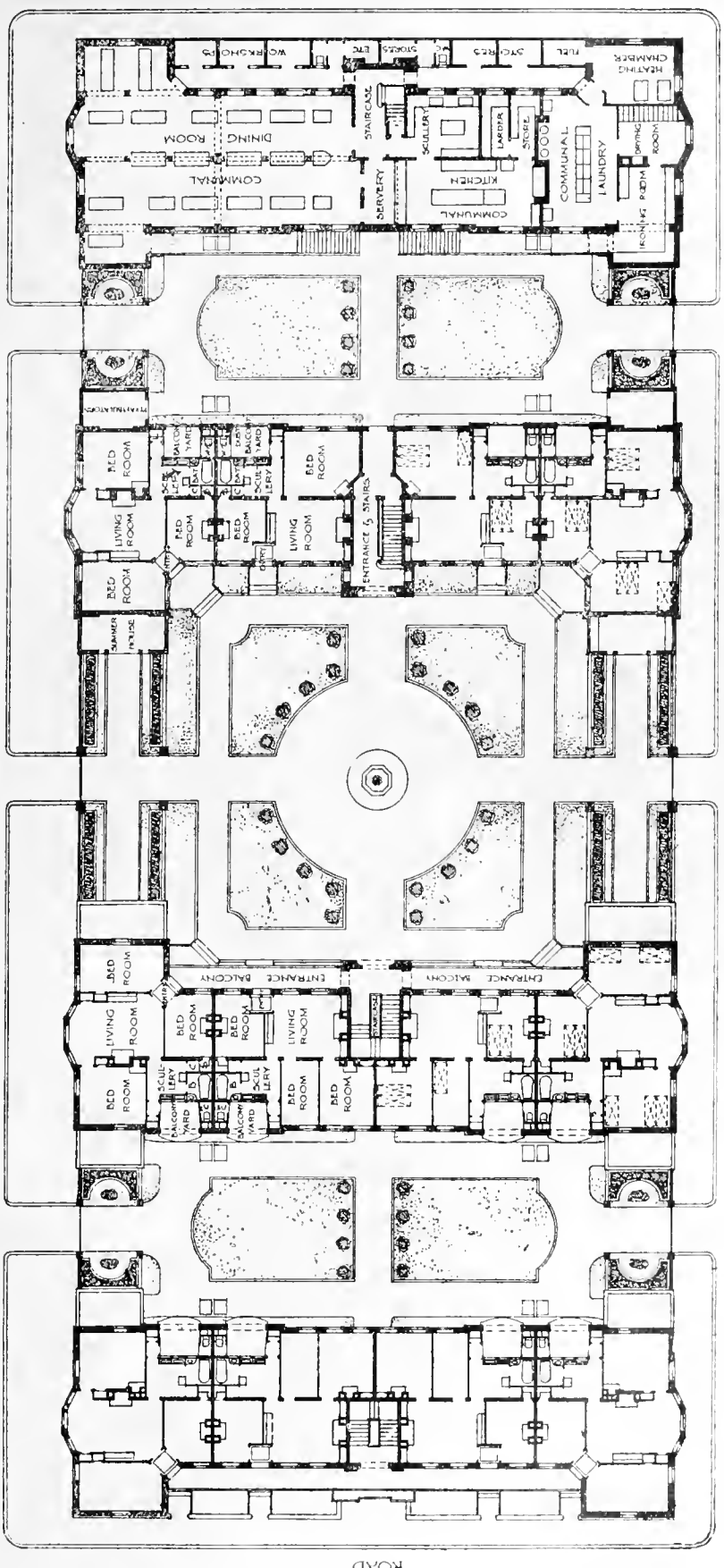
THOMAS H. MAWSON & SONS
LONDON & LANCASTER





END ELEVATION TO ROAD

CROSS SECTION



BASEMENT PLAN

GROUND FLOOR PLAN

FIRST FLOOR PLAN

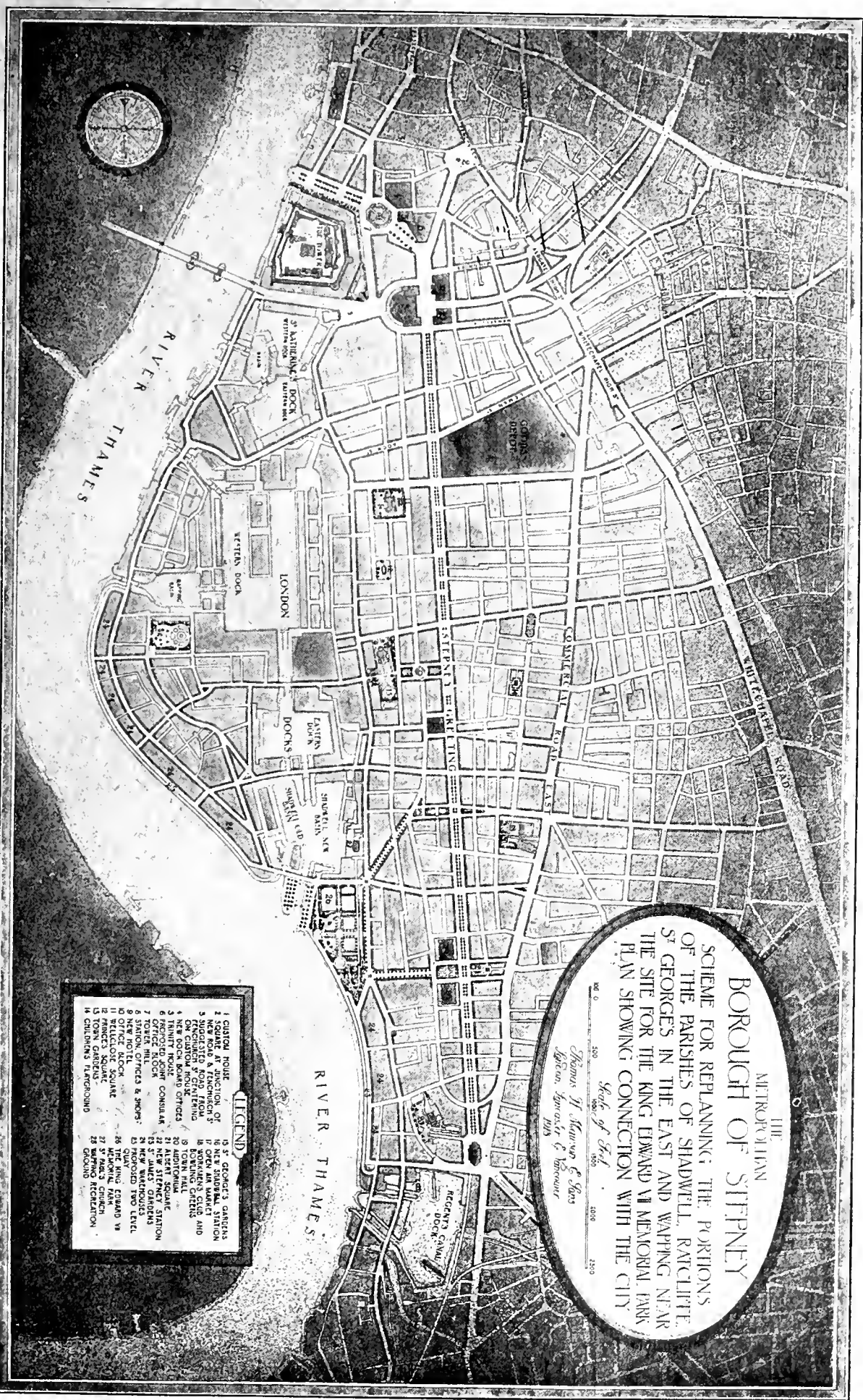
2nd & 3rd FLOOR PLAN



NEW BLOCKS OF INDUSTRIAL DWELLINGS IN TOWN PLANNING SCHEME FOR STEPNEY, E.

Messrs. THOMAS H. MAWSON AND SONS, Architects.





THE METROPOLITAN
BOROUGH OF STEPNEY

SCHEME FOR REPLANNING THE PORTIONS
OF THE PARISHES OF SHADWELL, RATCLIFFE,
ST GEORGE'S IN THE EAST AND WAPPING NEAR
THE SITE FOR THE KING EDWARD VI MEMORIAL PARK
PLAN SHOWING CONNECTION WITH THE CITY

Scale of Feet
0 500 1000 2000 2500

Thomas H. Mawson & Sons
Landscape Architects & Planners
105

- LEGEND**
- 1 CUSTOM HOUSE
 - 2 SQUARE AT JUNCTION OF NEW ROAD & TENCHURCH
 - 3 PROPOSED FOOD TOWN ON CUSTOM HOUSE
 - 4 THE LONDON BANK OFFICES
 - 5 PROPOSED JOINT CONSULAT OFFICE BLOCK
 - 6 NEW HOTEL
 - 7 OFFICE BLOCK
 - 8 FRANCES SQUARE
 - 9 CHILDREN'S PLAYGROUND
 - 10 GEORGE'S GARDENS
 - 11 NEW MARKET
 - 12 OPEN AIR MARKET
 - 13 WORKMEN'S CLUB AND TOWN HALL
 - 14 NEW MARKET
 - 15 NEW MARKET STATION
 - 16 NEW WORKHOUSES
 - 17 ST. MARK'S CHURCH
 - 18 THE KING EDWARD VI MEMORIAL PARK
 - 19 WAPPING RECREATION GROUND

TOWN PLANNING SCHEME FOR STEPNEY.—Messrs. THOMAS H. MAWSON AND SONS, Architects.

PRIVATE ENTERPRISE AND HOUSING.

A memorandum on the subject of housing has been drawn up by the Sheffield, Rotherham and District Building Trades Employers' Association, which is to be circulated among all municipalities, architects, surveyors, and others interested in the question throughout the country. The association submit the following proposals:—(1) That the fullest use be made of existing building trade resources; (2) That a special Housing Board or Committee be formed, and be under the control of the municipalities or district councils; (3) that financial assistance be extended to persons (other than municipalities) carrying out schemes which may have been approved by such board or committee.

As to proposal No. 1 the Association say:—“In our opinion it will be necessary to take advantage of all facilities existing before the war for the erection of working class dwellings. The services and resources of the house-builder, who in the past had been responsible for the erection of over 90 per cent. of this class of houses, must be utilised. If the matter were confined to municipal effort we are convinced that failure to meet the desired needs would be the result; and also that there would be a decided lack of variety in design and ideas generally. On the other hand, if the persons who in the past have been largely responsible for the erection of working class dwellings, together with general builders and architects, are taken into co-operation, we should get much better results in both design and construction and the benefit of the widest experience as regards method and form of construction and internal arrangements.”

It is suggested that the proposed Housing Board or Committee should consist of the following members:—Representatives of the municipal authorities; two builders, chiefly engaged in the erection of working class dwellings; two general builders, not necessarily housebuilders; two architects; two surveyors and valuers; two representatives of the operatives; female representation should also be considered. The Board should continue to act until prices return to somewhat near the pre-war level, and rents reasonably increase, in order that houses can be built to show a fair return on cost without State assistance.

Amplifying their third proposal, the Association say:—“We are of opinion that unless an amount equal to the increase of cost over pre-war prices is granted to the private builders, or to persons submitting schemes through the municipal authority, it will not be possible for them to erect houses to let at a reasonable rental proportionate to the pre-war rental, for some years after the war, as we do not anticipate that materials and labour will come down in cost to anything like the pre-war level for a number of years, if ever. Before the builder could erect houses without this financial assistance it would be necessary, in order to obtain a reasonable return on his outlay, to raise rents to an extent which we think would be much greater than the occupiers would, or could afford to, pay. We consider that municipalities or other public bodies should have power to extend assistance to persons submitting schemes as suggested, and at the same time receive the benefit of the Government assistance with regard to such schemes. We cannot see what difference it would make whether the municipalities carried out schemes direct or sanctioned schemes, after the approval of the proposed Housing Board, assisted financially as suggested, provided that direct control is exercised by the municipality over such schemes. If the municipality carry out the housing direct they are responsible for raising the full amount required, including the whole of the extra cost as between pre-war and post-war; whereas in connection with all schemes to be approved by the proposed Board the municipality would only be responsible for raising the amount of the extra cost.”

The next ordinary general meeting of the Surveyors' Institution will be held on Monday, February 24, 1919, commencing at 5 p.m., when an adjourned discussion will take place on Mr. Easton Hills' paper on the Second Report of the Committee on the Acquisition and Valuation of Land read at the last meeting.

Correspondence.

PROPOSED TESTIMONIAL TO MR. ERNEST NEWTON.

To the Editor of THE BUILDING NEWS.

Sir,—Now that the war is practically over, and Government controls and licences are being rapidly swept away, it is felt by many members of the architectural profession that some kind of recognition is due to Mr. Ernest Newton for the invaluable services which he has rendered to the profession, the building trade, and the country in general, in administering the building licence regulations issued under “D.O.R.A.,” and for the unvarying and unflinching courtesy, tact and consideration which he has shown in dealing with all applications during the whole period that the order was in force.

It has accordingly been decided to present Mr. Newton with some form of testimonial, and in order that all who desire to associate themselves with such gift may have an opportunity of showing their appreciation, the subscription from any one person is limited to half-a-guinea, or any less sum. I have been requested to act as hon. treasurer in this matter, and shall be pleased to receive subscriptions at the R.I.B.A., 9, Conduit Street, W.—Yours faithfully,

LEWIS SOLOMON.

Royal Institute of British Architects,
Incorporated in the Seventh year
of William IV. and the fiftieth of
Victoria.

9, Conduit St., Hanover Sq., London, W.1.
Jan. 28, 1919.

PROFESSIONAL AND TRADE SOCIETIES.

THE SOCIETY OF ANTIQUARIES.—At a meeting of the Society of Antiquaries at Burlington House last Thursday evening, Captain R. Campbell Thompson, F.S.A., read a paper on the excavations which he had conducted on behalf of the British Museum at Abu Shahrain, in Mesopotamia, while serving with the Mesopotamian Expeditionary Force. The results were described as of the highest importance for Babylonian pre-history, which has hitherto been the subject of scant attention owing to lack of evidence. But more important still is the pottery, which is of buff, wheel-turned clay, painted with geometric designs in black, exactly of the same kind as that occurring in the lowest stratum (20 to 25 metres depth) found at Susa by M. de Morgan. Writing was unknown to the earliest men of Eridu, but their skill in working clay and stone shows that they were fairly civilised when they migrated thither from whatever may have been their earliest home. Lack of metals compelled them to make even their sickles of baked clay, and these occur so frequently as to show that the early men there depended greatly on cereals for their food, while the freshwater mussel shells appearing in low strata indicate that at that time the Euphrates, which must have flowed close by, was counted as a source of supply. It is suggested, therefore, that these are relics of pre-Sumerian man, who occupied the lower part of Southern Mesopotamia before the Sumerian migration thither.

It is proposed to erect a road screen in Henley Parish Church as a war memorial.

Peppard's (South Oxon) war memorial is to take the form of a public institute and a memorial cross.

The St. Pancras B.C. has authorised the Housing Committee to obtain plans for building houses on the Prince of Wales Road site.

It has been decided to convert the old town hall at Upton-on-Severn into an assembly hall as a war memorial. An architect will be engaged to prepare plans.

The Wembley Urban District Council has decided to purchase the necessary land in the district on which to build 180 houses as a first instalment, and these they hope to let at an average rental of 12s. a week. Whether to be built by municipal enterprise or put out to contract has not yet been decided.

Our Office Table.

In connection with the Government policy of affording temporary assistance for the provision of houses for the working classes at the present time, Dr. Addison, the President of the Local Government Board, has appointed Sir James Carmichael, K.B.E., building contractor, London, and Chairman of the Munitions Works Board, as Director-General of Housing in England and Wales, in charge of the departmental organisations set up for the purpose of carrying the policy into effect. Local Housing Commissioners, who will act under Sir James Carmichael's direction, are being appointed to assist local authorities in the preparation and execution of schemes of housing, and the central staff is being augmented by the appointment of various technical experts.

The report of the Committee appointed by the President of the Board of Education to advise as to the buildings which will be required for compulsory continuation schools has been issued as a White Paper (Circular, 1086). The Committee recommend that abnormally large schools with accommodation for more than 2,000 students (400 at one time) should not be provided. Existing technical schools and schools of art should be relied on for most of the accommodation required for technical instruction. The immediate erection of very large numbers of new buildings is not desirable. The cost of new buildings at pre-war prices will be about £30 per school place, or £6 per student in attendance. The cost of equipment will be about £6 per school place, or £1 4s. per student.

One question to be raised at the forthcoming London County Council elections is the proposal to create a new central authority to supervise the government of “Greater London.” The area over which the body would have jurisdiction, it is suggested, should be not smaller than the Metropolitan Police district and not larger than that of London and the Home Counties. In principle such a scheme has the general support of both the Municipal Reform and the Progressive parties, and at yesterday's meeting of the London County Council the following resolution was moved by Mr. A. H. Hume, the Municipal Reform leader, and seconded by Dr. Scott Lidgett, the Progressive leader: That it be referred to the Local Government Records and Museums Committee to consider and report as to the steps which should be taken with a view to securing such a reform of the local government of London as would set up an authority with defined administrative powers and, if deemed desirable, with added powers at present exercised by Parliament, for an area not smaller than the Metropolitan Police district and not larger than that of London and the Home Counties; and such authority securing a unified administration of defined government services within this area.

The centenary of the birth of John Ruskin next Saturday will be observed by a public meeting, organised by the Ruskin Centenary Council, at the Royal Society of Arts, John Street, Adelphi, W.C. Lord Bryce will preside and centenary addresses will be given by Mr. J. W. Mackail and Mr. Henry Wilson, chairman of the Arts and Crafts Exhibition Society. The council have also arranged for an exhibition of Ruskin's drawings, etc., to be held this autumn probably at Burlington House. Offers of the loan of pictures, books, manuscripts, etc., may be addressed to Mr. J. H. Whitehouse, hon. secretary, Ruskin Centenary Council, 13, Hammersmith Terrace, London, W.6. There will also be a Ruskin Exhibition at the Institute, Coniston, from the last week in July to September 1, and a conference will be held in connection with this exhibition from August 6 to August 12. In co-operation with the Centenary Council the London Rambling Club have arranged a series of lectures at Ashburton Club, 28, Red Lion Square, W.C., on February 10, 11, 12, 13, and 14 at 8 p.m.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

King Edward Memorial Park at Shadwell. Part of the Town Planning Scheme for Stepney, E. Elevations and section of riverside warehouses intended to provide two thoroughfares—one as an esplanade and one as a quay—skirting the

Strand, W.C.2

Thames. Messrs. T. H. Mawson and Sons, Architects.
 A Pair of Country Cottages for Workmen. Plans and elevations, with four perspective sketches showing the adaptation of this building to the Home Counties (in brick), to Berks and the West of England (in cob walling, roofed with thatch), in timber, plaster-facing, brick, and tile (for Kent and Hereford), and for Gloucestershire (in stone and stone slates). Mr. Philip Tilden, Architect.

Currente Calamo.

An exhibition of economical building material was held in Berlin in November and December. The building materials shown were not intended to be substitutes, but were exhibited with the intention of enabling builders to carry out their work with greater economy and improved methods. No bricks have been used, as it is very probable that the German brickyards will be handicapped for a long time through shortage of fuel. Special endeavours have been made to find improvements which will enable building to be done as quickly as possible. This can be done best by utilising material which can be very rapidly made and will still be weatherproof. Hollow concrete blocks have proved very useful for this purpose. Concrete is also shown to take the place of bricks for roofing and covering the walls and floors. A new kind of wood material is exhibited which is recommended for lining walls and ceilings and for door frames. This wood material has been used extensively during the war in the aeroplane industry. It consists of several layers of thin wood fixed together with a mineral glue with the fibres crossing each other, and its special advantage is that it is durable and will not crack. It can be manufactured cheaply, even at the present time.

To test the qualities of sandstone the Bureau of Standards at Washington have designed and set up an ingenious machine. Inside a boxlike wooden structure five to six feet high and two and a half feet square a miniature elevator is raised and lowered by the revolutions of a threaded hoisting shaft driven by an electric motor. Walls, top, and bottom of the structure are well insulated with layers of ground cork and heavy boards. At the top of the inner chamber, surrounding the elevator, pipe is coiled, to be filled with steam under pressure. Similar coiled pipes occupy the lower half of the chamber, and are filled with ammonia vapours, to produce a freezing temperature. By placing a water-soaked sample of sandstone on the elevator and subjecting it first to the freezing temperatures of the lower half of the machine, then raising it and thawing it out in the steam-heated upper portion, all

the effects of alternate freezings and thawings, such as the stone might experience in the open, can be produced. Continuous operation of the machine makes possible as many freezings and thawings in a single day as would normally occur in two or three years. The disintegration produced, determined by weight, gives an indication of the stone's durability. Suitable partitions on the elevator prevent the air of the two halves of the inner chamber from intermingling. An electrically driven fan circulates air around the stone. A clock operates the machine automatically, closing the circuit through the hoisting elevator's motor at definite intervals.

Research was recently started by the U.S.A. Forest Products Laboratory to determine the "killing points" in temperature and humidity of common fungi found in American buildings. Field and laboratory studies indicate that much more care should be exercised in the selection of timber and in the construction of buildings to avoid conditions favourable to decay. A number of inspections of buildings which have given trouble on account of decay have shown that any one of the following causes may result in rapid deterioration of the building:

1. The use of green timber.
2. Allowing timber to get wet during construction.
3. Allowing the timber to absorb moisture after the building is finished because of leaks or lack of ventilation.
4. The use of timbers containing too much sapwood.
5. The use of timbers which have already started to decay.

The avoidance of these conditions will, as a rule, prevent decay. In special cases, however, decay can only be prevented by preservative treatment. It is stated that for this purpose salts, such as zinc chloride and sodium fluoride, are better than creosote for buildings.

Now that concrete ships are being built by hundreds it seems likely that the material will ere long be as frequently used for land carriage. According to the *Handelsblad* of December 4, 1918, a Mr. H. Sebellee recently conceived the idea of constructing goods wagons in ferro-concrete to meet the home shortage, and in anticipation of a large and continuous demand for railway and tramway wagons throughout Europe as a result of the war. A trial wagon was

produced to carry six tons, the body of which was cast in one piece. The result exceeded all expectations, and a second improved car, judged from the standpoint of durability, resistibility to concussion, weight, upkeep, and price, led to the conclusion that ferro-concrete is bound to supplant iron in the construction of rolling stock. A limited liability company has been formed, and works are in course of erection at Doetinchem, and it is hoped to be in a position to supply orders within seven weeks.

PNEUMATIC CONCRETING.

A recent development in concrete construction in America seems worth attention here, especially for heavy work. Whether it will get it, to any greater degree than the cement gun, is another matter. It is, however, totally different from the cement gun process, which is a plastering process, while the pneumatic method simply consists in blowing batches of concrete through a pipe from a central point of supplies to their position in the concrete forms. The materials for a batch of concrete, half a cubic yard, are proportioned in a measuring device, and dropped into the pneumatic mixer without previous mixture.

Mr. H. B. Kirkland, the president and chief engineer of the Chicago Concrete Mixing and Placing Company, gives some particulars in a paper recently read by him before the American Western Society of Engineers.

THE MIXER.

The mixer consists of a steel shell having the shape of an inverted cone surmounted by a cast steel cylinder in which the door operates. The door is operated by a small air piston which closes the flap door. The door is opened by releasing the air in the cylinder, allowing the door to drop open by its weight. At the bottom of the inverted cone chamber is a 90 degrees elbow which forms the connection to the discharge pipe. The door and piston is the only moving part of the mixer and the inside contains no mechanical mixing apparatus and is entirely smooth and free from obstructions. The main air jet is located at the heel of the bottom elbow of the mixer. This jet is the main means of conveying and mixing the concrete. It is supplemented

by air jets located at top of the mixer. The main air jet is directed into the centre of the discharge pipe, where it catches the material as it falls from the cone-shaped hopper above. The upper air jets create a pressure from above the batch, forcing it downward into the discharge pipe where it is caught by the main jet. To admit air to the mixer, two valves are used, one detaching successive portions of batch at the tip of the cone. The materials in the mixer flow downward in the same manner that sand flows from the upper chamber of an hour-glass, but

thickness on the outer curve. This gives a weight of about 220 lbs. for an 8 inch elbow and they are not made longer than 45 degrees. The radius of the el is three feet minimum, as a shorter radius is too sharp a turn and causes plugs in the line. Shorter radius els may be used, however, if used at the discharge end of the pipe. A split elbow of 90 degrees is also used for six inch pipe. This el is split lengthwise so that the outer half of the curve which usually wears rapidly may be replaced.

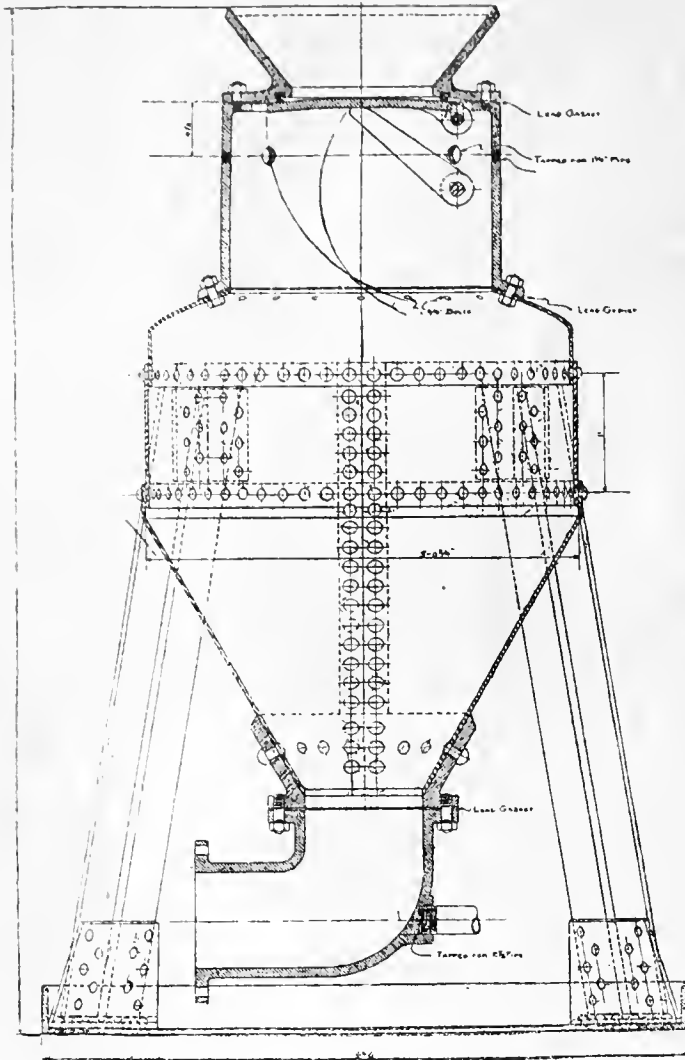
A means of deflecting or guiding the

ing. When possible, it is desirable to locate the plant near the mixer, but it is necessary to provide air storage close to the mixer, sufficient, at least, to store enough air to discharge a batch of concrete at the maximum distance required. This storage should be at least 100 feet capacity, with 30 cubic feet capacity added for each 100 feet of pipe line. There should be additional storage at the compressor if the mixer is located a considerable distance away (for example, more than 300 feet away).

The amount of air required to convey concrete depends upon the specific gravity of the materials, the smoothness of the pipe, the number of bends in the pipe line and their radius, the distance conveyed vertically and horizontally, and upon the pressure or velocity of the air used. For the standard size mixers the amount of air required is two cubic feet of actual free air compressed to 100 lbs. per square inch per lineal foot of pipe per batch. In other words, to convey one batch 500 feet it will take 1,000 cubic feet of actual free air compressed to 100 lbs.

Based upon this figure, Mr. Kirkland submitted a curve to show the amount of air required to convey concrete at various distances. This curve is based upon practical observations on a number of jobs, and certain assumptions have also been made in order to complete the figures. It is assumed in this curve certain conditions of the concrete operations are as follows: twenty seconds are allowed for opening the door and charging the mixer after each batch has been discharged and the air valves closed; five seconds are taken as the length of time to convey each batch 100 feet, and as the distance becomes greater the number of batches per hour decreases until with 2,500 feet the number is twenty-four, and the amount of air at this distance is 2,000 cubic feet per minute. It should be borne in mind that if it is desired to get the maximum output possible, the capacity of the compressor should be great enough to build up the air pressure in the storage tank in the time required to shoot a batch. Thus, if the distance is 1,000 feet, it will require 2,000 cubic feet of free air compressed to 100 lbs., and the time required to shoot the batch will be fifty seconds plus the time required for loading the next batch (twenty seconds), or a total of seventy seconds. This requires, then, for a maximum capacity of operation, a compressor which will provide 2,000 feet of air in seventy seconds, or 1,700 feet per minute. It should be borne in mind also that we are speaking of actual air and not of compressor ratings. A 600 foot compressor will produce actually about 430 feet of free air or eighty per cent. of its rating.

One of the first questions asked by the engineer is, "How is the concrete mixed?" This is explained by making a study of the conditions which affect the batch from the time it is placed in the mixer until it is delivered in place in the forms. In loading the mixer the ingredients, cement and water, are usually placed in a measuring hopper so that when the hopper is emptied into the mixer the first commingling of the ingredients takes place. This first commingling is not particularly important, as it is very slight. When the air is turned on that portion of the batch which is at the bottom of the mixer, in front of the conveying air jet, is first to move and is instantaneously followed by portions dropping from above. As the mixer has the shape of an hour glass, the central portion of the batch in the mixer flows down first, and the portion in the sides



Section of Half Yard Pneumatic Mixer

the speed of the flow is accelerated by the air pressure.

THE CONVEYING PIPE.

The conveying pipe consists of any standard smooth steel pipe with joints made with bolted flanges or any type most easily and rapidly handled in making connections. The most rapid wear on pipe occurs at the joints where there is apt to be a slight irregularity or a shoulder. Threaded pipe is also thinner where the threads are cut and, of course, wears through there first. For this reason it has been found cheaper to use standard pipe with bolted flanges screwed on. For making deflections of the pipe line, cast elbows are used. An ordinary cast iron elbow will last sometimes less than a day, but a case-hardened steel elbow will usually last a few weeks. The best elbow is a cast manganese, which will almost outlast the pipe itself. These elbows are made in 45 degrees with a thickness of 5-8 inch on the inner curve and 7-8 inch

discharge of concrete in the forms consists of a series of slightly tapered pipes, fitting together like a stovepipe. Two or three sections of this light pipe about three or four feet long are all that are needed in a tunnel form for diverting the discharge from one side wall to the other and for guiding the concrete discharge around points of rock projecting from the roof. Where the tunnel is very wide, however, as in a double track railroad tunnel, we have used a "Y" branch in the line, thus separating the line into two lines of pipe entering the tunnel form. A slide valve or gate is placed in the "Y" for diverting the batches through one line or the other.

COMPRESSED AIR PLANT.

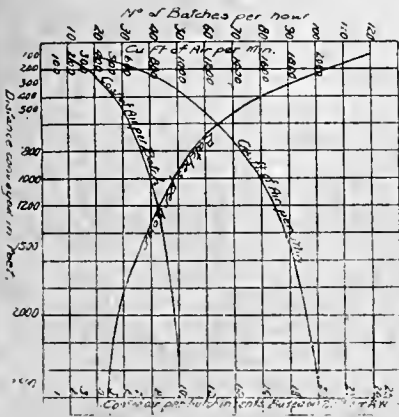
A suitable type of compressor and the one usually employed in a straight line, one or two stage machine compressing from 80 to 125 lbs. The motive power may be steam, oil or electricity, as is most economical under the conditions prevail-

follows in the stream from the upper part, exactly as sand flows in an hour glass. During this operation the mingling of the different ingredient parts causes the smaller ingredients to flow into the voids between the larger ingredients. As the portions of the batch drop into the lower air stream, which has a velocity of about 5,000 feet per minute, these portions are carried along in suspension much as dust is carried along in a storm, except that the particles are much closer together. Although the speed of the air jet is very high, the speed of the concrete materials is much slower. The speed of the concrete varies according to the amount of voids in the materials which permit the air to pass through. The air in passing through the voids tends to carry with it the smaller ingredients; that is, the sand tends to fill the voids between the rocks and the cement tends to fill the voids remaining, and, as the voids become filled up with the smaller ingredients passing through, the speed of

with materials through a chute from the various corresponding points along the surface. The last is a form of central plant made semi-portable.

One of the jobs done under the first scheme was the construction of piers for the Otis Steel Plant, at Cleveland. Another was the lowering of the west end of the Van Buren street tunnel, in Chicago. Another was the lining of the Chain of Rocks tunnel, which is an 8-ft. tunnel under the Mississippi, north of St. Louis.

The concrete, in discharging from the pipe at a velocity of about 100 ft. per second, is discharged against the back end of the arch, where it flows down over both sides and assumes about a 30° angle, sloping forward. When the form is filled so that the arch is within a foot or so of the pipe, the last section of the pipe is removed, so that the end of the pipe is then projecting just through the bulkhead, and the balance of the section is completed. The concrete is blown in until the concrete is within a foot of the pipe, and this last portion of the arch may be filled nearly full by discharging a small batch of the proper volume. The usual practice, however, is to move the form forward until it just overlaps this little cavity.



Curves showing amount of Air required to convey Concrete at various distances.

the mass increases, the pressure of the air behind the mass increases with the decrease of the voids in the mass, and the speed of the mass concrete increases.

Now, in this explanation of the mixing process, it is assumed that the air velocity passing through the pipe is sufficient to keep the materials in suspension, and it is important to have a sufficient air pressure to keep the materials in suspension, because when the air velocity is reduced the materials simply roll and tumble along the bottom of the pipe. The concrete will also mix in this manner, but it is not conducive to good operation and makes a dirty pipe line, which is liable to become plugged. In shooting concrete, therefore, it will be found that with an eight inch pipe and with materials of the specific gravity of limestone, the pressure should not fall below fifty pounds, as the materials will then commence to drag along the pipe. Any air expended below twenty-five pounds is wasted when blowing concrete through an eight inch pipe.

EXAMPLES OF WORK.

Three general types of pneumatic installations have been developed through the requirements of different classes of work. There are (1) Central plant or scheme of locating the mixer at a central point from which the conveyor pipe is laid to the forms, (2) Portable plant or outfit upon which the same mixer is carried and is either loaded from bins carried on the same conveyance or supplied by a belt or other loading device, and (3) the scheme of loading the mixer at various points as at the bottom of man-holes in shallow tunnels and supplying it

Our Illustrations.

KING EDWARD MEMORIAL PARK AT SHADWELL.

This elongated riverside triangular open space for the park at Shadwell close by the "New Basin" is shown by our double-page view as developed and laid out by Mr. T. H. Mawson's plan for the "King Edward Memorial" as part of the general town-planning scheme of which we gave the general plan in last week's BUILDING NEWS. The accompanying bird's-eye view gives an excellent idea of the proposed arrangement. To the extreme left are two organised playgrounds for boys and girls. On the northern side in the central area are placed a pair of large bowling greens, and to the right extremity of the park, towards the apex of the triangle, is seen an open-air orchestral theatre with a covered-in ample stage. The semi-elliptical and pleached avenue on the south encloses two ornamental garden plots with statues in the centre of their lawns. The bisecting avenue which crosses the park is opposite to the "Rotherhithe Tunnel space" on the Thames, where the domed edifice appears in the picture. Skirting the river an embankment road is contrived with an avenue of trees closely planted as a screen surmounting the balustraded wall.

PROPOSED NEW WAREHOUSES AND ESPLANADE ON THE THAMES FRONT.

This geometrical double page also belongs to the same set of town-planning drawings by Messrs. T. H. Mawson and Sons. It illustrates a suggested setting back of the warehouses along the water-way frontages at Stepney by furnishing a higher as well as a lower public thoroughfare on the north bank of the Thames in the Borough. One is to form an esplanade for general traffic and as a pleasure resort, the other one to be a quay sufficiently high above spring tide level and so contrived to receive merchandise on the same plane as the basements of the contiguous warehouses. The drawings which we gave last week included the war memorial campanile and

civic centre for the borough of Stepney, some of the new blocks of industrial dwellings with communal kitchens, dining rooms, and laundries. Likewise the general lay-out of the scheme.

A PAIR OF COUNTRY COTTAGES FOR WORKMEN (MODEL PLAN).

The following notes sent us by Mr. Philip Tilden, the architect of these cottages, furnish particulars concerning same:—

"Information gathered from many sources and districts in England has enabled me to form a list and get the sizes of accommodation required for these new cottages which are to be built. The accompanying plans show this accommodation, and great pains have been taken so that not one cubic foot of space is wasted or unnecessary. The extra accommodation in the roof over the larder and bathroom parts is sufficient to take a couple of rain-water tanks should it be possible to afford them.

"The four perspective sketches are suggestions merely to show, primarily to the man in the street, the many ways in which such cottage plans may be treated to suit the local materials. It should be our aim now in England for us to economise where we can, especially in transport, and the using of local materials involving the opening up of quarries, brick-fields, and so on, will enable us to utilise our available labour at a time when it needs distributing, and also to develop natural resources. Purely from the architectural point of view, we must press this matter home, for all architects are anxious that our traditional architecture should be nursed and carried on, so that future generations cannot say that it was we who allowed the colour of England to go and the beauty of her local traditions to get lost entirely."

HOUSING OF THE WORKING CLASSES.

The President of the Local Government Board informs us that his Majesty's Government have reconsidered the terms of financial assistance previously promised to Local Authorities in connection with the provision of houses for the working classes at the present time, and that Parliamentary approval for these proposals will be obtained at the earliest practicable date.

In accordance with the revised scheme the terms set out in the paragraphs numbered 2 and 3 of the circular letter of March 18, 1918, will be superseded by the following terms:—

ASSISTED SCHEMES.

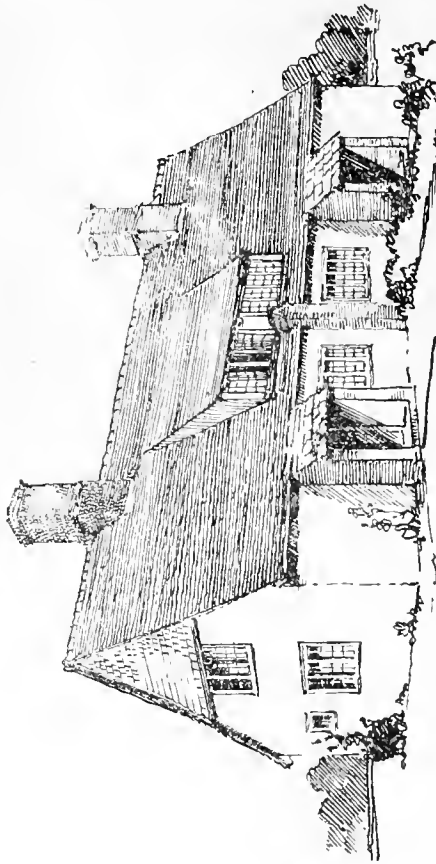
(a) The housing schemes of Local Authorities to which the State will be prepared to grant financial assistance, if they are submitted to the Local Government Board within twelve months from February 6, and carried out within a period of two years from this date, or within such further period as may be approved by the Local Government Board, are:—

(1) Schemes carried out by Local Authorities under Part III. of the Housing of the Working Classes Act, 1890, for any area for which the Local Government Board are satisfied that it is desirable that houses for the working classes should be provided.

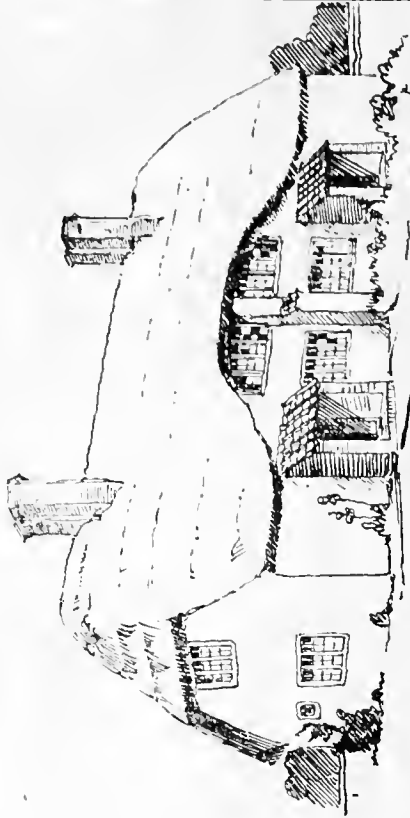
(2) Rehousing schemes in connection with Improvement and Reconstruction schemes under Parts I and II. of the Housing of the Working Classes Act, 1890, except that no part of the cost of acquiring and clearing a site would be made the subject of financial assistance if either (a) the site had been acquired or cleared before the date of this letter, or (b) the needs of the district could, in the opinion of the Local Government Board, be adequately met by means of a scheme under Part III.

LOANS.

(b) The full cost of a scheme will in the first instance be met out of a loan or loans raised by the local authority, and it is

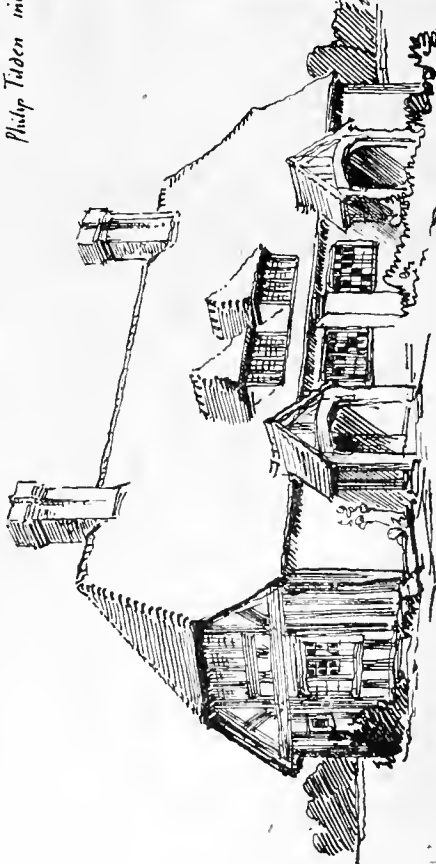


Plastered Brick and Tile or Brick and tile, as for Home Counties

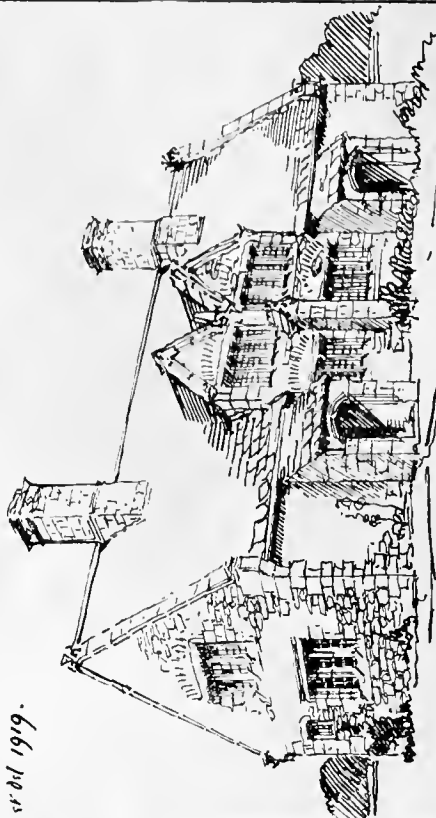


Cob Walling & Thatch as for Berks, or West County with Stone Dressings

Showing how the same Plan for a Pair of Cottages can be adapted to Local Materials



Timber Plaster Brick & Tile. as for Kent or Hereford



Stone & Slate or Stone Slates as for Gloucestershire.

Philip Tilden inv. & del. 1919.

particularly desired by the Treasury that Authorities should raise such loans in the open market wherever it is possible for them to do so. As the financial assistance to be granted from public funds for housing schemes will take the form of a subsidy, and as it is important to secure that the whole of the State assistance may be given under one head, any loans granted from the Local Loans Fund for the purpose of assisted schemes will not be made at the preferential rates ordinarily allowed for housing loans, but at a rate fixed by the Treasury so as to correspond with the full current market rate of interest.

GENERAL PRINCIPLE OF FINANCIAL ASSISTANCE.

(c) In respect of any housing scheme or series of housing schemes carried out by a Local Authority within the period referred to above, Parliament will be asked to vote financial assistance calculated on a basis estimated to relieve local authority of the burden of any annual deficit in so far as it exceeds the produce of a rate of a penny in the £ on the area chargeable, but there will be no contribution towards the cost where the annual excess of expenditure over income would not exceed that amount.

PROVISIONAL ESTIMATES.

(d) In order to avoid delay in the commencement of schemes the settlement of the actual amount of the State subsidy will be deferred until after the houses have been built and let, but payments on account will, if necessary, be made on provisional estimates of income and expenditure approved by the Board.

SETTLEMENT OF SUBSIDY DURING TRANSITIONAL PERIOD.

(e) When the houses have been built and let the amount of the subsidy to be paid thereafter during a transitional period ending March 31, 1927, will be settled on a basis of a revised balance-sheet showing the actual expenditure incurred and the actual rents obtained. The interest charged on loans will be taken at the amounts actually to be paid if the loans are raised from the Local Loans Fund or other outside sources. Where the money is provided from accumulated funds in the hands of the local authority interest will be calculated at the rate in force for loans for assisted housing schemes from the Local Loans Fund (unless the local authority is also borrowing from other outside sources in respect of its scheme, in which case interest should be charged on advances from accumulated funds at the rate paid for the loans from such other outside sources). Where there is found to be a deficit in excess of the produce of a rate of a penny in the £, the rate of annual contribution so determined will hold good for the remainder of the transitional period.

In making this interim adjustment the Local Government Board will reserve the right of reducing the amount of the subsidy in any case in which there is evidence of failure on the part of the local authority to secure due economy in the erection or management of the houses, or that the best rents obtainable are not in fact being obtained.

FINAL ADJUSTMENT.

(f) At the end of the transitional period the whole position will be reviewed in the light of the actual working of the scheme during that period, and the annual amount thereafter to be provided out of public funds will be adjusted as follows. The amount of the estimated annual expenditure will be compared anew with the amount of the estimated annual income, and if as a result of this comparison it appears that the future annual charges to be borne by the local authority are likely to exceed the produce of a rate of a penny in the £, the annual subsidy for the remainder of the period of the loan will be finally fixed at a sum calculated to cover this excess, subject only to such adjustment as may be required in consequence of any variation in the amount produced by a penny rate.

At the final adjustment it will be open to the Local Government Board to reduce the amount of the State contribution if there has been evidence of failure on the part of the local authority to exercise due economy in management or in securing the best rents obtainable. In the event of the local author-

ity and the Local Government Board being unable to reach an agreement on any such question the matter will be referred for final settlement to some independent tribunal.

(g) In the case of a rural district the produce of a rate of a penny in the £ for the purpose of the scheme will be based on the assessable value of the whole district unless very strong grounds are shown for a declaration under Section 31 of the Housing, Town Planning, etc., Act, 1909, which would impose the cost of a housing scheme on a contributory place or contributory places in the district.

5. In order to secure that local authorities may have advice and assistance locally available to them and to avoid delays, the President is arranging for the appointment of a certain number of Housing Commissioners whose duty it will be to consider and discuss with the local authorities in their areas the needs of each district in regard to housing, and to advise and assist them both in the preparation and in the execution of schemes.

Each Commissioner will have an office in his district, and his address will be communicated to each local authority and otherwise notified in due course for the information of all concerned. It is the desire of the President that the greatest possible use may be made in every instance of the Commissioner and his expert assistants, but he wishes to make it clear to all local authorities that the object of the appointment of these Commissioners is not to diminish the responsibility of the local authorities, but to give them assistance and advice, and at the same time to relieve the Central Department of some of the detailed work in connection with the schemes.

Under the new organisation it will be possible for schemes to be dealt with by stages, and thus to avoid the friction and delay which might be caused if schemes did not come before the Central Department until they have reached the final stage.

6. The local authorities will recognise that while the revised terms of financial assistance set out in the earlier part of this circular are exceptionally advantageous from their point of view, they will impose a corresponding responsibility both upon the local authorities and upon the Central Department to secure economical construction and management.

Under the organisation above described the Housing Commissioners will be working in the closest possible co-operation with the local authorities at all stages. At the same time the Local Government Board will expect the local authorities themselves to exercise effective supervision in regard to the cost of construction and the rents obtained, which should approximate as nearly as circumstances permit to the economic level.

7. In order to promote economy and to assist local authorities and others engaged in the provision of houses for the working classes, the president is causing certain articles used in the provision of such houses to be standardised. Local authorities will shortly be furnished with a list and description, with dimensions, of the standardised articles, and it is contemplated that unless the circumstances are shown to be very exceptional these shall be specified and adopted in every scheme. Steps are also being taken to secure the production of large quantities of doors, window frames, and various other fittings of standardised patterns, and to secure an adequate supply of bricks suited to the needs of various localities. A further announcement on this subject will be made shortly, but in the meantime the local authorities need have no hesitation in proceeding with the preparation of their schemes on account of anticipated shortage of materials.

8. The Board are about to issue a manual embodying detailed proposals in regard to the preparation and submission of schemes, suggestions as to lay-out and designs with plans, including pre-arranged designs of the Royal Institute of British Architects and plans recommended by Sir J. Tudor Walters' Committee, and the latest information in regard to improved methods of construction and building materials and house fittings.

9. With regard to the acquisition of land, an arrangement has been made with the Board of Inland Revenue, under which the

superintending valuers in the service of that department will be prepared on the invitation of the local authority to express an opinion as to the present value of any site definitely selected by the local authority for housing purposes, and, if desired by the local authority, the Inland Revenue Valuation Office will undertake negotiations for the purchase of such sites provided that prior notice of their intention to acquire has been given to the owner by the local authority. This arrangement will provide for both parties the opinion of an independent authority to serve as a guide to the real value of the property in question, and it may be anticipated that the number of cases in which the parties fail to agree will thus be reduced, and the delay and expense of arbitration avoided.

10. With a view to supplementing the provision of houses by local authorities the Government desire to encourage public utility societies to undertake building operations, and it is accordingly their intention to propose to Parliament that financial assistance should be given to such societies carrying out housing schemes within the same period as that which will apply to local authorities. A memorandum explaining the scope of the proposed assistance, and the conditions on which it will be granted, is in preparation, and a copy will be forwarded for the information of the local authority at an early date.

11. It is the intention of the Government to propose legislation during the coming Session to give further powers to local authorities in regard to the provision of houses for the working classes, to enable local authorities under the Housing Acts to assist public utility societies by subscribing to their capital and otherwise, to deal with by-laws and local Act provisions which may be found to impede desirable housing proposals, and generally to facilitate the execution of schemes.

COMPETITIONS.

BOLTON PROPOSED NEW PUBLIC SCHOOL BUILDINGS.—Messrs. John Bradshaw Gass, F.R.I.B.A., and Arthur John Hope, F.R.I.B.A., of Bolton, having been appointed assessors in the competition for the new public school buildings for boys and girls, proposed to be erected for the Bolton School in Bolton, and having examined the forty-eight designs submitted in accordance with the conditions and instructions to be observed by competing architects, and, after consultation with the trustees and Lord Leverhulme, advising them upon the relative merits of the designs submitted and obtaining their approval, have made their award as follows:—

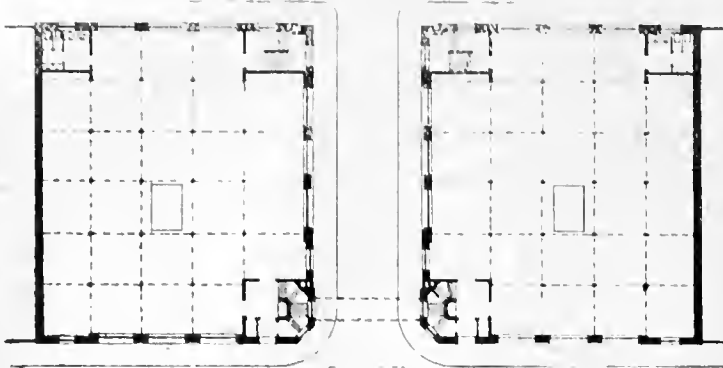
- 1st Premium 250 guineas, Design No. 13.
- 2nd Premium 150 guineas, Design No. 38.
- 3rd Premium 100 guineas, Design No. 9.
- Design placed 4th, No. 32.

The authors of the designs are as follows:—No. 13, Charles T. Adshad, A.R.I.B.A., 33, Princess Street, Manchester; No. 38, Horace Field, F.R.I.B.A., and H. Dighton Pearson, F.R.I.B.A., 59, Berners Street, London, W.1; No. 9, Arnold Mitchell, F.R.I.B.A., 17, Hanover Square, London W., and James A. Swan, F.R.I.B.A., Da'mler House, Paradise Street, Birmingham; and No. 32, Percy S. Worthington, M.A., F.R.I.B.A., and Francis Jones, F.R.I.B.A., 175, Oxford Road, Manchester. All the designs will be exhibited in the gallery of the Albert Hall, within the Town Hall at Bolton, from yesterday, February 11 to Saturday, February 15, both inclusive, from 11 a.m. to 4.30 p.m. each day, and to-day and next Friday evenings, from 6.30 to 8 in addition.

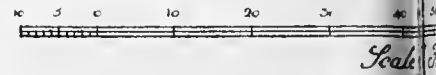
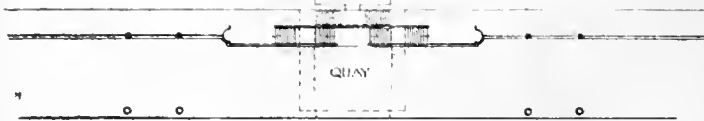
HOUSING SCHEME, BUCKLOW DISTRICT COUNCIL, CHESHIRE.—Twenty-five acres, near St. Alban's Church, Dunham Massey, opposite Cherry Tree Farm, to be laid out for 230 houses at 12 to the acre, either in groups of three or four, cost not to exceed £200 to £250 per house exclusive of land charges, roads and sewers. About 70 of the houses to have sitting-room, living-room, scullery, and offices, with three bedrooms, and about 160 houses to have large living-room and no parlour, other accommodation as before. The prizes offered are £50 and £25 for plans chosen first and second by the council.

METROPOLITAN B RIVERSIDE WITH ESPLANADE

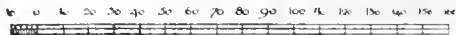
REAR TRAFFIC ROAD



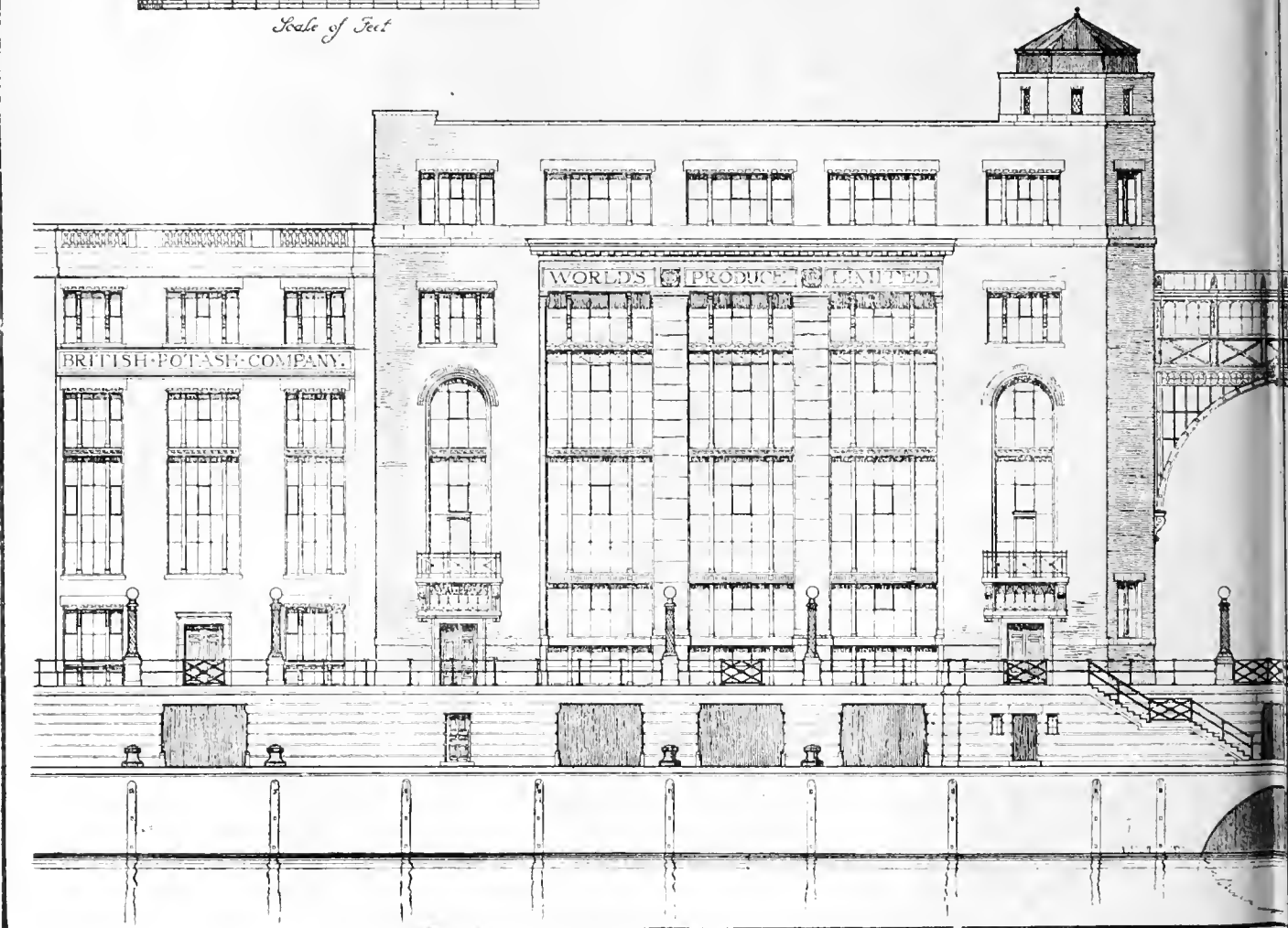
ESPLANADE



PLAN THROUGH WAREHOUSE

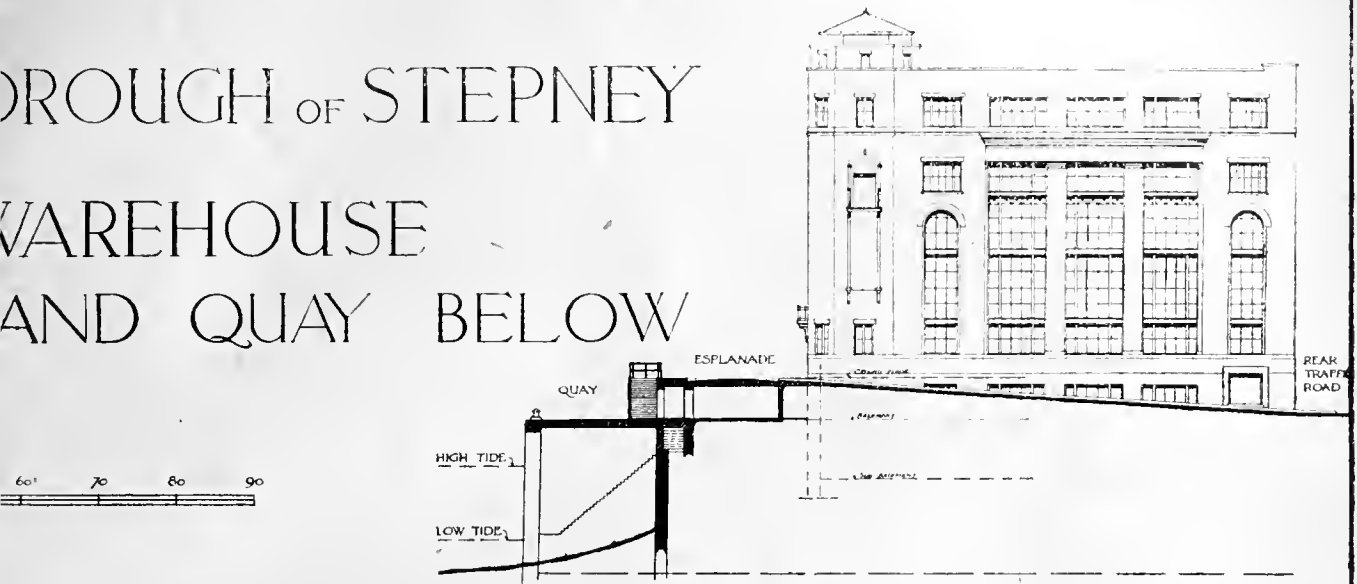


Scale of Feet



FEBRUARY 12, 1919.

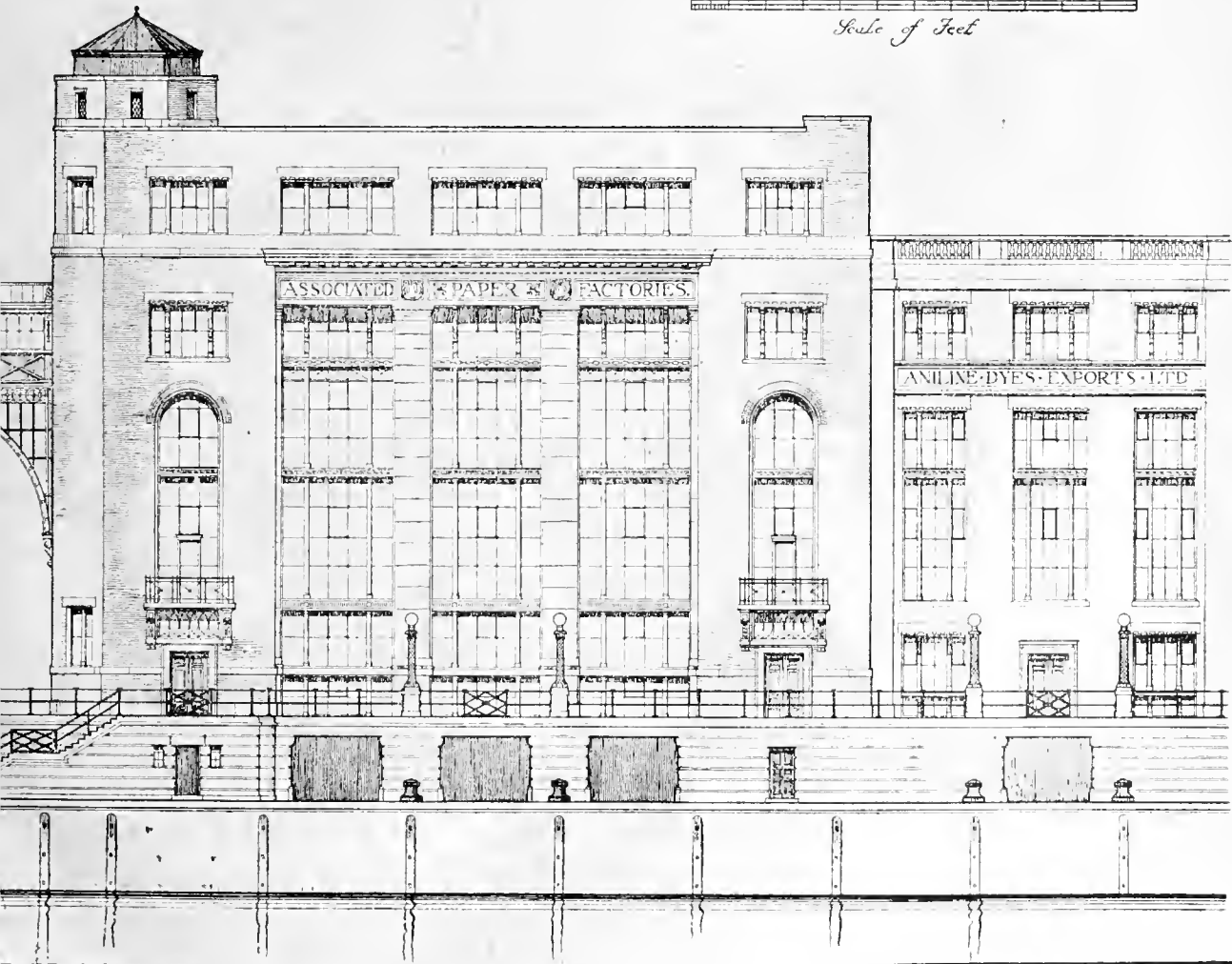
DROUGH OF STEPNEY WAREHOUSE AND QUAY BELOW



SIDE ELEVATION AND SECTION THROUGH ESPLANADE

10 20 30 40 50 60 70 80 90 100 110

Scale of Feet



ED NEW FRONTAGE TO THE THAMES AND ESPLANADE.

o Sons, Architects.

**MESSRS. ROBERT INGHAM CLARK
AND CO.'S HUNDRED GUINEA
REGISTERED TRADE MARK
COMPETITION.**

The liberal premium offered by Messrs. Robert Ingham Clark and Co., Ltd., West Ham Abbey, Stratford, E.15, for a Trade Mark and Poster Design, based on the seated figure of Britannia, with which all our readers are familiar in their advertisements in our pages, will, we hope, be spiritedly responded to. It is a healthy sign of the times when the aid of Art is thus invited to further legitimate enterprise by a firm which heads the list in its own line and has contributed so largely to the development of an industry which has many claims on the support of all architects, builders and decorators. We trust the successful competitor may rise to the occasion and do justice to his subject. The following are the

INSTRUCTIONS AND CONDITIONS.

1. Designs to be based on the seated figure of "Britannia," as shown in sketch at side of these instructions, and to include the ship and lighthouse. The words "Registered Trade Mark" to form part of the design.

2. All designs to be in colour (flat wash). Modelling of figure, drapery, etc., and all outlines to be in bold black pen or brush lines. Object: To obtain a bold design for poster work, which will also bear reduction down to, say, 1 in. square.

3. Designs to be about 24 in. by 19 in. (or a circle 9 in. radius) in size, and mounted on stiff board having not more than 3 in. margin at top, bottom and sides.

4. No name, address or mark of identification may appear on any part of the drawing, mounting board or packing, but a sealed envelope, containing full name and address of the author, must be attached to the back of each design.

5. The premiated design to become the property of the company without reservation.

6. Neither the directors nor the company will be responsible for loss of, or damage to, designs received.

7. Designs must be addressed "Sales Promotion" Dept., "Messrs. Robt. Ingham Clark and Co., Ltd., West Ham Abbey, Stratford, E.15," and be delivered by 12 noon on Saturday, April 12, 1919.

8. No member of company's staff or their personal friends may compete.

9. The premium to be awarded by ballot in which responsible heads of departments shall take part. For this purpose each design will be allocated a number, and the author of the one securing the largest number of votes will be awarded 100 guineas.

10. In the event of less than twelve designs being received, the directors reserve the right to cancel the competition.

11. The decision of the company's chairman to be final in all matter of dispute.

12. The receipt of a design by the company shall imply the acceptance of each and all the above conditions by its author, notwithstanding any written statement to the contrary.

Ealing's war memorial is to take the form of a monument recording the names of local men who have made the "great sacrifice," and a fund to educate and give a start in life to the children of the men who have been killed or disabled.

A communication was read at the last meeting of the Nottingham City Council from the Notts and Derby Architectural Society, the Nottingham Society of Artists, and the Thoro-to Society, suggesting that the most suitable war memorial for the city and county was a group of sculpture in the Market-place, with a symbolical facade in front of the Exchange. It was referred to the General Purposes Committee.

At the Kidderminster Chamber of Commerce last Wednesday, Alderman Clement Dalley stated that the scheme for deepening the river Severn from the sea to Worcester, and the widening and deepening of the canals from Worcester to Birmingham, would soon be carried out and then vessels of 300 tons would be able to journey from the sea to Birmingham without transshipment. For the present the Kidderminster district would not participate in the scheme as the proposal was to go direct from Worcester to Birmingham.

**PROFESSIONAL AND TRADE
SOCIETIES.**

THE ARCHITECTURAL ASSOCIATION OF IRELAND.—At a meeting held last week of the Architectural Association of Ireland, Mr. Martin J. Burke in the chair, Dr. Cowan, of the Local Government Board, delivered an address on the housing question. The lecturer prefaced his remarks and exposition by a general historical review of the question in its social and financial aspects. The lowest rent at which a house which is now regarded as being the minimum in capacity and accommodation required can be let, is somewhere about 4s. per week per room to cover loan charges and repayment, and it is now recognised on all hands that private enterprise can no longer be relied upon to meet the demand unless conditions are materially improved. The problem of improving old houses is one beset with difficulties equally great, but of a different character, and, though not a pessimist, Dr. Cowan had to admit that at the moment the prospect was not a bright one. At least 60 per cent. of the houses of this class should have two bedrooms, 35 per cent. three bedrooms, and 5 per cent. four bedrooms. A hearty vote of thanks at the instance of Mr. T. J. Byrne, seconded by Mr. H. T. O'Rourke, and spoken to by several other speakers, was passed with acclamation.

THE BUILDING TRADES' PARLIAMENT.—The Industrial Council for the Building Industry (Building Trades' Parliament) met in the Midland Hotel, Manchester, last Thursday. Mr. A. G. Cameron, assistant secretary of the Amalgamated Carpenters' and Joiners' Union, presided. The Council was welcomed by the Lord Mayor of Manchester (Alderman Makecagne). The experience of Manchester, the Lord Mayor said, was not favourable to the erection of houses by the local authority or by the Government. In the past 97 per cent. of the building in the city had been done by private enterprise, and the remainder had been done by the municipality. He had no hesitation in admitting that the 3 per cent. had been a very great failure, and was causing an annual loss to the city of £20,000. It would be more economical and in the interest of the tenants if private enterprise were entrusted with building in the future. He had great doubts about municipalities taking up building at all, and in this, he thought, he was supported by a large body of ratepayers. It would be a mistake for the corporation to take up building schemes or even to bear 25 per cent. of the loss. Consideration was given by the council to schemes of education for apprentices, and to proposals for dealing with demobilised apprentices. Complaints were made that the Government had ignored the council as a consultative body, and had decided on a scheme without regard to the council's proposals. On the motion of Mr. D. Anderson, president of the South Wales Master Builders' Federation, it was decided to press upon the Government once more the committee's scheme for the payment of demobilised apprentices. It was only after a long discussion and some opposition that a resolution was passed asking the Local Government Boards of England and Wales and of Scotland to advise local authorities to expedite housing schemes, and requesting that any contracts placed with private contractors be placed in the hands of federated building contractors and sub-contractors, on terms in accordance with the recommendations of the Colwyn Committee, by payment to contractors of an agreed fee or percentage of estimated cost. Mr. S. Smethurst, Oldham, said there was a movement in London on the part of those who had been building munition factories to get their hands on the building of houses throughout the country. There would be a row in Lancashire if anything of that kind happened. It would be disastrous to perpetuate the percentage system of contracts. Mr. Smethurst's point of view was shared by several representatives of the operatives. A committee was appointed to "consider the question of scientific management and reduction of costs," to enable the building industry to render the most effective service possible. A proposal to add to the objects of the committee the consideration of some method of profit-sharing was not proceeded with.

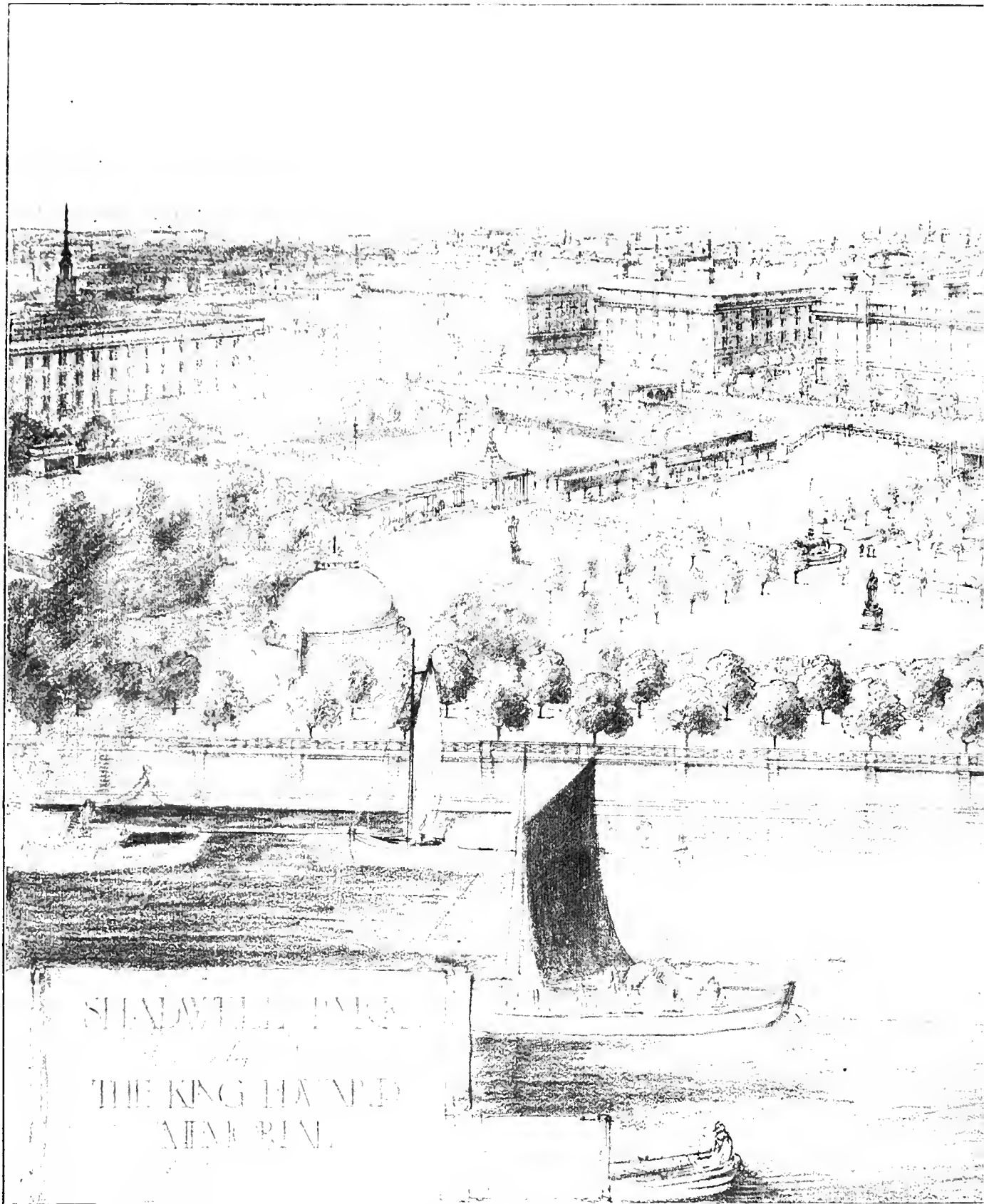
IRISH CENTRE FOR THE SOCIETY OF ARCHITECTS.—Steps have been taken to form a local centre of the Society of Architects in Dublin. About a dozen members of the society are in practice in Dublin, with a number in the provinces, and the Society has always been active and helpful in looking after the interests of its members. It was, says the *Irish Builder*, owing to the efforts of the Society that the clause relating to the employment of qualified architects was embodied in the last Labourers Acts for Ireland. It was, however, never given practical effect to by the Local Government Board, and soon became a dead letter.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.—At the annual meeting of the above on January 29, at Tavistock Street, Covent Garden, the forty-first annual report was adopted, on the motion of the retiring President, Mr. H. Willcock, of Wolverhampton. It stated, *inter alia*, that the affiliated associations numbered upwards of 160, with a total membership of about 6,000. A strong central building committee had been appointed, but it was doubtful whether the recommendations of the report would be carried out. A final draft of the proposed form of contract would be issued shortly. The subscription to the Federation for the current year was fixed at the rate of ninepence per £100 of wages paid. A resolution of the Council that a recommendation from the Industrial Council dealing with the inclusion of all employers and workpeople within respective associations be referred to the Administrative Council, with power to act, was carried after some discussion. A resolution of the Council dealing with lump contracts was carried, as follows:—"That this meeting is of opinion that under present conditions it is not advisable for members to give lump-sum contracts as in pre-war days, and that contracts should be only undertaken either in accordance with the recommendations of the Colwyn Committee, which recommends payment to the contractor of an agreed fee or percentage on estimated cost, or alternatively that a protection clause is inserted providing for increased or decreased costs of labour and materials after date of sending in tenders, and that printed slips be attached to tenders to this effect, care being taken that the reservation be inserted in the contract document." Mr. F. C. Dove, L.C.C., of London, was elected President for the ensuing year, and Mr. S. Easton, of Newcastle-on-Tyne, and Mr. A. J. Fondite, of Sheffield, Vice-Presidents.

NORTHERN ARCHITECTURAL ASSOCIATION.—The inaugural meeting of the session was held at the Association's Rooms on Wednesday evening, the 5th inst., the President, Mr. R. Burns Dick, F.R.I.B.A., presiding. Previous to the meeting a letter had been addressed by the President to everyone known to be engaged in the profession in the extensive area comprised in the sphere of influence of the Association, the result being a large and enthusiastic attendance, where a keen interest was shown in the endeavour to extend the power and influence of the Association. Many valuable suggestions were made by members, and steps taken to pursue a vigorous policy on the lines indicated in the President's letter. In addition to the discussion which took place, the President read some thoughts which he had penned immediately after the armistice bearing on the necessity for a new outlook in connection with the re-organisation of our professional societies. The meeting unanimously resolved to send a letter of congratulation to Sir Aston Webb, K.C.V.O., C.B., R.A., F.R.I.B.A., on his election to the presidency of the Royal Academy, and similarly to congratulate one of the members, Mr. Harry Barnes, on his election as one of the members of Parliament for Newcastle-on-Tyne.

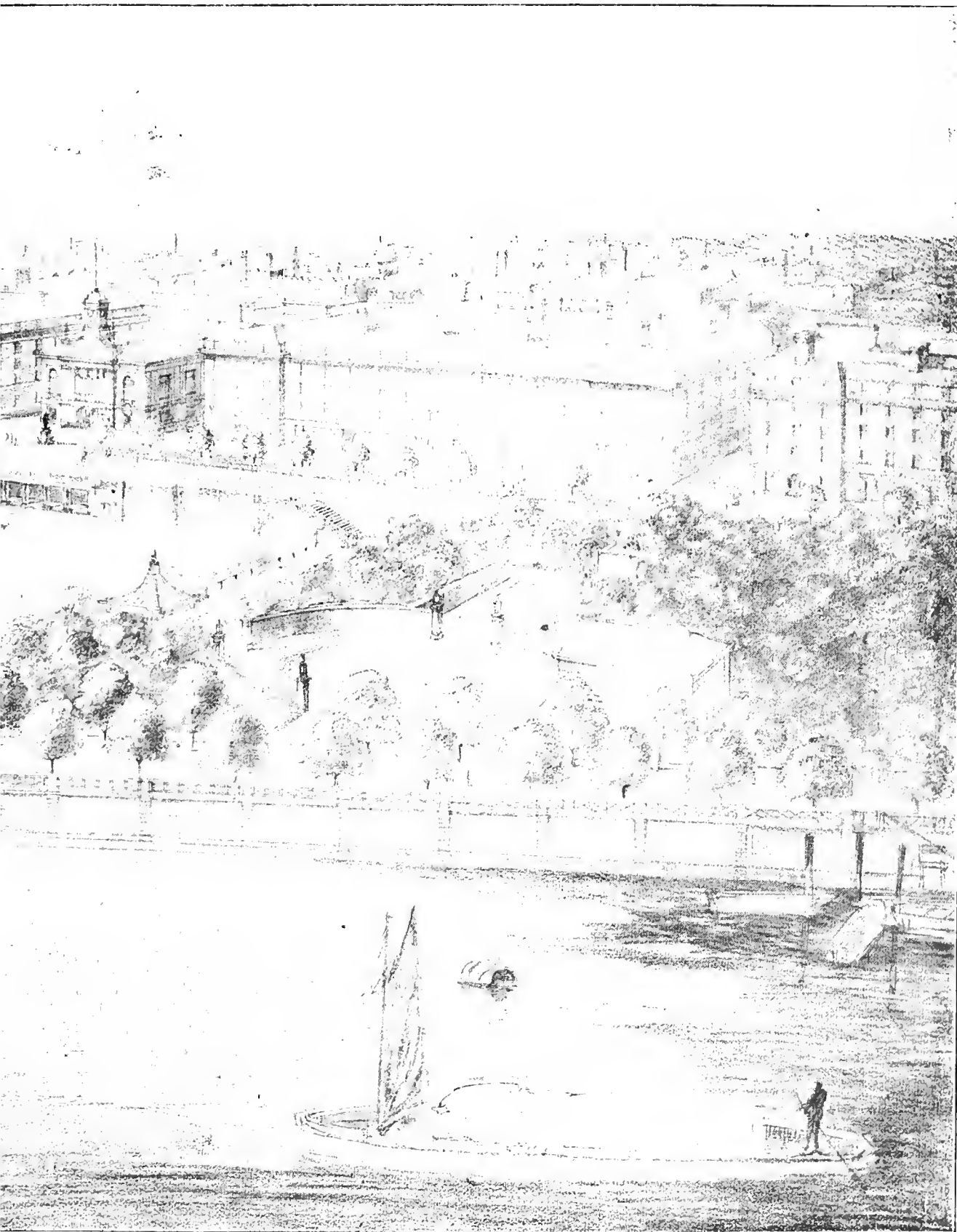
ROYAL INSTITUTE OF BRITISH ARCHITECTS.—At the last meeting, on the motion of the President, it was resolved to send an address of congratulation to Sir Aston Webb on his election as President of the Royal Academy. The President then announced that it was proposed to submit to the King the name of Mr. Leonard Stokes as a fit recipient of the Royal Gold Medal in recognition of the merit of his work as an architect. Mr. George Hubbard, F.R.I.B.A., then read



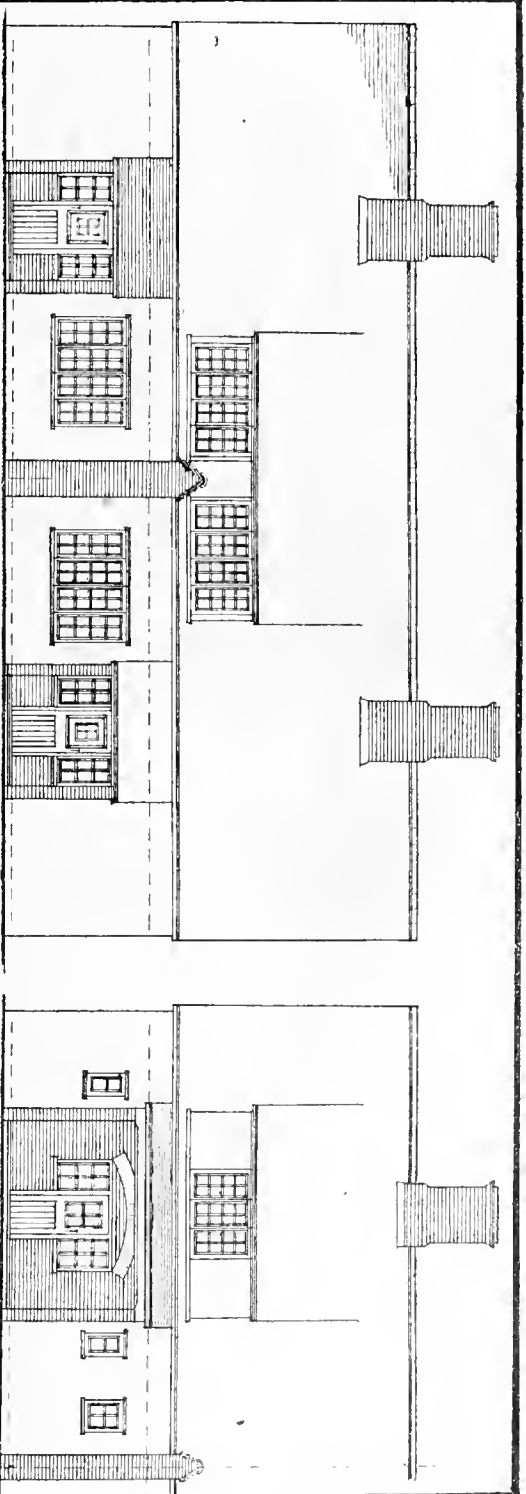


KING EDWARD MEMORIAL PARK AT SHADWELL.—PART OF THE TOWN

FEBRUARY 12, 1919.

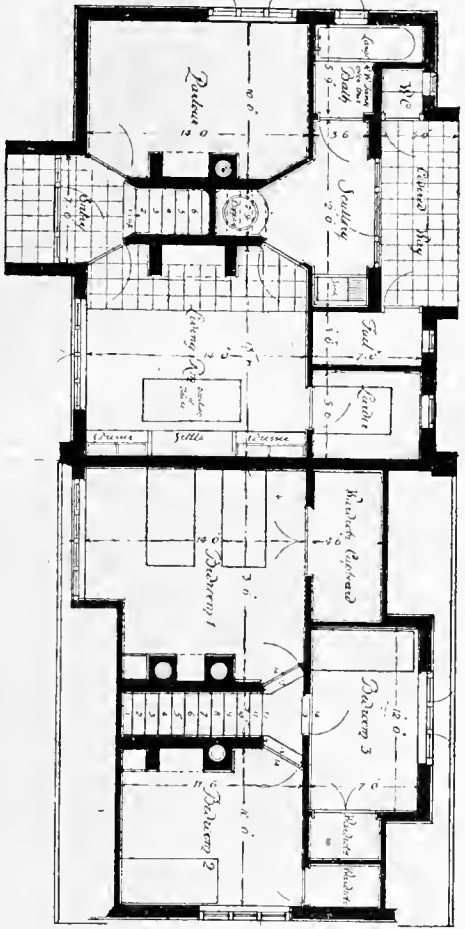


SCHEME FOR STEPNEY. E. Messrs. T. H. MAWSON AND SONS, Architects.



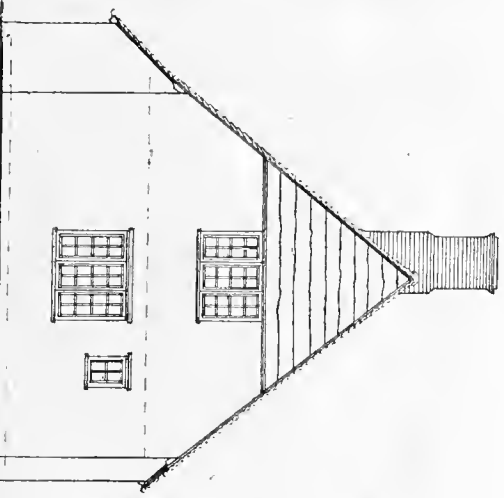
Front or South Elevation

Back Elevation



Ground Floor Plan

First Floor Plan



End Elevation

A PAIR OF COUNTRY COTTAGES FOR WORKMEN (MODEL PLAN).

Mr. PHILIP TILDEN, Architect.

Scale - 1/4" = 1' and 1/2" = 1' 6"

Philip Tilden, inv. & archt.

a paper on how to obtain a water supply in the absence of springs, rivers, and rain. This he proposed to accomplish by lowering the surrounding temperature of the atmosphere below dew point, thus condensing the aqueous vapour on the chilled surface, in some such fashion as that adopted in India of procuring ice. Mr. Hubbard claimed that he and his brother first showed that the dew ponds furnished their principal water supply to the prehistoric races who, thousands of years ago lived on the hill-tops of the South Downs. To get the best results three essential points must be secured. The site of the proposed dew pond must be on high ground, facing the moisture-laden winds; the substructure must be of the most efficient non-conducting material, such as straw; and the superstructure of the most effectual heat-conducting material, so that the heat secured during the day might be radiated as quickly as possible after sunset.

Our Office Table.

The Controller of Timber Supplies announces reduced maximum prices for imported softwood, coming into force on Monday last, February 10. Concurrently with the introduction of the new prices, the system of allocating rations will be abolished, and the stocks held by the Timber Supply Department will be disposed of in parcels of fifty standards or more. Applications for a rebate where firms have purchased from the Department under the old prices can only be considered where no portion of the goods has left the dock or store yard on which the delivery order was issued. All such applications should be made to the Government Buyer at Salisbury House, Finsbury Circus, London, E.C.2, and should be accompanied by the delivery order on which rebate is requested.

During the war period the amount of money paid through the Special War Fund raised by the workers, office staff, etc., of Messrs. Fredk. Braby and Co.'s Eclipse Works, Glasgow, reached a total of £8,862 3s. 6d. The money was contributed weekly. Part was distributed amongst the dependents of those on active service and part was used for sending comforts to those at the front. About 550 men from the Glasgow works joined the forces, seventy-five of whom have made the supreme sacrifice. This report does not include Messrs. Braby's London, Deptford, Liverpool, or Bristol works.

The building regulations for the suburbs of Berlin, first published January 30, 1912, were revised on May 10, 1918, owing to the numerous appendices which had been added, and in the new edition considerable changes have been made. Some of the points in which the Act of 1912 differed from the earlier Acts were:—(1) Shops might have a front garden close to the edge of the footway, so that even business streets might have a decorative appearance; (2) back extensions to be permitted to improve lighting of the buildings; (3) permission to use half the roof space above the fourth floor as a dwelling to be rescinded; (4) cellar dwellings to be forbidden. Considerably greater facilities are now afforded to builders who desire to erect small single-family houses.

Messrs. S. W. Francis and Co., Ltd., of 64-70, Gray's Inn Road, send us a small pamphlet intended as a forerunner to a complete catalogue, which they hope to be able to issue later in the year. It is sent as a reminder that they are now in a position to execute orders for revolving shutters of every description, brass, gunmetal or white metal shop fronts, inside and outside spring roller blinds, collapsible steel gates, plate-glass facias, gilt wood letters, metal letters, etc., without permits. Now is the time to buy, as orders will be executed in rotation, and we need hardly remind our readers that the long-established reputation of this old established firm is a guarantee that all orders, whether large or small, receive every attention, and that estimates will be sent free of charge on application.

An experiment in cottage building, the cost of which is being borne by Messrs. John Dawson and Co., is being tried at Newcastle-on-Tyne. An estate has been purchased on which to build cottages, each of which will have a continuous service of hot water, will be heated by radiators, and gas and electric light will be included in the rent. At the outset a sample cottage is being built. The site of it is in the centre of the city, and is exactly the size of the gardens on which the house will be built on the outlying estate. This cottage will be built for demonstration purposes only, and will be a model to illustrate the plan. Housing experts from all over the country will be invited to inspect the cottage and suggest improvements. These suggestions will be submitted to three judges—an architect, a builder, and a housewife. The best idea embodied in the suggestions will receive a prize of twenty guineas, and other prizes will be awarded for the next best suggestions submitted.

There is a diversity of opinion as to the form the War Memorial at Dudley should take. On the one hand, it has been suggested that it should take the form of a town hall capable of holding 4,000 or 5,000 people, with an organ, and also municipal buildings, both of which are urgently needed. The estimated cost of this scheme is between £30,000 and £40,000, and this difficulty has been modified by the recent diversion of the Brooke-Robinson bequest, originally stated to be £30,000, on the condition of the provision of a coroner's court, and a museum for the testator's varied collection of articles of public interest, and by the prospect of a large unexpended balance from the Prisoners of War Fund. On the other hand, the local branch of the Discharged and Demobilised Sailors' and Soldiers' Federation suggest that the present club premises at Waddam's Pool, in connection with which a large debt has been incurred, should be taken over, and that on an adjoining site there should be erected a hall capable of holding 2,000 people, billiard room, and gymnasium, at a cost of £10,000, and a benevolent fund established, which would ensure that members of the branch should never be in want. It has also been suggested that a fund should be established to provide for the children of soldiers killed or disabled in the war. Among other suggestions put forward are the erection of a statue to Dud-Dudley, whose invention of smelting iron by coal instead of charcoal led to the foundation of the prosperity of South Staffordshire, the erection of detached houses for the free and exclusive use of permanently disabled sailors and soldiers, the provision of a soldiers' and people's palace, children's welfare centre, and a workers' recreation institute.

The Belgian Government has decided to leave the ruins of Ypres as they are as a symbol and memorial of the horrors with which the country has been visited. In reaching this decision the Government has had in mind the feelings with which the city battlefield of Ypres will always be regarded by the people of Great Britain. Ypres will be rebuilt, but on a new site, which has not yet been chosen. It will doubtless be in the neighbourhood of the ruined town.

The Advisory Committee which the Royal Scottish Academy, in co-operation with representatives of civic bodies, Church, and other interests, appointed to give guidance as to the erection of war memorials in Scotland, held its first meeting in Edinburgh last Wednesday. Mr. J. Lawton Wingate, P.R.S.A., who presided, said that they had already reason to anticipate a state of affairs in regard to the production and placing of memorials which, in the absence of cultured direction, might result in much misspent effort and many regrets. Sir John Stirling Maxwell, who was appointed chairman of the Grand Committee, welcomed the decision of the Academy. This country, he said, had its recent monuments very much on its conscience, and there was a universal wish that memorials which marked the close of the war should escape the failure which had dogged our past efforts for two generations. The Academy did not propose to dictate, but to put its ex-

pert advice at the disposal of the community without asking for payment of any kind. The meeting appointed an administrative committee of artists and laymen.

The forty-one acres of land between Stag Lane and the Beverley Brook, Putney Vale, selected for the Wimbledon and Wandsworth War Memorial, have already been acquired for £10,000. Of this land fifteen acres are to be laid out as a memorial to fallen men belonging to Rochampton, Putney, Kingston Vale, Southfields, and the Borough of Wimbledon. The scheme will embrace nothing in the shape of landscape gardening or floral display, and the monument will be of simple architectural design. The estimated cost of the monument and the necessary planting is £7,000, all of which has to be raised, as the committee have only a balance of £158 from subscriptions and donations for purchase of the land.

The next exhibition at the Brighton Art Gallery will be contributed to by the members of the two local societies of artists, the Brighton Arts Club and the Sussex Women's Art Club, and there will be a special representation of the work of the late Mr. W. H. Bond, one of the original members of the Arts Club and for several years Headmaster of the Municipal School of Art. This exhibition, which will open on February 15, will be followed by one of Serbian art, with a special display of the work of Ivan Mestrovic. The exhibition of Italian War Photographs has been open all this month and closes tomorrow.

The result of the poll with reference to clause 15 of the Birmingham Corporation Housing and Town-planning Bill was declared last Thursday. The Bill was approved by the City Council and a town's meeting, but a poll was demanded on the question of clause 15, which raises the compounding limit from £10 to £15. This voting showed 2,509 in favour of the clause and 7,755 against. Out of 338,855 persons entitled to vote only 10,272 voted.

CHIPS.

Fifty pounds is offered to architects for the best design of a £1,500 war monument at Dorking.

Plans have been prepared for new premises for the new Delaval Co-operative Society, at a cost of £10,000.

Plans have been prepared by the Nottingham City architect for the extension of the Guildhall, to cost £8,000.

It has been decided to build a theatre to seat 4,000 on the site of the Empress skating rink, Ashton-under-Lyne.

Two thousand and ninety-three pounds has been subscribed to the King's Fund for the Disabled by the Master Builders' Association.

The death is announced of Mr. John James Downes, architect and surveyor, of 69, Breakspere Road, Brockley, S.E., aged seventy-five years.

The Higher Schools Sub-Committee recommends the Brighton Education Committee to erect new municipal college buildings and an hostel on the Dyke Road site.

The Southampton Guardians have adopted plans prepared by Mr. A. F. Gutteridge for detached cottage homes, a central hall, and a receiving home. The scheme is estimated to cost £19,150.

The death is announced, on February 4, after several years' declining health, of Edmund William Buckle, M.A., King's College, Cambridge, architect, second son of the late Canon Buckle, of Wells, aged 62.

Mr. Frank Abbey and Mr. J. H. Hanson have become partners as architects and surveyors. Their address will be 11, Cloth Hall Street, Huddersfield. Mr. Hanson is a Past President of the Surveyors' Institution.

A statute was presented to Congregation at Oxford on February 4 by Sir Herbert Warren, President of Magdalen, establishing a Professorship of Forestry, as a chair of the first order, with an endowment of £900 per annum.

Mr. E. J. P. Benn, in a lecture at the Saddlers' Hall last Wednesday, said that the uselessness of expecting the Government to do anything practical in regard to industry was illustrated by the fact that the windows of Windsor Castle were cleaned on the inside by the Office of Works, and on the outside by the Department of Woods and Forests.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

Winchester Cathedral from the North-east during process of restoration, by Sir T. G. Jackson, Bart., R.A., from a drawing by Mr. W. T. M. Hawksworth, R.B.A. Exhibited at the Royal Society of British Artists, 1918, with two photographs

Strand, W.C.2

showing fissures in the building as it was prior to the repairs. Also sections showing the old and new foundations.

Borough of Stepney Town Planning Scheme. Messrs. Thomas H. Mawson and Sons, Architects. Workmen's Houses, with workshops in the roof space. Elevations, sections, and plans. Communal kitchen and dining-room, club, and billiard-rooms.

An Oak Altar Cross, by Mr. Ernest A. S. Benney, A.R.C.A. (London). Photographic detail.

Currente Calamo.

In a communication dated February 11, but which did not reach us till last Wednesday afternoon, some hours after the publication of our last issue, the Secretary of the Royal Academy informs us that "In view of the shortness of the notice recently given to the contrary, it has been decided that photographs of architecture and architectural sculpture shall be admissible as last year for the Summer Exhibition of 1919." It is a pity the otherwise very sensible final decision was not made sooner, and that another week has been lost to readers who would probably have found its prompter communication advantageous. The days for receiving works are:—Watercolours, pastels, miniatures, black and white drawings, engravings, and architectural drawings, Friday, March 28; oil paintings, Saturday, March 29, and Monday, March 31; sculpture, Tuesday, April 1. N.B.—Not more than three works may be sent by any one artist. No work will under any circumstances be received before or after these specified dates. All works must be delivered at the Burlington Gardens entrance. None will be received at the Piccadilly entrance. Hours for the reception of works, 7 a.m. to 10 p.m. Labels and forms can be obtained (during the month of March only) from the Academy. Applications for them made by letter must be accompanied by a stamped and addressed envelope for their enclosure. The exhibition opens on Monday, May 5, and closes on Saturday, August 9.

The Increase of Rent Act, like other war measures, is causing some trouble to the Courts as well as to landlords and tenants. We have now to thank Mr. Justice Sankey, in the recent leading case of "King v. York," for a judgment that really brings light into our darkness. The Act, he said, applied to houses, not to tenants. In legal language it operated *in rem*—i.e., upon the thing, and not *in personam*—i.e., against the person. Applying this plain principle, it followed that what the Act really did was to stereotype the rent of a house that came within its clauses. In this case a house which, in August, 1914, was let at 10s. a week, was afterwards let at 20s. to a new tenant, with permission to sublet apartments. This man having

fallen into arrears, the landlord applied in the County Court for leave to distrain. The County Court Judge, holding that the Act did not apply, as a new tenant had come in, and the place was not then let as a dwelling but as a lodging house, granted the application. On appeal to the High Court this ruling was reversed by the two Judges—Justices Lush and Sankey—who held that the statute had fixed a standard rent without reference to a particular tenant. Further, it was clear that, if once the Act applied, it must continue to do so while it remained in force. It was not confined, as had been argued, to the "sitting" tenant. The sub-letting of part did not make the place any other than a dwelling-house. The appeal was allowed, and on these two clear judgments it is now decided that the rent payable in August, 1914, becomes the standard rent of houses which are covered by the Act, which is not affected by any change of tenancy, but remains binding on the premises while it is in force. It is unfortunate that this plain principle was not laid down in the statute itself.

Our "ancient lights" are always with us, and owing to the greatly growing value of land in London it is clear that "skyscrapers" are coming. The owners of old houses who wish to live in them by daylight find they must begin early if they are not to be left with darkened dwellings when ambitious architectural improvements are carried out. It will not do to wait until the walls are up before taking action; there must be foresight in this matter, and proceedings soon after the foundations are shown. The recent important case of "Litchfield-Speer v. Queen Anne's Gate Syndicate (No. 2), Limited," shows what can and must be done. The remedy is by a *Quia timet* action. Now this old law-Latin phrase simply means "Because he fears," and the process applies where the owner of a right of property has good reason to fear it will suffer irreparable injury unless the Court of Equity interferes at once to stop the coming damage. In this case plaintiff owned a long lease of a house in Old Queen Street, Westminster, and the defendants had begun to build, directly opposite, houses which were to be nine stories high, and so two stories higher than the old buildings that had been pulled down. The plaintiff feared that this increased height would seriously obstruct his ancient lights

in a music-room and kitchen, and now asked for an injunction to stop the building. The rival experts, as usual, were in direct conflict as to what would happen when the sky-scraper was finished. Mr. Justice P. O. Lawrence took the plaintiff's view that the former's light would be much reduced, and acting upon the principle that the Court can interfere where it is shown that substantial damage will inevitably be done, he granted the injunction asked. This was drawn in the form of a declaration that the defendants were not entitled to erect any buildings on their site which would cause a nuisance or an illegal obstruction to the plaintiff's ancient lights. Under all the circumstances he ordered defendants to pay plaintiff half his taxed costs. So the matter stands at present, but more may be heard of it later.

The position we have all along taken in regard to the coming House-building for the workers—viz., that from every point of view the proper thing for the Government to do, if it is really in earnest, is to promote joint action between the building industry and municipalities or other public bodies, is well set out in a readable pamphlet just issued by the Sheffield, Rotherham, and District Building Trades Employers' Association, and doubtless copies can be had of Mr. Thos. Smith, the secretary, from the Builders' Exchange, Cross Burgess Street, Sheffield. Any of our own readers who have influence in their own districts—and we regret to say they seem fewer than we could wish, or too busy to bestir themselves—might well arm themselves with a bundle of the pamphlet and trust to its lucidity and practical common-sense to help bring home to all interested the wisdom of the course suggested. That is, the fullest use be made of existing trade resources; that special Housing Boards be created under the control of the local authorities, and that financial assistance be rendered to others than municipalities able and willing to carry out schemes. The proposed Housing Boards, it is suggested, should consist of representatives of the municipal authorities, two builders, chiefly engaged in the erection of working-class dwellings, two general builders, not necessarily house-builders, two architects, two surveyors and valuers, two representatives of the operatives; and fe-

male representation should also be considered.

The Board, it is suggested, should continue to act until prices return to somewhat near the pre-war level, and rents reasonably increase, in order that houses can be built to show a fair return on cost without State assistance. The Board should be prepared to receive schemes from anyone desirous of submitting them. The estimated cost of such schemes at date of submission should be stated, and also the estimated cost if the house had been built in, say, 1913. A schedule of prices ruling in 1913 to be drawn up and used as a standard for the pre-war estimates. When the Board is satisfied that the estimate as to the difference in cost is correct, the persons submitting the schemes should be guaranteed the full amount of such difference, provided they satisfy the Board that they are capable of carrying out the schemes. The difference in value to be paid in full to the persons carrying out the schemes, on condition that, should rents increase beyond the present level, such increase—after deducting increased rates, extra cost of repairs, increase of mortgage interest, etc.—shall be repaid to the authority over a period of, say, five years from the date of ascertaining the increased value. If the builder or any other person submitting a scheme desires, he may provide the whole of the cost, but in that case the Government, through the local authorities, should pay him for the loan of the excess at the current rate of interest, plus sinking fund equal to, say, thirty years' purchase. Thus in that period the whole of the excess cost will have been repaid, either to the first owner, should he retain the property, or to succeeding owners who may purchase it, the conditions governing the grant going with the conditions of sale until repaid. Schemes prepared by municipalities to be also submitted to the proposed Board for approval. We believe the scheme is thoroughly sound, and would, in addition to the provisions of the housing so badly wanted, do much to restore public confidence in house property as an investment. We are also in hearty agreement with the absolutely necessary amendments in housing legislation which are detailed in the pamphlet. Most of our recent law-making of this sort seems to have been planned purposely to discourage really thrifty people!

The Elizabethan Almshouses founded at Croydon by Archbishop Whitgift have again been threatened. Twice in recent years has the Croydon Corporation decided to seek powers to demolish them as part of its street-widening schemes. Each proposal has been nullified—on the last occasion by Mr. John Burns, then President of the Local Government Board, who visited Croydon and went into the question. Total demolition has been the object of each scheme: but the new proposal, submitted as a compromise, is to take down only the south and west wings—the less historic of the four—and throw a portion of the quadrangle into the street,

to widen the narrow crossroad lying in the heart of the town. As part of the town's war memorial, it is proposed to erect a monument in the foreground, to embellish the quaint little chapel with the names of the fallen, and provide a cenotaph, the two sides left standing to be taken for adaptation to war museum purposes. When the scheme was placed before the corporation at its last meeting it was practically rejected. Whether the plan is to be presented again remains to be seen.

ROYAL SOCIETY OF PAINTER-ETCHERS AND ENGRAVERS.

The thirty-seventh annual exhibition of this society is an interesting one, and quite a number of the subjects are well above the average. Mr. Axel H. Haig scores well with his "Street in Nürnberg with Towers of St. Lawrence" (160), and still better with "Leon Cathedral" (185). Mr. Arthur J. Turrell is also well represented in all his four contributions—"Pisano's Pulpit, Siena" (9), "The Adoration of the Virgin," after Verrocchio (90), "The Arsenal, Venice" (114), and "The West Front, Amiens" (184). The last is a particularly fine piece of work. Mr. Hedley Fitton's only exhibit, "The Little Market, Vicenza" (28) is in every way satisfactory. A better show of good architectural subjects than the before-mentioned has seldom been seen at any display of this or any other society, and no reader should miss seeing them.

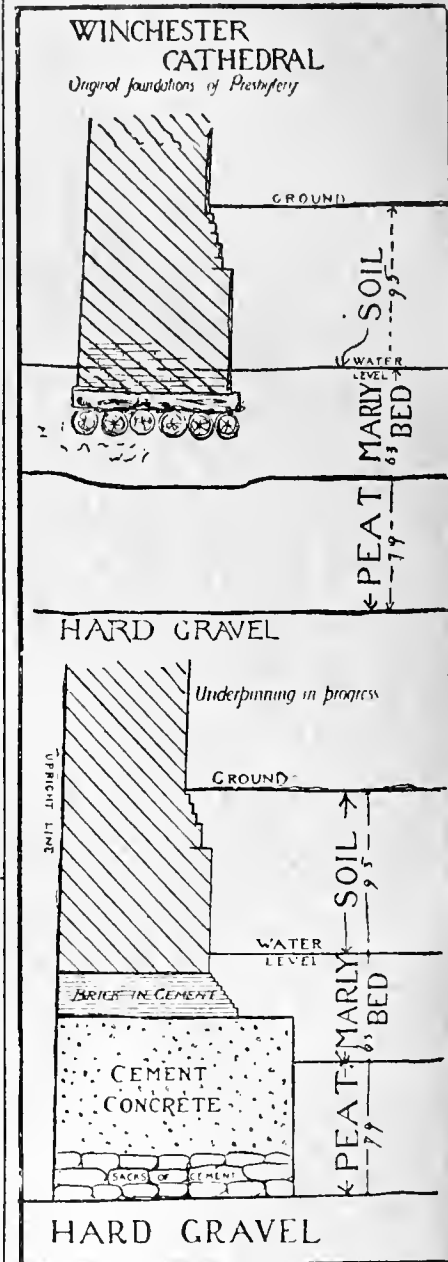
Among general subjects, Mr. Herbert Dicksee takes the lead with his "Startled" (124); and his "Lioness on Rocks" (31) and his "Deerhound" (116) are all excellent examples of animal portraiture. "The Pirate" (61), by Mr. G. Woolliscroft Rhead, is a vigorous embodiment of the rescue described in Tennyson's "Vivien." Captain W. Lee Hankey is variously pleasing in all his six contributions, "The Mid-day Meal" (156) taking, perhaps, the first rank, and "The Farm Girl" (173) making a very satisfactory second. Mr. William Walker's "An Aerial Combat" (14) raises regret that it is his only work in the exhibition. Mr. Percy Robinson's "St. Martin's Lane" (65) is, we think, the best of his four, but "The Horse Guards" (77) runs it close in well-rendered topical interest. "The Blacksmith's Boy," in dry point (91), by Mr. Charles J. Watson, is good, and so is his "Steps, St. Wolfram, Abbeyville" (45). Lieut. Alfred Bentley shows two very good dry-points, "Albert in Winter" (46) and "From a Captured Pillbox near Ypres" (47). Mr. Nelson Dawson is well to the fore with his four nice bits of Thames scenery, "Richmond" (50), "Middle Mall, Hammer-smith" (51), "The Mall, Chiswick" (88), and "A Thames Lock" (89).

Among others we must not omit to mention "The Drawbridge" (2), by Mr. Robert Bryden; "Rheims Cathedral" (3), by Miss Mabel C. Robinson; "Le Pont au Change, Paris" (96), and "Le Pont Royal, Paris" (96 and 97), by M. Eug. Béjot; "High Tide" (101), by Mr. Percival Gaskell; "The Chase" (103), by Mr. Geo. Marples; "Chartres" (111), by Mr. Frederick Marriott; "A Bad Time for Fritz" (110), by Mr. W. L. Wyllie; "On the Italian Front: The Ruins of Nervosa" (113) by Mr. Martin Hardie; "Winchester Cathedral" (120), by Mr. A. Hugh Fisher; and "Charterhouse Hall" (161), by Miss Elizabeth Piper.

Our Illustrations.

WINCHESTER CATHEDRAL, N.E. VIEW, SHOWING RESTORATION IN PROGRESS AS CARRIED OUT BY SIR T. G. JACKSON, BART., R.A., ARCHITECT.

This picture, by Mr. W. T. M. Hawks-worth, R.B.A., was shown at the Royal Academy at the end of last year, when the Royal Society of British Artists held their exhibition at Burlington House.



Certainly this structural overhauling was a notable undertaking, about which the architect, Sir T. G. Jackson, has been good enough to send us several leading details. He says: "The North-east corner of the cathedral was dangerously sunk and out of the perpendicular, and I underpinned it down to the gravel, sixteen feet below ground, of which ten feet were in water. The shoring, of course, had to be very carefully designed, and I made drawings for it in each part of the work. We got through, happily, without any slip. The whole of the outer work of the cathedral, except the West end, which is on better ground, now stands on my underpinning. I have always thought shoring beautiful, and that it would make a good

picture. I do not think Sir Francis Fox could add anything to what I have said. He advised me about the diver and I consulted him about the strength of my iron ties, but he had nothing to do with the superstructure or direction of the work." The sections set out herewith furnish fully dimensioned particulars, showing in detail how the foundations were originally formed by Bishop de Lucy's builders in 1202 A.D., when the Early English retro-choir and Lady-chapel were erected. The excavations at that date were made to a depth of ten feet, water having been reached, and in the absence of skill and necessary tackle to go deeper or devise suitable appliances, a raft of beech trees was adopted, placed in two horizontal layers under the footings, set sometimes, but not always, across one another. The weight of the walls naturally caused the waterlogged soil to yield, and this happened probably before the building was completed. In this manner for seven centuries the retro-choir had been slowly sinking. The only effective remedy was to underpin so as to rest the cathedral on the gravel solid bottom found below the peat, as shown by the second diagram. To enable this to be done a section of drift was excavated by the diver under the supervision of Sir Francis Fox, and thus working in a depth of ten feet of water tunnels were formed in serial order below the walls, cut out in varying lengths from twelve feet to twenty-four feet. Sir T. G. Jackson then had sacks of cement concrete lowered and laid in regular courses, like brickwork, bonding them well one over the other, to a height of about three feet, cutting open each sack after laying it. In a few hours this foundation set as hard as a rock and sealed the water down. The hole was then pumped dry and ordinary workmen built on the exposed concrete, which had the appearance of a flat bed or table of stone. Loose concrete was used at first, but subsequently blocks cast twelve inches by nine inches and two feet long, made better work. Finally, within three feet or so of the bottom of the original foundations, brickwork in cement was wedged in, pinning up firmly under the old work and proceeding in a forward direction. Mr. Walker, the diver, carried through his task of underpinning for five and a half years, burrowing in the dark as the water was too discoloured to allow the use of electric light. In addition to the retro-choir, both transepts and the buttresses on both sides of the nave were underpinned in precisely the same manner. Much additional buttressing also had to be done, and the transepts were tied together with iron rods, each helping to keep the other firm. The disintegrated state indicated by the photographs extended to the vaulting of the presbytery and other parts of the church. We are indebted to the publishers, Messrs. Warren and Son, of Winchester, for the loan of these views and also the sectional drawings borrowed from their excellent pamphlet published by the authority of the Dean and Chapter. This booklet is entitled "The Story of the Preservation of Winchester Cathedral."

TOWN PLANNING SCHEME FOR STEPNEY: WORKMEN'S HOMES WITH WORKSHOPS IN ROOFS.

This double page sheet illustrates a combination of existing tenements with some new blocks of industrial flats set at either end of the group towards the return streets. It likewise includes a series of entirely new buildings laid out round central garden spaces by the erection of four blocks of similar flats, three floors high with workshops on the fourth floor in the attics. The overcrowded

back yards are done away with, light and air being well provided for. One of the minor details shown is the provision of a communal kitchen, communal dining-room, club and billiard-rooms all included in the twin detached buildings planned on the half-basement principle with a raised ground floor approached by an external staircase. This is by way of an alternative idea in lieu of the coupling detached little cottages which figure in the lower part of the illustration. Messrs. T. H. Mawson and Sons are the architects of this Stepney improvement scheme of which other illustrations will be found in our issues for February 5 and 12.

AN OAK ALTAR CROSS.

Mr. Ernest A. S. Benney, A.R.C.A. (London), of Springcliffe, Bradford, designed and carried out this piece of church furniture. The Vine and Crown of Thorns are introduced conventionally on appropriately decorative lines, well subordinated to the general Crucifix shape of the work, mostly seen from a distance.

H.M. OFFICE OF WORKS AND HOUSING SCHEMES.

THE POSITION OF THE PRACTISING ARCHITECT.

In view of the impression prevailing amongst many architects that H.M. Office of Works is undertaking much architectural work which would otherwise be placed in the hands of practising architects, and that it is endeavouring to obtain control of Government housing schemes and the carrying out of the architectural work connected therewith, a deputation from the Council of the Society of Architects recently waited upon the Right Hon. Sir Alfred Mond, M.P., First Commissioner of Works, in order to place before him the society's views on the subject.

The deputation consisted of the president, Mr. Edwin J. Sadgrove, the senior vice-president, Mr. A. Alban H. Scott, Mr. C. T. Ruthen, member of Council, and the honorary secretary, Mr. Noel D. Sheffield, and was introduced to Sir Alfred Mond by Mr. Ruthen.

The president pointed out that practising architects had been very badly hit by the war, and the society hoped that the Government housing schemes would enable many of these architects, including those at present temporarily employed in H.M. Office of Works, to re-establish themselves in private practice. The society held that the proper persons to be entrusted with the lay-out of housing schemes and the design and supervision of the buildings were the competent architects in the various districts, who understood the possibilities of utilising local materials and resources to the best advantage and the necessity of preserving local amenities and traditions.

Several Government Housing Committees had already made strong recommendations that local authorities should place their housing schemes in the hands of competent architects, but if H.M. Office of Works was permitted to carry out the architectural work it would prevent many independent practising architects from being employed thereon.

The society was aware that H.M. Office of Works had designed and carried out extensive housing schemes during the last few years, but it had not felt justified in protesting at the time, as it held that the Government should have a free hand during the war. Now that the situation had changed, the society asked for an assurance that it was not the intention of H.M. Office of Works either to continue to undertake work which, in the opinion of the society, should in the best interests of the community be placed in the hands of independent architects, or to extend its scope and operations in connection with the Government housing schemes.

The president drew attention to a newspaper article which supported the claim of H.M. Office of Works to control the Government housing schemes, but the society urged that the control of those schemes should continue to be exercised by the Local Government Board.

Sir Alfred Mond, replying to the deputation, expressed himself in sympathy with the position in which architects found themselves as a result of the war. H.M. Office of Works had to carry out the instructions of other Government departments, and he did not believe that it was its intention to seek powers to design and carry out housing schemes, although, if local authorities exhibited undue lethargy in dealing with the problem, the Government might compel H.M. Office of Works to undertake the work.

On the question of control, Sir Alfred Mond did not know who had inspired the newspaper article, but he thought that H.M. Office of Works was better qualified than any other Government department to examine and advise on housing schemes submitted by local authorities. The housing question was a very wide one, and required to be approached in a broad-minded manner. The society might rest assured that its representations would receive careful and sympathetic consideration.

CONTROL OF CEMENT MILL MOTORS.

A typical group of nine 150 h.p. 2,200 v. squirrel cage motors driving tube mills, and two 250 h.p. motors driving grinders is described. All the motors are controlled from a single point; as much as possible of the starting apparatus is used by all the motors in common; any desired number of motors can be shut down from the mills substation; and thorough protection to machinery and workmen is provided.

Each motor has its own circuit breaker and double throw oil switch, whilst the starting equipment (circuit breaker, oil immersed electromagnetic contactor, and two auto-starters) is for the use of all the motors. The contactor serves to connect each motor in turn to the starting circuit breaker and auto-starters, as explained in the original.

A maximum demand indicator and set of relays, operating on the no-voltage release coils of the circuit breakers belonging to selected motors, are being installed so that the maximum demand may be kept automatically within the limit laid down in the power-supply contract. A wattmeter above each circuit breaker indicates directly any irregularity, such as a grounded phase or tight bearing.—W. H. Easton, in the *Electrical Review*, Chicago, September 28, 1918.

BIG RISE IN BUILDERS' OPERATIVES' WAGES.

The London Board of Conciliation for the building trades, after a conference between the employers and operatives to consider an application for an advance to 100 per cent. on pre-war rates of wages, have issued a new scale of wages as follows:—

Flat Rate per Hour.—Masons, 1s. 9d.; granite masons and mason fixers, 1s. 9½d.; carpenters and joiners, 1s. 9d.; bricklayers, 1s. 9d.; plasterers, 1s. 9d.; smiths, 1s. 6½d.; fitters, 1s. 8d.; plumbers, 1s. 9½d.; labourers, 1s. 5d.; scaffolders and timbermen, 1s. 5½d.; electric derrick drivers, 1s. 8d.; steam derrick drivers, 1s. 7½d.; slaters and tilers and marble polishers 2d. per hour advance on present rates; woodcutting machinists, 2d. per hour advance on present rates.

The above decision will affect something like 40,000 operatives, and came into operation on Saturday last.

A scheme has been prepared for the restoration of the historic and ancient church of Hales Owen at a total outlay of between £4,000 and £5,000. The cost of carrying out one portion, £1,000, has been provided by the children of the late Mr. and Mrs. Walter Somers. The sons of the late Mr. G. B. Parkes have promised to bear the expense of another in memory of their father.

The Royal Scottish Academy last Wednesday afternoon elected Mr. J. Campbell Mitchell, A.R.S.A., to full membership, to fill the vacancy caused by the death of Mr. Hugh Cameron. The new member, who is a native of Campbelltown, is fifty-four years of age, and his work is well known in England and on the Continent, he having frequently contributed pictures to the Royal Academy and the Paris Salon.



FISSURE IN NORTH TRANSEPT.

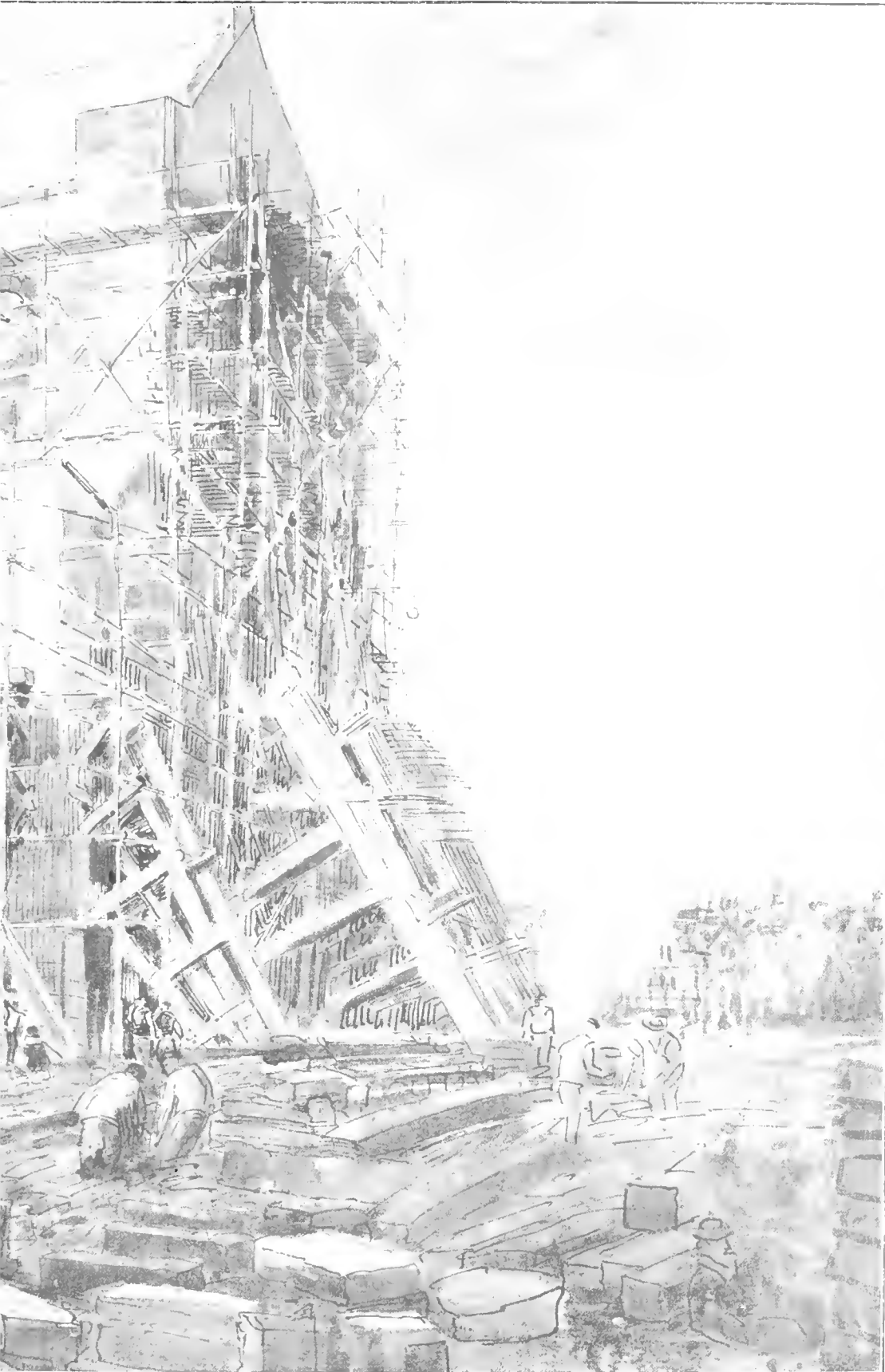


FISSURE IN FOUNDATIONS.

WINCHESTER CATHEDRAL: DISINTEGRATION PREVIOUS TO THE RESTORATION
Carried out by SIR T. G. JACKSON, Bart., R.A., Architect.



WINCHESTER CATHEDRAL FROM THE NORTH EAST. DURING
From a Drawing by Mr. W. T. M. HAWKSWORTH, R.B.



WORKS OF RESTORATION.- Sir T. G. JACKSON, Bart., R.A., Architect.
Illustration for the Transactions of the Royal Society of British Artists, 1918.

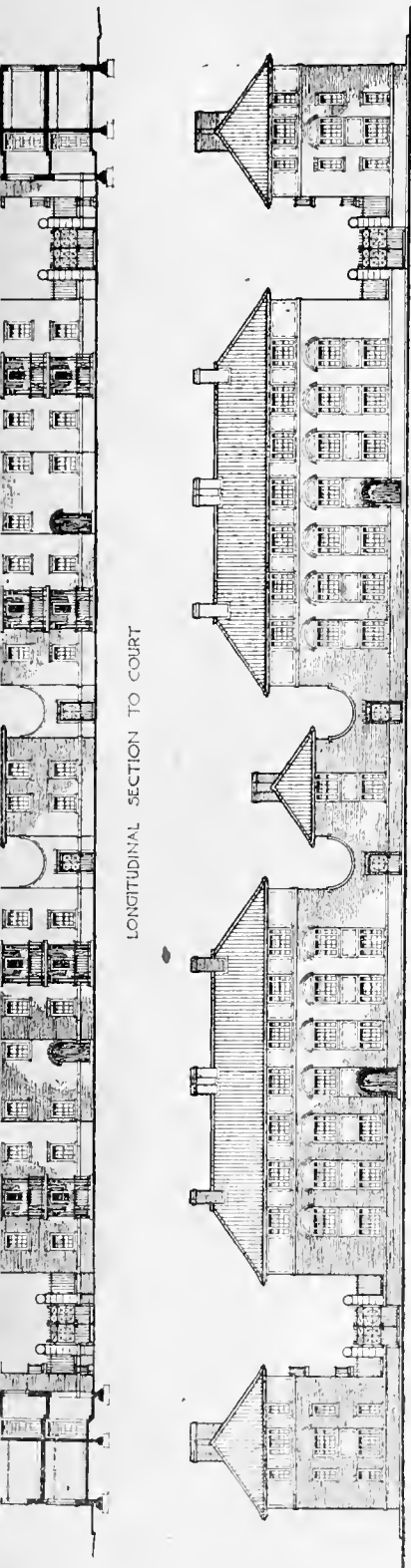




AN OAK ALTAR CROSS.

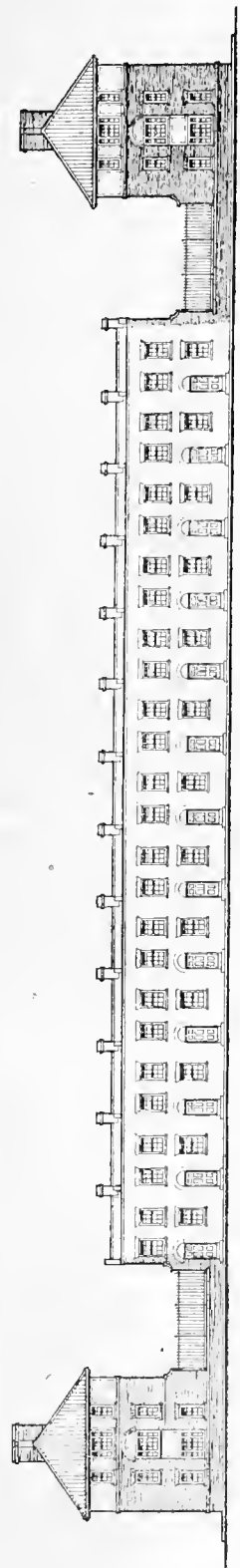
Designed by Mr. ERNEST A. S. BENNEY, A.R.C.A., London.



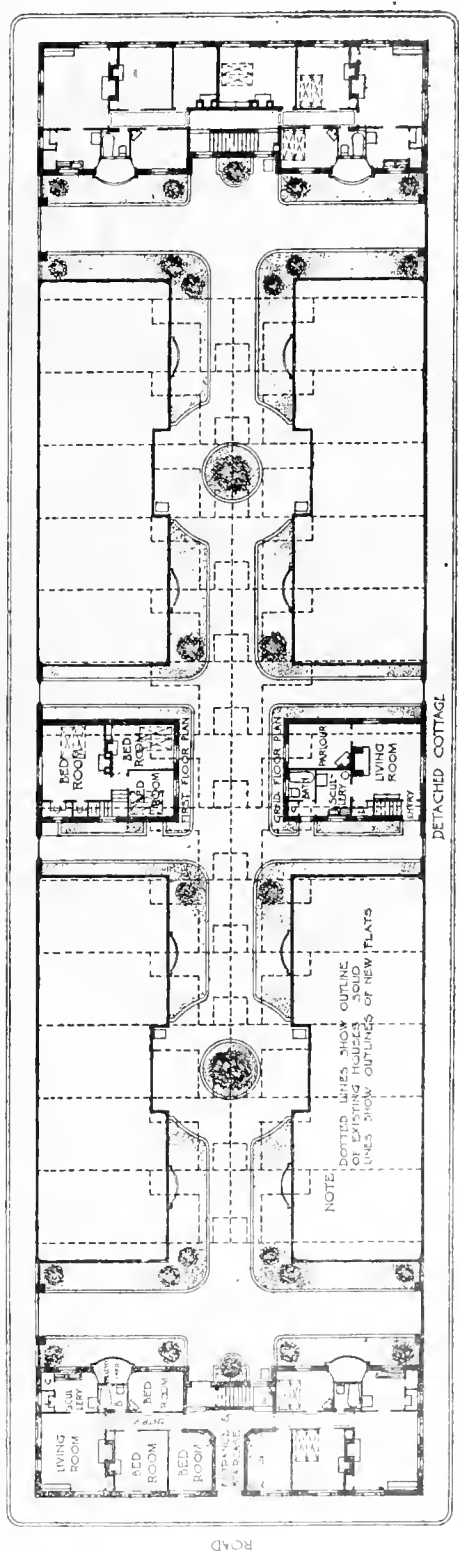


LONGITUDINAL SECTION TO COURT

LONG ELEVATION TO ROAD



LONG ELEVATION TO ROAD SHOWING NEW BLOCKS OF FLATS AT ENDS OF EXISTING HOUSES



GROUND FLOOR PLAN

FIRST & SECOND FLOOR PLAN

TOWN PLANNING SCHEME FOR STEPNEY: WORKMEN'S HOMES WITH WORKSHOPS IN ROOF.

Messrs. T. H. MAWSON and SONS, Architects.

COMPETITIONS.

BIRMINGHAM.—At the meeting of the Housing and Town Planning Committee of the Birmingham City Council last week it was reported that 122 applications had been received from architects and surveyors for laying out on town planning lines the Pine Apple Estate and Fordhouse Farm, comprising about 54½ acres, between Hazelwell and Lifford. The land and farm are the property of the Corporation, and the committee decided that the estate should be laid out for housing purposes. Architects and surveyors were asked to enter a competition for the laying out and preparation of designs for the erection of houses. Three prizes of £150, £100, and £50 were offered for the plans, and the entrance of competitors will close on March 31. Of the 122 applications already in from architects and others in different parts of the country, seventeen have been withdrawn, mainly on the ground that those prospective competitors are too far away from the estate.

THE SCOTTISH HOUSING COMPETITION.—The result of the architectural competition promoted by the Institute of Scottish Architects as authorised by the Local Government Board for Scotland in connection with the housing of the working classes in Scotland is announced, and the Local Government Board intimate that the following is the list of competitors to whom premiums have been awarded in the above competition:—

Section I.—Lay-out and Design of Cottage and Flatted Types of Houses.—Premium of £125.—Miss E. D. Blacker and Mr. H. Heathman, 4, Colston Street, Tramways Centre, Bristol. Premiums of £42.—Mr. James A. Arnott and Mr. Burnett N. H. Orphoot, 15, Young Street, Edinburgh; Mr. John A. W. Grant, 15, Cargil Terrace, Edinburgh. Premium of £41.—Messrs. Cullen, Lochhead, and Brown, Brandon Chambers, Hamilton. Premiums of £20.—Mr. Alexander Inglis, 14, Bridge Street, Hawick; Mr. James Auston Laird, Summerlea, Kilmacoll; Messrs. Greig and Fairbairn, 31, York Place, Edinburgh. Premiums of £15.—Messrs. Muirhead and Rutherford, East Port Street, Dunfermline; Mr. A. R. Dannatt, Great Waltham, Chelmsford; Mr. C. Harrold Norton, 14, Bedford Row, London, W.C.; Mr. James D. Cairns, 63, George Street, Edinburgh.

Section II.—Lay-out and Design of Tenements.—Premium of £100.—Mr. John Arthur, 137, West Regent Street, Glasgow. Premium of £60.—Mr. Wallace Marchmont, 41, Ovington Street, Cadogan Square, London, S.W. Premium of £40.—Mr. James Carruthers, 209, St. Vincent Street, Glasgow. Premiums of £15.—Mr. G. Washington Browne, 1, Randolph Cliff, Edinburgh; Messrs. Stewart and Paterson, 16, Blythswood Square, Glasgow. Premiums of £10.—Mr. John A. W. Grant, 15, Cargil Terrace, Edinburgh; Mr. A. G. Paton, 44, Apsley Street, Partick, Glasgow; Mr. W. W. Mitchell, Church Gate, Chesunt, Herts; Messrs. Hutton and Taylor, 212, Bath Street, Glasgow.

Section III.—Design of a One Storey Cottage.—Premium of £40.—Mr. John Arthur, 137, West Regent Street, Glasgow. Premium of £25.—Messrs. Cullen, Lochhead, and Brown, Brandon Chambers, Hamilton. Premiums of £10.—Messrs. Stewart and Paterson, 16, Blythswood Square, Glasgow; Mr. James A. Arnott and Mr. Burnett N. H. Orphoot, 15, Young Street, Edinburgh.

The Board are considering the composition of the panel of architects in terms of Section 4 of the conditions of the competition, from which Local Authorities may select architects to assist and advise them in the preparation and execution of their housing schemes. The panel list will be published in due course and copies forwarded to Local Authorities.

The Housing and Town-Planning Committee of Edinburgh Town Council have now completed the revision of their draft scheme for the town planning of Craighentony area, and the draft plans will be submitted to the Town Council at an early meeting. It is intended that the Craighentony scheme shall serve as a model for the other town-planning schemes of the corporation.

OBITUARY.

Mr. Fred Bath, F.R.I.B.A., F.S.I., of Salisbury, who has just died after undergoing an operation, was in his seventy-second year, and in practice at Salisbury for forty-six years. He was the architect of the Albert Bridge Flour Mills, Battersea, S.W., and of the County Hall, Fisherton Schools, Milford Manor, New Sarum House, etc., of Salisbury; the Memorial Church, at Sherfield English; and many other works in Wiltshire, Dorsetshire, Somersetshire, Middlesex, and Surrey. Mr. Bath carried on his practice until his death, but had taken a much less active part in his profession during the last few years of his life, owing to ill health.

The death is announced of Mr. Alfred Virgoe Buckland (of Messrs. Buckland and Brown, surveyors, of 8, Frederick's Place, Old Jewry, E.C.), son of the well-known Virgoe Buckland, of Cannon Street, E.C., whose connection with the acquisition of land for London railways, including the widening of the L. and S.W.R. at Vauxhall and Bournemouth extension, and his many engagements as arbitrator and expert witness made him prominent in his calling. In addition to his business, the deceased, who was in his 56th year, served his country during the war, being appointed Deputy Chief Valuer and Compensation Officer to the Directorate of Land, War Office, under the Director-General, Sir Howard Frank.

The death is announced on February 10, 1919, of Mr. William Brindley, of Eastercourt, Bosecombe, Hants, and 63, Westminster Bridge Road, London, in his 87th year. He was buried last Thursday at Wimborne Road Cemetery, Bournemouth. The deceased was the senior member of the well-known firm of Farmer and Brindley, the well-known architectural sculptors and carvers.

Our Office Table.

Mr. Norman Dean was elected president of the Duddleston and Nechells branch of the Birmingham and District Tenants' Federation, formed last week at Loxton Street Schools, Birmingham. He said that there were in Birmingham over 1,000 houses with ten people, eating, drinking, and sleeping in the same room; over 3,000 houses each inhabited by four families; 5,000 with three families; and over 10,000 with two families. Unless Birmingham woke up they would be out of the scheme under which the Local Government Board afforded financial assistance. Mr. William Ellis, the general secretary of the federation, said there were at present 150,000 homeless people in the city. They must demand that 50,000 houses be erected, plus a house for every house demolished. If they wanted to provide a memorial for soldiers let them furnish them with homes; they did not want to go and view a civic mortuary. About four months ago the Property Owners' Association deposited a bill asking for a permissible increase of rent owing to the increased cost of repairs. What was Birmingham's reply? Of 200,000 houses in Birmingham 190,000 were neglected and travelling towards dilapidation. The federation wanted 20,000 tenants to formulate complaints in writing, and that would be the reply.

The King has lent to the National Gallery his panel by Pesellino representing St. James and St. Mammes, from Buckingham Palace. This panel, acquired by Prince Albert in 1846, has, we are told, been recognised as a portion of an important altarpiece by the Florentine Master, Pesellino, which was cut up, about a century ago, into five pieces. The centre piece was bought by the National Gallery in 1863, and two other pieces were added to it last year, one by a bequest from the Countess Brownlow and the other by purchase. The fourth piece has been lost. The loan by the King of the fifth portion will enable the Trustees to re-unite all the extant parts of the altarpiece. While the necessary arrangements are being made

the panel will be temporarily exhibited at the National Gallery next the companion panels from which it has so long been separated.

With the spread among builders of the knowledge that zinc is made remarkably ductile and tough by rolling, that metal is steadily displacing the more expensive lead and copper for roofing, flashing, spouting, and guttering. In many situations galvanised iron, commonly used for outside work, is cheaper in first cost; but when length of life, cost of painting, and replacement are taken into account, it is more expensive for permanent construction. Rolled zinc is now largely used in the manufacture of the so-called "lead" glass. This zinc is often given the lead finish desired for architectural effect. Zinc is also made into the forms of shingles and tiles, which can be treated to give highly artistic effects. These possess the great advantage of durability and unbreakability. Spouting and guttering of zinc also have artistic possibilities. Zinc may be hard, medium hard, and soft rolled. The hard rolled will not stand bending for seam work, while the soft metal can be drawn, bent, and spun into the greatest variety of shapes. Prejudice against the use of zinc has its root in ignorance of these various qualities. No one using brass sheet would order it without specifying the kind of brass; yet ordinary sheet zinc is expected, when bought from a dealer, to meet any and every use. In spite of popular belief to the contrary, zinc is one of the metals most easily soldered.

A special course in architectural design has been arranged in connection with the University of Liverpool School of Architecture to meet the requirements of architects and architectural students who have been serving with his Majesty's Forces, and who wish to take the opportunity to revive and increase their facility in design by a short course of intensive study. In connection with the University Department of Civic Design, a short course in town planning and housing has also been arranged to meet the requirements of architects and surveyors who have been serving with the Forces, and who wish to refresh their knowledge and get into touch with the most recent developments of these subjects, particularly those aspects which are usually included in the term "reconstruction." This course, which has the approval of the Local Government Board, is under the direction of Professor Patrick Abercrombie.

The aims and objects of a piece of reconstruction work undertaken by the Society of Friends were explained last Saturday, when the foundations of the first cottage in the Quaker village at Jordans, near Beaconsfield, were laid. The property consists of about 100 acres and adjoins the ancient Jordans Meeting House, in the burial ground of which is the grave of William Penn, the founder of Pennsylvania. The object is to promote village industries on lines which will provide full opportunity for the development of character and self-expression. Every cottage will have its plot of land, while a village green and a wood are to be preserved as open spaces for the use of the inhabitants and the public.

The London County Council will promote legislation to enable it to own omnibuses and to run omnibus services auxiliary to the tramways, and seek powers for the provision of several important links in the tramways system. The proposed new tramways are from Charles Street to Blackfriars Bridge via Farringdon Road, Farringdon Street, and New Bridge; from Gray's Inn Road to Farringdon Street via Holborn and Charterhouse Street; from Aldgate terminus to Aldgate Station via Aldgate High Street; from Hampstead Road to Oxford Street via Tottenham Court Road; from Seven Sisters Road to Stamford via Amhurst Park; and from Southampton Row to New Oxford Street via Vernon Place and Hart Street. The total length in single line of the proposed tramways is about 5½ miles, and the estimated cost of construction and equipment is £319,490. It is also proposed to apply to Parliament for the removal of the existing limitations in respect of the use of the tramways in Toley Street, between Bermondsey Street and Joiner Street.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Strand, W.C.2

Spire, Shipton-under-Wychwood, Gloucestershire. Sketch by Mr. Maurice B. Adams, F.R.I.B.A.
Dovecot, Shipton-under-Wychwood, Gloucestershire. Sketch by Mr. Maurice B. Adams, F.R.I.B.A.
New Combined Laundry, Shoreditch Workhouse and Infirmary, Kingsland Road, London. Plans and sections. Mr. Alfred W. S. Cross, M.A., F.R.I.B.A., Architect.
Bungalows, Marine Drive, Paignton, Devon. Plans, elevation, and sections. Mr. James R. Barnes, Architect.

Currente Calamo.

The new House of Commons is evidently watching suspiciously the encroachment of the Executive on its powers won by our forebears from the Crown. It had need to, for no more insidious attempts thereon have been made than by the proposals last week to limit its control of finance, and to deprive the electors of the one check left them on the appointment of Ministers. We are glad that both encroachments were so far successfully resisted as to limit their duration. But we greatly fear that continued resistance presently will be vain unless more members follow Sir David Maclean's appeal last week against the usurpation by an oligarchy, which evidently means to appoint "Ministers without portfolio," much in the same fashion as Cromwell sent out his Major-Generals to cow resistance to his own edicts. Already it is too evident that we have a Parliament uneasy about its own existence, and at the same time a Government so weak that it is sitting within a few weeks of a controlled general election of outside Parliaments to give representation and powers to Labour and industrial opinion which is practically voiceless in the House of Commons. Moreover, we are mixing up things generally in such a fashion, that not one in the first dozen men met in the street could tell the rest who really is in control of the nation's business, what the "Cabinet" is, whether we are ruled by the "War Cabinet," which seems to sit *en permanence* in Paris, or the Domestic Cabinet—if there is one, and of whom it consists, and how it works. Our governing system is breaking down, and its failure is the chief cause of the unrest and distrust that are visible among all classes, which may usher in a bastard democracy mischievously antagonistic to the authority of Parliament, and pandered to by Ministers of the Crown who have forgotten their first duty, and sought safety from the consequences by the emasculation of the legitimate source of their authority.

The text of the Bill for the creation of the Ministry of Health has been made public. The attempt of the measure is to concentrate under the direction of the new Minister the various powers hitherto exercised by the five other depart-

ments more or less concerned with the care of the public health. In its operations the new Ministry will stand or fall by the influence it manages to exercise over the Local Authorities. It will probably allow itself to be blocked and its measures to be stultified in backward districts, and little good will be accomplished. The Board of Education, the Local Government Board, and the National Insurance Commissioners are all affected by the Bill. The Insurance Commissioners practically disappear, and all the health functions of the Local Government Board and the Ministry of Education are to be merged in the new Ministry. The proposed change probably heralds the complete abolition of the Local Government Board, which, banded about between new and aspiring rivals, hardly knows where it stands. It was always looked upon as an interloper by older and more aristocratic departments, and now it seems in process of being elbowed out by determined and powerful departmental parvenus, who will draw huge salaries and extol their achievements at festal dinners, but will do little to justify the wholesale creation of fresh functionaries who will do less to earn their keep. That the framers of the Bill are already nervously anticipatory of the jobbery likely to be perpetrated by these gentry is apparent from the remarkable sub-section of Clause 3 of the Bill. The Ministry of Health is to take over "all the powers and duties of the Insurance Commissioners"; but this clause makes one curious exception. It provides that the sums provided for research out of the special sanatorium benefit funds shall be administered in future, not by the Ministry of Health, but by a Privy Council Committee. Why, one wonders, should the Ministry be deemed the wrong authority to carry on this research work?

The legal position of "extras" in building contracts is a serious matter for contractors. The recent House of Lords decision in the case of "Nott v. Cardiff Corporation" settles a point of principle in a broad and business-like way, which must make it a leading authority. We print elsewhere a report of a paper read by Mr. W. Valentine Ball at the Society of Architects. This was a contract to build a reservoir for over £200,000. During its progress the chief engineer required cer-

tain costly works to be carried out which, he said, came within the contract. The builder claimed that they were extras, but did what he was ordered, as he was bound to do. The value of the work so done was £13,000. The engineer had refused his written order, and the contractor went before the arbitrator, who ruled in his favour, and that all this work was extra. The High Court supported him, and Bray, J., held that the award of the arbitrator took the place of the order in writing of the engineer, and so the Corporation were liable. In the Court of Appeal two out of three judges decided against the contractor on the technical ground that a written order was a "condition precedent" which arbitration could not override; while Bankes, L.J., dissented. The plaintiff went to the Lords, where, by four to one, this ruling was reversed. Lord Finlay, L.C., held that, as the items in dispute were decided to be extras, the engineer ought to have given his order in writing, and that the arbitrator's award now took its place. So the contractor had final judgment for his £13,000 and all costs. This case will greatly affect all future litigation over disputed "extras."

The selling of houses at profiteering prices over the heads of occupying tenants is going on merrily, and will shortly be dealt with by the Government. The weak part of the plan is often the getting out of a tenant so that the new purchaser may have possession. A new and good point was successfully taken in the recent case of "Stovin v. Farebrass" which is of much present practical interest. The plaintiff was owner of a house at Southend which was below £26 in rateable value and so came within the Increase of Rent Acts, 1915 and 1918. The plaintiff had sold her house with early possession, and had given notice to quit to the defendant as her tenant, who declined to leave. In the County Court judgment in ejectment had been given by the judge under his discretionary power in the Act of 1915, he holding that the Act of 1918 did not apply. On the tenant's appeal to the High Court all this was reversed. The two judges sitting held that the County Court judge had not exercised his discretion "judicially," and had taken a wrong view of the earlier Act. They also ruled that the later Act of 1918 had, in spirit, said that a person

who bought property after 1917 should not be deemed a landlord under the Act of 1915. That being so, the new purchaser could not apply for possession, nor could the plaintiff say that she wanted the house for her own use and occupation. Therefore she could not obtain possession, and the appeal was allowed. If larger houses are brought under these Acts there will be some trouble over these profiteering sales of property.

The Government is making bread, milk, and meat dear by keeping out cheap corn, and taxing us all to provide the ninepenny loaf at the nation's cost. As every buyer of books or newspapers knows, they are two, three, four, or more times as dear as before the war; and the Government admits that the printing industry is seriously diminished. The price of paper is just double in England what it is outside England. There is plenty of paper and woodpulp which could be imported, and there are plenty of ships to bring it. But the Government will not let the paper and the woodpulp come in. Why? The Defence of the Realm Act, which was intended to conserve British shipping during a national crisis, is being used to create monopolies and perpetuate the plunder of the consumer. And all this is being done at a time of serious and growing public unrest largely caused by the excessive price of commodities.

Lord Rosebery in a letter to the *Scotsman* very truly remarks that what we may call the hurricane season of memorials is now upon us, and presents a favourable occasion for considering the procedure with regard to them. The first thing that is naturally done is to select an object for the memorial. The next is to collect as much money as can possibly be done. The third is to confide the disposition of this money to a body of worthies, usually municipal, who have but a vague idea of what to do with it. The last and saddest phase is when the actual memorial is disclosed to the subscribers, who generally have occasion to gnash their teeth at the result, and wish that they had kept their money for the purpose of demolishing what has been erected. The last attempt was on Holyrood, which it was proposed to convert into a sort of Cockney Vatican. This was fortunately baffled; but now the depredators have found an even nobler quarry, and are laying their hands on Edinburgh Castle. It seems strange to ruin the greatest relic of our former wars in order to commemorate the last; but we are promised all sorts of advantages. There is to be a renovated castle, with a cathedral, a museum, and what not; why not have a winter garden, which some of our reformers wanted some years ago? We have no more doubt than Lord Rosebery that the new building will have many advantages, and will form an agreeable promenade for tourists. It will, however, as he says, not be Edinburgh Castle, but a committee castle. What will it represent? The rough old structure now existing represents nothing less than the history of Scotland. The committee castle will

represent the taste of the committee, whatever that may be. Failing all other help, Lord Rosebery asks, "Will not one of our countrymen from the Dominions raise a protest against this most wanton insane proposal?"

At a conference of the North-Western Federation of Building Trade Employers and the National Federation of Building Trades Operatives in Manchester last Wednesday, a scheme for a North-Western Area Joint Council was agreed upon. Under the scheme, which embraces Lancashire, Cheshire, Westmorland, Cumberland, and certain parts of North Wales, North Derbyshire, and North Shropshire, four grades of pay are substituted for the existing seventeen different rates of wages and the hours worked per week are reduced from 54 to 46½ in summer and to a maximum of 44 in winter. The new scales of pay mean an increase in the case of every town and district except Liverpool and Birkenhead, which anticipated the present arrangement in December last. For the highest grade areas, which are the large industrial districts, craftsmen will receive 1s. 8d. an hour, and in the lowest grade, which applies only in rural districts, the rate will be 1s. 5d. an hour. The conference decided to leave the application of the shorter week to the district area councils, and not to insist on any hard-and-fast rule as to a uniform starting and stopping time. It was felt that this was a matter more likely to be satisfactorily adjusted locally. About 35,000 operatives and 3,000 employers come under the scheme. Wages fixed by the Council merge all bonuses. They are regarded as the standard rates, and can only be altered through the machinery set up under the scheme. It is intended that all adjustments of wages (which come up for review every January) shall be made upon an area basis on the initiative of the representative body of employers or operatives acting on behalf of the whole area, and that the Government shall be made parties to any agreement for any alteration of wages. The whole area will be divided up into ten district areas, in each of which will be a district area council, which will transact all business pertaining to its own district, such as the consideration of disputes, the conducting of negotiations with local bodies, the fixing of holidays, the carrying out of the decisions of the Centre Joint Council regarding wages and conditions, and the discussion of the question of the re-grading of towns in the area.

The advocates of the taxation of land values play, without knowing it, into the hands of the speculator in land. If they do not know it, let them ask any builder how it works. Mr. C. H. Oldham, the chairman of the Manchester and District Builders' Association, can tell them, for one. Writing from 100, King Street, Manchester, he says: "Eight or nine years ago I was in Vancouver, B.C. They had such a system of taxation in force there. The result was that the price of land on O'Shaunhessy Heights (the elite of Van-

couver lived there) was 10,000 dols. for quarter of an acre; in the middle-class suburb of Kitsilano, 3½ to 4 miles from the centre of Vancouver, land was sold at from 20,000 dols. to 25,000 dols. per acre. For instance, I heard of a lot in Sixth Avenue, Kitsilano, supposed to be cheap, and I was asked 4,800 dols. for a plot of 100 feet frontage by 90 feet deep, on which three houses could be got. In English money this amounted to £320 per house for the bare land. Of course, the price of the land went with the price of the house, and we had to pay in rent 40 dols. per month for a house with basement, two rooms, kitchen, and hall on ground floor, three bedrooms and bathroom upstairs, about £2 per week English equivalent. I was never offered land within six miles of Vancouver upon which I could have erected the smallest cottage at a price which worked out at less than 1,000 dols. per cottage, £200 for the land alone. In a great measure the shortage of houses arises from the acceptance in high places of the opinion of amateur experts. I suggest that it may possibly be wise to consult the builder, for I can assure your readers that he is not only very anxious to get to work building houses, but he is just as desirous as anyone else that they shall be good, healthy homes to live in. There is one proved fact in his favour—he can do it more economically than anyone else." The worst of it is the "experts" and other faddists will not give him the chance, and Lord Downham, whose new title should surely have been "Down'em," gloats over the idea that "the day of the builder is past." Worse luck, if so, for the people doomed to live in the State-subsidised houses.

At a special meeting of the Essex County Council on February 15, a very valuable Report by Mr. G. Topham Forrest, the county architect, was submitted with reference to the erection of workmen's cottages in Essex, which forms a substantial part of a comprehensive scheme of reconstruction, comprising not only housing, but the provision of light railways, wharfs, and also the reclamation of derelict land, drainage, and maintenance of sea walls, and agricultural education. The scheme is a very ambitious one, and will cost upwards of three and a half millions, and the same will be forwarded to the Ministry of Reconstruction immediately. Essex is the first county to initiate such a comprehensive scheme, and it well deserves the study of all authorities preparing such. The houses will cost upwards of a million to erect, and as the matter is very urgent, the committee, of course, is faced with the usual difficulty of materials, but Mr. Forrest's report well explains these circumstances, and the advice he tenders is practical throughout. Bricks are scarce in Essex, and as the 2,170 cottages it is proposed to build would take 45½ millions, Mr. Forrest suggests the use of timber, the amount of which required for the carcassing of the houses would be 306,000 cubic feet, 9,800 squares for the flooring, and 221,400 cubic

feet for joinery furnishings. This it is proposed to dry *in situ*. Concrete is the material proposed instead of bricks or tiles—not plain concrete but concrete blocks, which can be made better and more cheaply on the spot, and which lend themselves to good design better than plain concrete. Some excellent suggestions are offered as to the type of house suitable, their allocation, and the selection of builders. We do not know if the Essex County Council contemplates the publication of the Agenda of the meeting at which the above was discussed, but it might very well at least publish Mr. Forrest's report. It is one of the most useful contributions to the elucidation of the housing question we have yet seen.

Some information, additional to that we recently gave, is supplied by Mr. Mervyn E. Macartney in a communication to the *Times* dealing with the completion of the repairs to the south-west pier of the dome of St. Paul's Cathedral. Many interesting facts have come to light, such as that the main stone on which the two arches pitch proved to be a huge block of Burford stone and not Portland, which Wren employed in this pier. This stone was cracked right through. Great difficulties beset the builders in obtaining large stones, and evidently this block was utilised because there was no other of that scantling available from Portland. Its dimensions were 5 ft. by 6 ft. by 2 ft. 3 in. To replace it being impossible, the shattered portions, weighing $4\frac{1}{2}$ tons, were removed, and as large a piece of Portland inserted as was practicable, which, grouted in cement, has made a sound base at this point. Another discovery was the fact that a great many of the carved capitals were not the originals, but poor copies insecurely fixed to the stone behind them by cramps, dowels, and lead. In many cases so badly had they been fixed that they fell off on the slightest attempt to examine them. Although no positive evidence exists to show when they were executed, we may assume that they were of later date than Wren's building. No work of such a "shoddy" description would have been passed by Wren or Hawksmoor. When the full weight of the dome came on to the piers it caused serious shatterings of the stone walling, and it clearly went on during the first half of the eighteenth century, as the rubble filling of the piers dried and became compressed. The core or rubble filling is not of uniform quality. A great deal of the mortar was made with a lime obtained by burning chalk lime or shells. Had Wren used even a poorly hydraulic lime he would have had a much more satisfactory agglomerate. Considering the extraordinary aptitude of this genius for experiments, more particularly in chemistry, Mr. Macartney is lost in wonder that he should have used such a poor cement, especially as he was always lauding the "fine Roman manner" and meant himself to "build for eternity." To improve the power of resistance of the filling in the S.W. pier the method was employed of solidifying by liquid grout. By this means it is believed that in addition to the 2 ft. of reliable stone-

work on each side of the pier, at least an extra 6 in. of the core, and possibly 1 ft., have been consolidated. Taking a mean of 9 in., this means that the reconstituted work on the pier represents about half of the sectional area of the pier (*i.e.*, 2 ft. on each face=4 ft., and 9 in. of grouted core on each face=1 ft. 6 in.—total, 5 ft. 6 in. out of 9 ft. 6 in.). Another discovery was the method of construction of the building. The piers were built up with set-offs—that is to say, the masonry was reduced in area as the work gained height. The foundations are set on a bed of very hard clay, and consist of two layers of stone each 2 ft. thick and spreading out 4 ft. all round the crypt-piers. The piers in the crypt are set back—*i.e.*, reduced from this to 16 ft. \times 22 ft. This size is carried up to the impost or molding from which the vaulting of the crypt starts. At this point—*i.e.*, the level of the impost—the piers were set back or reduced 2 ft. They then continued perpendicularly till within 2 ft. of the floor of the church. At that point they went back to the face of the pier.

From some documents in Lambeth Palace Library Mr. Macartney learnt that there had been serious destruction of the stonework, and that it had been covered up in an unsatisfactory way. Owing to the faulty system of repair, it was determined to carry out a complete restoration about 1781, and to close the cathedral for nearly two years. Mylne seems to have used a large amount of stone veneer in his repairs and also iron cramps. Owing to the formation of rust some of the masonry has cracked and split in all directions. Every iron cramp and dowel has been removed so as to safeguard the public from all danger of falling stone as far as this pier is concerned. The papers of Mylne in Lambeth Library refer to some of the works carried out, such as the iron bands forged by "ships' anchor smiths" and the "compensation" worked on the moldings and on the main cornice level to disguise the settlements over the four arches of the transept. Evidences of these works are there to this day. One more discovery is noted, and that is that in the construction of the main arches Wren built the vousoirs at the springings of the arches on a level bed with only a short portion of the stone worked to a radius. The urgently needed reparation, of which the first stage is now completed, has taken five years of unremitting labour. Much has been learnt as to the condition of this pier, and in particular that a bolder method of procedure than has been hitherto possible would save both time and money. By employing steel centring the work could be materially quickened and expense saved. The difficulties of working so as not to interrupt the services would be enormously lessened and the ever-present fear of failure eliminated. Further funds are required to press on the work, but the cost of labour and of material has practically doubled since this restoration was initiated, and without a substantial response the very necessary repair of the fabric may be considerably delayed.

THE NATIONAL PORTRAIT SOCIETY.

The sixth annual exhibition of the National Portrait Society at the Grosvenor Gallery comprises 279 pictures and drawings, but the contributions by leading artists are few, and not many celebrities will be found among the subjects.

Mr. William Strang, A.R.A., shows a portrait labelled "The Red Jacket" (2), in which the garment which gives the title is certainly distinctive, but hardly enhances the charms of its wearer. His other exhibit is "Buenas Dios, Señor!" (192).

Mr. Ambrose McEvoy has no fewer than ten subjects hung. "The Green Hat" (12) is, speaking generally, his best. Sir John Lavery's portrait of Lady Lavery (13) is in excellent taste, and should win the admiration of many lady sitters, even if few are likely to help her husband by the gracious charm he has so happily transferred to his canvas. Hardly less admired has been "Mrs. Allhusen," whose portrait (22) is Mr. John S. Sargent's only contribution. Another good portrait is that of "W. H. Davis, Esq." (23), by Mr. Augustus E. John.

Mr. Walter Sickert's "Le vieux Modèle" (21) is a fine bit of work, and evokes regret that there is not more like it from his brush. Of Mr. R. G. Eve's long list of ten, "The Marquess of Carisbrooke" (29) will naturally attract the most notice, and next thereto "The Lord Alington" (53). Mr. Alvaro Guevara's first picture, "The Artist's Mother" (1), gets, not undeservedly, the leading position in the large gallery. Mr. Glynn Philpot, A.R.A., is well hung with his portrait of "The Late John Leslie, Esq." (11).

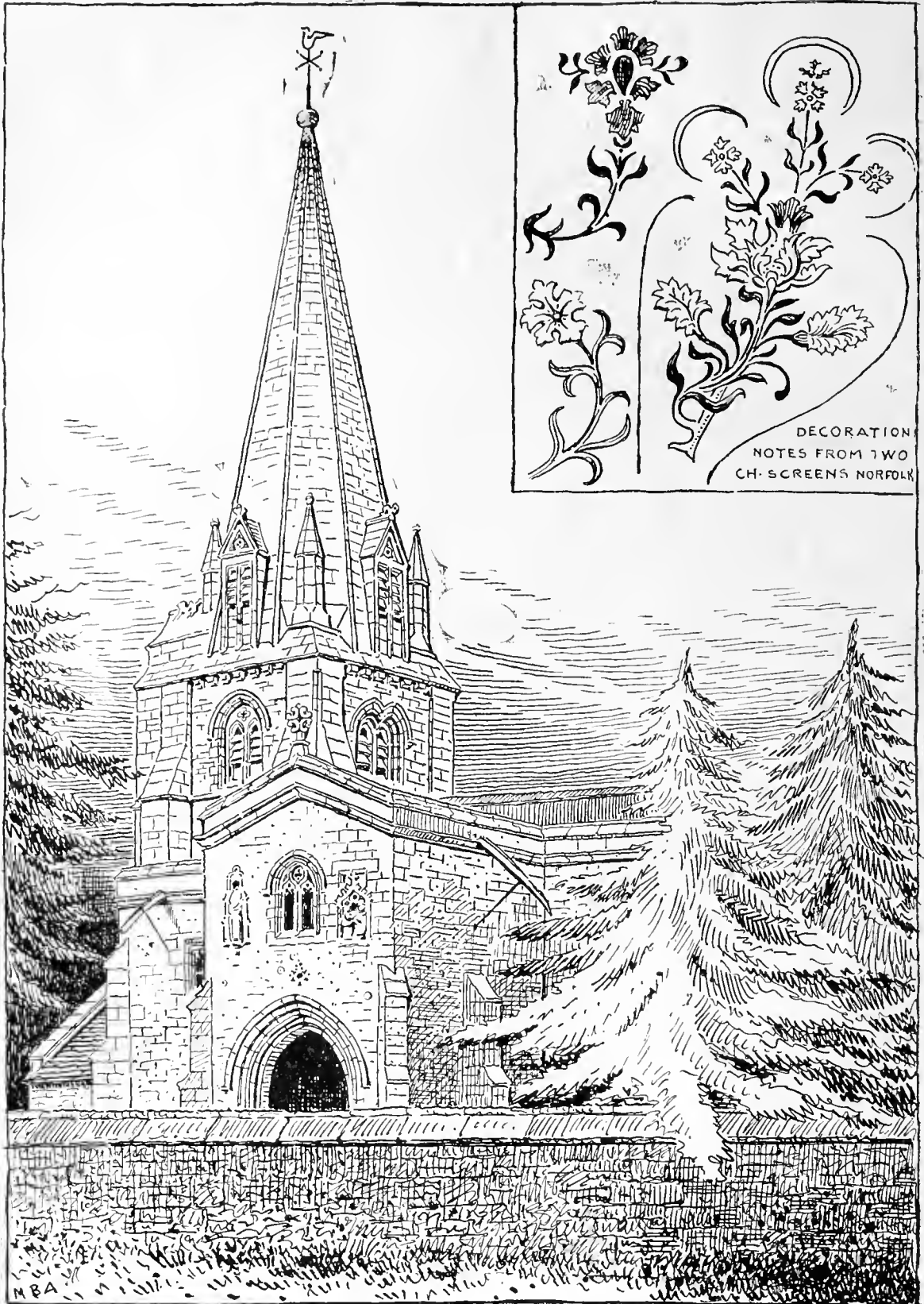
Mr. David Jagger is successful with all five of his subjects; "Mrs. Henry Knox" (15) is one of the best. Mr. Francis Howard is to the fore with "Her Grace the Duchess of Marlborough" (20). Mr. William B. E. Ranken has four pictures hung, those of "Ernest Thesiger, Esq." (14), and "Lt.-Col. Sir Samuel Hoare, Bart." (24), gaining well-merited prominence. Mr. Gerald Festus Kelly scores well with "Mrs. Arthur Grenfell" (10).

There are not many noticeable subjects in the Long Gallery. Mr. Fred Stratton's portrait of Lord Sterndale (54), and that of Alderman Littleboy (55) are exceptions, perhaps principally owing to the colour advantages of their official costume. There are several good military portraits, but the most eligible soldier subject is seldom seen to best advantage in khaki. Mr. Fiddes Watt, A.R.A., sends a good portrait of "Charles Macfarlane, Esq., West Hartlepool" (62). Mr. Bernard Munns is fairly fortunate with "Sir Thomas Beecham, Bart." (75). Mr. Frederic Whiting is more so with "Lt.-Col. Granville Baker, D.S.O." (99), than with "Angela, Danhne, and Jeanne, daughters of Gerald du Maurier, Esq." (88).

The only sculpture worth mention is that by Mr. Jacob Epstein, including a bronze and an original study in the Large Gallery, and two plaster busts and an original study in wax in the Long Gallery.

Applications have been received from seventy architects, of whom nine have been selected, for the preparation of designs for the War Memorial Hospital to be erected at High Wycombe, at a cost of £15,000.

Among recommendations made by the Housing of the Working Classes Committee of the London County Council is one dealing with the basis of compensation in respect of insanitary property, and another that local authorities under the Housing Acts should have a general power, exercisable at their discretion on notice being given, of vesting in themselves any interest in a property, possession of which is required under a clearance or reconstruction scheme.



SPIRE, SHIPTON CHURCH, GLOS SKETCHED BY MAURICE B. ADAMS, F.R.I.B.A.

Our Illustrations.

CHURCH OF ALL SAINTS, BASINGSTOKE, HANTS.

The Lady chapel, rood beam to the choir, and the organ gallery of this new church appear in the accompanying view from the north aisle, which was exhibited at the Royal Academy last season. Mr. Temple Moore, F.R.I.B.A., is the architect. The building has an equal height for the nave and the chancel, a lofty arch dividing them. The aisles continue the entire length of the church, the chapel being at the east end on the north side and arched next the choir. The style generally is after the manner of the Fourteenth-century English work. We gave the plan and exterior views of the church in our issue of July 3, last year, and a view up the nave looking eastward was given in that of August 28, same year.

SHIPTON-UNDER-WYCHWOOD CHURCH, GLOUCESTER.

The accompanying pair of sketches are from the same village. The church is chiefly of Early English character, though the chancel, of much later date, is Perpendicular in style, with an eastern window of Jacobean detail. The tower and spire form the chief feature of the building. George Edmund Street, R.A., carefully restored the fabric when he was Diocesan architect for Oxford. The dovecote belongs to a notable Elizabethan house long ago known as the country seat of the Reades. The four gables and its glazed lantern light furnish a quaint skyline schemed in a plainly managed manner surmounting a four square tower terminating with the turret. The walls are of axed masonry with quoins well in scale to match. The roofs are covered with stone slates.

NEW COMBINED LAUNDRY, SHORE-DITCH WORKHOUSE INFIRMARY, KINGSLAND ROAD, E.

The workhouse laundry of this building having been destroyed by fire, a new combined laundry for the joint use of the two departments, workhouse and infirmary, has been provided. As rearranged the washing department of the laundry is placed on the north side of the connecting corridor and the drying department on the south side. All existing fittings and plant will be rearranged and refixed to meet the requirements of the two departmental buildings. The new floor lantern light and roof flat will be of ferro-concrete construction. The work is being carried out by Mr. A. E. Farr, contractor, of Great St. Helens, London, E.C. Mr. Alfred W. S. Cross, M.A., F.R.I.B.A., of New Bond Street, W., is the architect.

BUNGALOWS AT PAIGNTON, DEVONSHIRE.

This building forms one of a group of bungalows facing the sea, having pleasure gardens laid out by the Paignton Council in front, with ideal views of Berry Head and Torquay. The walls are faced with Exeter red bricks, and dark red tiles to roofs from the same source. The joiner's work, executed by Messrs. James Barnes and Sons, of Brighton. The oak fencing and gates dividing the sites were put up by Messrs. Box and Turner, of Ardingly, Sussex, the bungalows set back thirty-five feet from the main drive along Paignton Front, space for gardens, lawns and terraces thus being obtained. Mr. James R. Barnes, of Paignton, is the architect.

Correspondence.

CITY OF BIRMINGHAM PINEAPPLE FARM AND FORD HOUSE LANE COMPETITION.

To the Editor of THE BUILDING NEWS.

Sir,—I enclose herewith copy of circular which is being forwarded to all architects in this district in relation to the above scheme. —Yours faithfully,

E. MARSTON RUDLAND, Secretary,
Birmingham Architectural Association,
14, Temple Street, Birmingham.
February 19, 1919.

Dear Sir,—We have to advise you that the replies received from the Housing and Town Planning Committee not being satisfactory or in accordance with the Royal Institute of British Architects' suggestions for conducting competitions, architects are requested not to submit designs.

The matter is being taken up with the operatives' and other associations, and every means is being taken to bring the strongest pressure upon the Housing and Town Planning Committee in order to ensure the schemes being carried out in accordance with the conditions of the Royal Institute of British Architects.

It is, therefore, strongly suggested, in the interests of the profession, that no architects should submit plans until a favourable solution is arrived at.—Yours faithfully,

W. ALEX. HARVEY, President.
E. MARSTON RUDLAND, Secretary.

[We trust this advice will be taken by all interested, and that there will be no black-legs.—ED. BUILDING NEWS.]

THE BOLTON SCHOOL COMPETITION, BOLTON, LANCASHIRE.

Sir.—It would appear that the motive underlying the successful design is concentration with the object of securing low capital cost. If our judgment be correct this ought not to be the underlying, the guiding motive, in a question of this kind, but looked at from this point of view the successful design has undoubtedly merited the award it has obtained. But at what cost in inconvenience, unsuitability, and disregard of hygiene? The very ingenuity of the scheme appears to us to be its own condemnation.

For what do we find?

1. Cloakrooms arranged in such a way that incoming and outgoing scholars jostle one another, defective light, improper ventilation, and, if of the thorough kind, then into a main corridor rendered inevitable because completely over the cloak-rooms are other buildings.

2. Not one of the important buildings of the school with the exception of the chapel is lit on more than one side, both ends and the other side being in darkness, and there is little or no room provided from which spectators can witness the various school functions.

3. The dining halls are inconveniently placed in the third story.

4. The Art and Handicraft Departments are respectively on two levels.

5. There are no masters' or mistresses' rooms placed advantageously for oversight of the playgrounds.

6. The chapel in relation to the position of the organ and the choir at opposite ends, and its extreme length in relation to its width leaves much to be desired. It ought to be the dominant building, but it is completely hidden from the main road.

7. Administrative departments are deficient.

8. A point on which the Board of Education lays much emphasis is entirely neglected, to wit, direct light on both sides of classrooms, and this is aggravated by the fact that all the classrooms are as many as six desks deep from the windows, the rooms being relatively deep and narrow, the dimensions both ways tending to deficiency of daylight.

9. Laboratories and some of the corridors are badly lit.

10. There are no lavatories or w.c.'s. on first or second floors, either for masters or pupils.

Now here we have a magnificent site of about 14 acres, over the greater portion of which the buildings might have been expanded, but concentration, the leading motive of the design, has contracted them within the

space of less than one-half that area with the results above mentioned of sacrificing nearly every convenience for objects none of which are in the public interest, but are detrimental to the health of the scholars and staff, for it will be found that by comparison with the latest ideas as to the housing of the working classes wherein ten to sixteen houses are considered enough per acre, the persons aggregated on the site proper of the successful design of this school represents the equivalent of forty houses per acre, and thus this great and leading thoroughfare, this Prince's Street, of Bolton, is to be converted, in part at least, to something like a congested area, on which are to live for a large part of their time, approaching 1,200 people, not as in the intended new dwellings of the working-classes sixty per acre, but the excessive number of about 200 per acre.

It is then true that whilst artisans' dwellings are to receive hygienic considerations, schools must follow the lines of the old and bad past?—Yours, etc.,

STOTT AND SONS,
5, Cross Street, Manchester.

OBITUARY.

The death is announced of Mr. Anthony Scott, M.S.A., architect, of 49, Upper Sackville Street, Dublin, at the residence of his son-in-law, Mr. T. J. Byrne, A.R.I.B.A., 1, Victoria Terrace, Rathgar, on the 17th inst., at the age of seventy-four years. Mr. Scott was one of the oldest and most respected practising architects in Ireland, and his loss will be keenly felt by an exceptionally wide circle of friends and acquaintances in many parts of Ireland. He was the oldest Irish member of the Society of Architects, London, upon the council of which body he served for many years, showing the most active interest in its welfare, and was unsparing in promoting its well-being. Mr. Scott was a native of the County of Galway, and leaves four sons and four daughters. Two of his sons are members of the architectural profession, Professor W. A. Scott, R.H.A., and Mr. A. Colman Scott, and his eldest daughter is the wife of Mr. T. J. Byrne, A.R.I.B.A., architect.

The death occurred on February 10 of the late Mr. Horace Cheston, of 3, Tudor Street, E.C. The deceased was a fellow of the Royal Institute of British Architects and a Fellow of the Surveyors' Institution, and for a few years acted as one of the honorary examiners of the latter Institution. He was educated at Haileybury, articulated to the late Mr. John Whichcord, and after a Continental tour carried on for over forty-five years a general practice in the City of London as architect and surveyor, a large number of buildings of all descriptions having been carried out under him, including a number of branches for the London County and Westminster Bank. The deceased was for nearly thirty years one of the London district surveyors. The funeral took place at Sutton Cemetery on Friday, February 14.

COMPETITIONS.

CITY OF WORCESTER HOUSING SCHEME.—Members of the Society of Architects are requested not to take part in this Competition without first ascertaining from the Secretary of the Society that the conditions have been approved by the Council.

It is proposed to build a village clubhouse at Bishopstone, Hants, at an estimated cost of £500.

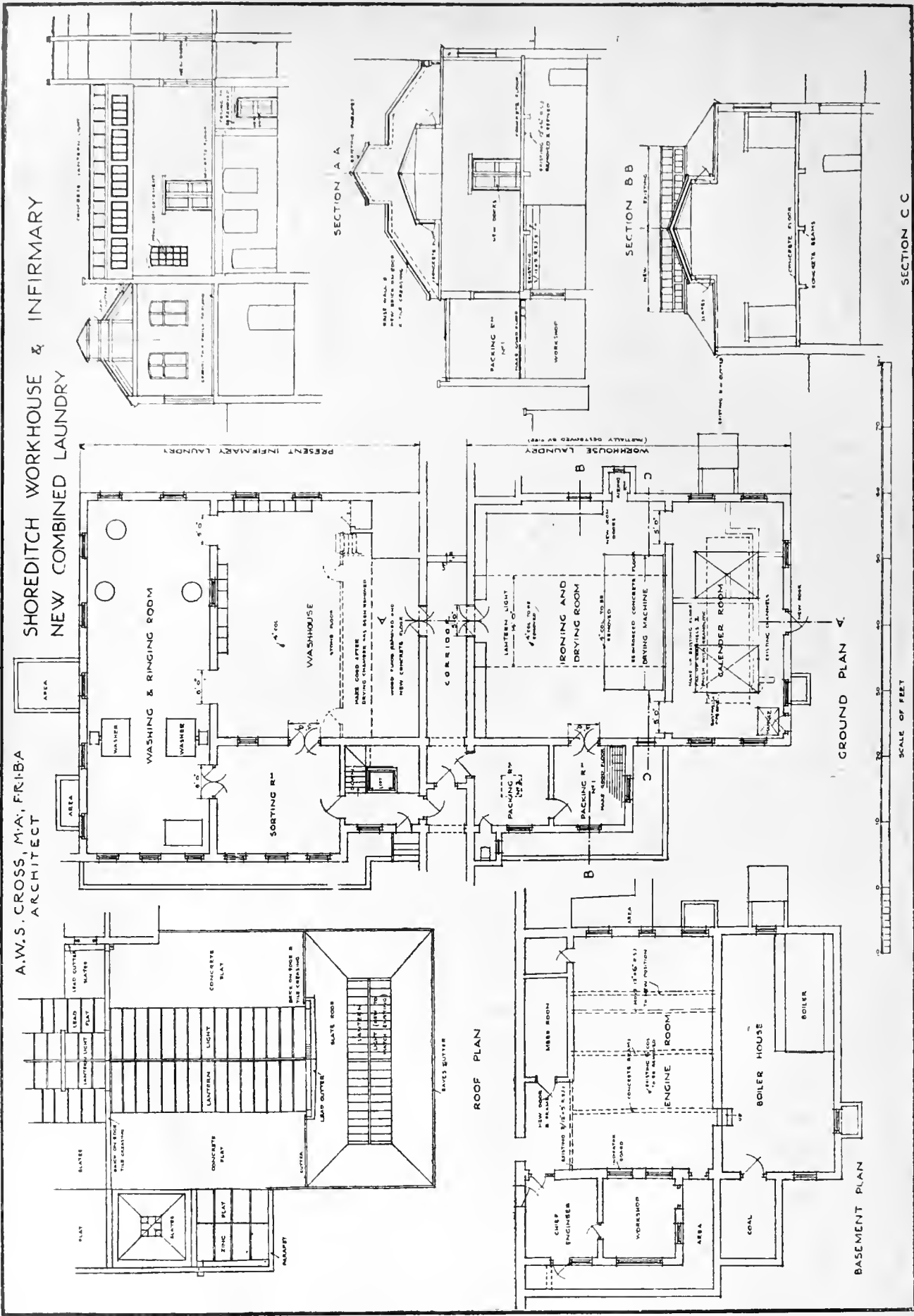
As a war memorial to the fallen, the church people of Colwyn Bay have adopted a scheme for the extension of St. Paul's Church. Mr. W. T. Caroe, F.S.A., architect to the Ecclesiastical Commissioners, has prepared the necessary plans. The estimated cost is £2,500.

An offer of £140,000 has been made for the site in the Strand on which stood the Tivoli Music Hall, on behalf of a London syndicate, headed by Mr. William Williams, well known in cinema enterprises. It is proposed to erect on the site a building designed primarily for what is described as a "super-cinema and restaurant." It will be capable also of serving as a first-class West End theatre or music hall. The site was offered for sale in 1915, but was not disposed of.

Maidstone Town Council are considering a recommendation to erect a new town hall and war memorial hall, at an approximate cost of £150,000.

A.W.S. CROSS, M.A., F.R.I.B.A.
ARCHITECT

SHOREDITCH WORKHOUSE & INFIRMARY
NEW COMBINED LAUNDRY



GROUND PLAN

ROOF PLAN

BASEMENT PLAN

SCALE OF FEET

SECTION C C

NEW COMBINED LAUNDRY, SHOREDITCH WORKHOUSE AND INFIRMARY, LONDON.

Mr. A. W. S. CROSS, M.A., F.R.I.B.A., Architect.



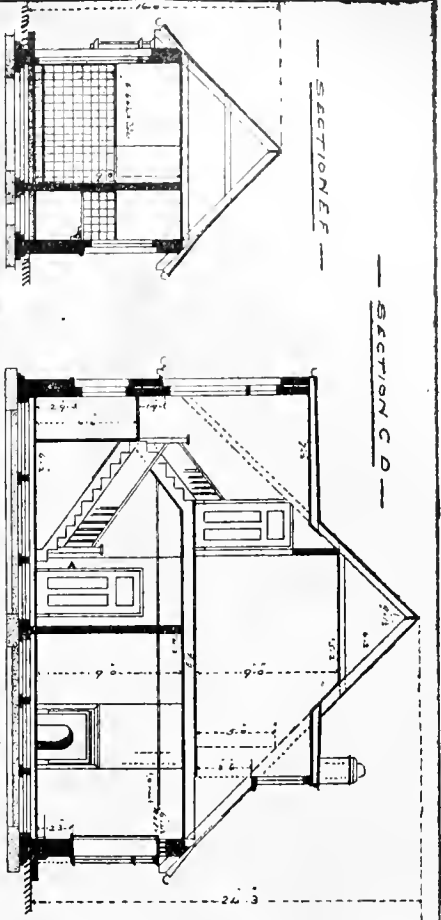
Kate Gray, Photo.

CHURCH OF ALL SAINTS, BASINGSTOKE, HANTS
MT. TEMPLE MOORE,

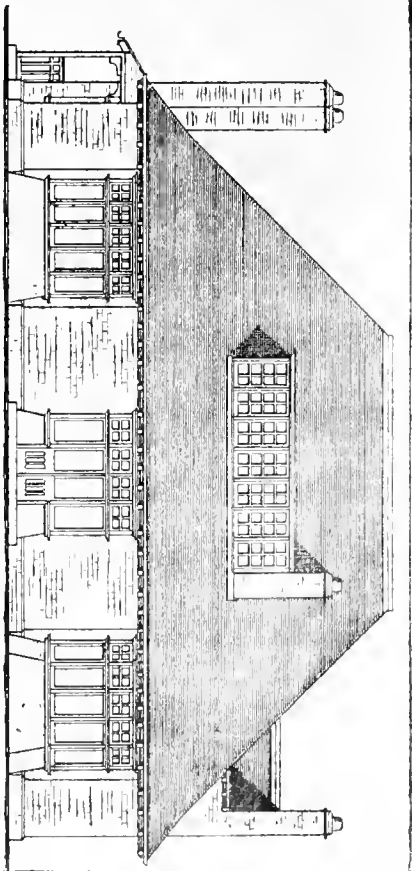
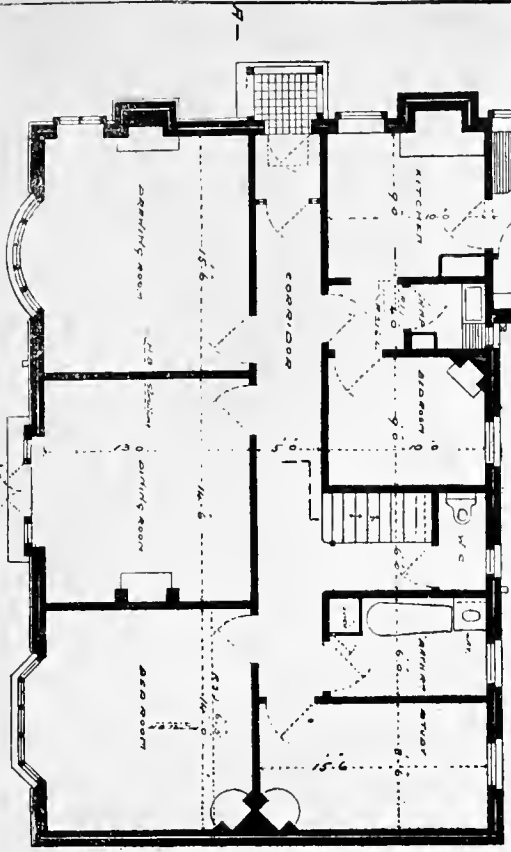


VIEW OF LADY CHAPEL AND ORGAN GALLERY.
J.B.A., Architect.

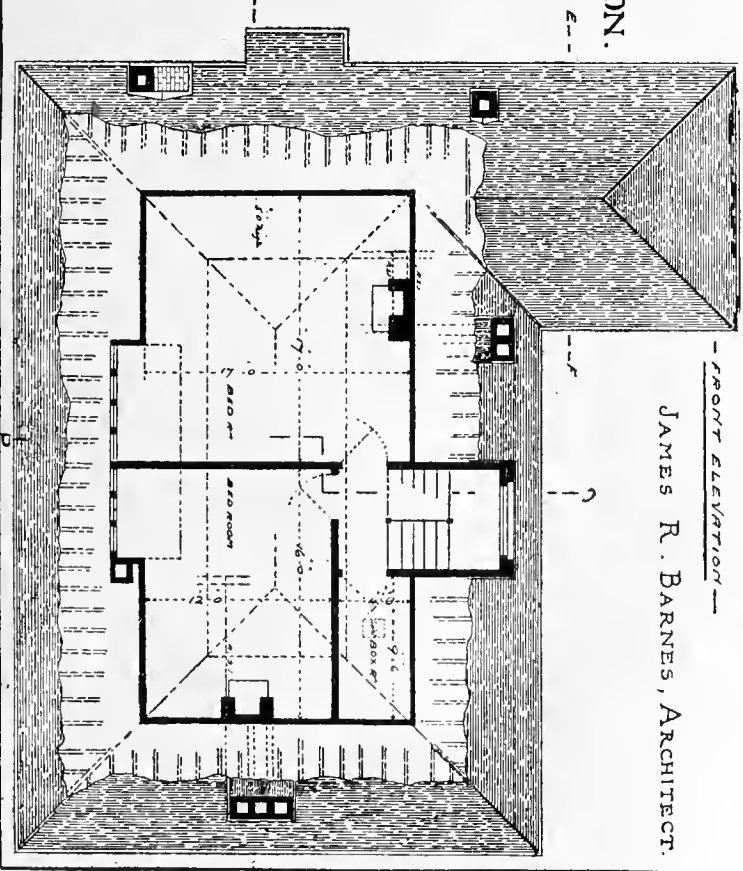




BUNGALOW'S, MARINE DRIVE, PAIGNTON,
DEVON.



JAMES R. BARNES, ARCHITECT.



NOTT V. CARDIFF CORPORATION.*

AN IMPORTANT DECISION ABOUT EXTRAS.

By W. VALENTINE BALL, M.A., O.B.E.,
Barrister-at-Law.

The case of Nott v. The Cardiff Corporation, which was decided by the House of Lords shortly before Christmas, 1918, but has not yet been fully reported, merits the attention of all who are concerned with contracts for large works.

It involved the consideration in a novel form of an old question, namely: In what circumstances can the employer be made liable to pay for extras? The forms of contract in common use have been so framed that the employer can only be made liable to pay for extra work in special circumstances. Broadly speaking, he can only be charged (a) if the architect decides that the contractor is entitled to be paid for something which is an extra; and (b) if the architect has given a written order. In the case under notice, the question arose as to the legal rights of the parties where the architect had refused to give a written order.

Before dealing with this case, I desire to make a few preliminary observations about extras.

Many of the disputes which arise between builder and building owner relate to extras. Most building owners want to have their work carried out for a sum certain. The man who has decided to build a house for £3,000 does not like to have to pay £3,500. The builder, on the other hand, who has tendered for the work at £3,000 has probably, under stress of competition, cut his fingers rather fine and cannot afford to do extra work without extra remuneration. As being intermediary between the two, the architect has to try and please both. For his own credit's sake he wants to finish the work in the best possible style, and he may therefore be tempted to use such authority as he has in the matter of extras to enable the builder to execute the many little improvements which suggest themselves while the building is going forward. It will be said, of course, "Why should not these things be all worked out beforehand?" But it is easy to be wise after the event.

The broad legal principle which underlies every contract for erection of buildings is easy to understand and easy to enunciate. If a builder agrees to erect a certain house of certain materials for £1,000, he can be compelled to carry it out to the letter. If he finds that he has to spend £1,500 to do the specified work, that is his misfortune. On the other hand, if there is a sudden fall in prices, which enables him to do it for £500, that is his gain and the employers' loss. In the simple case suggested, the question whether any particular piece of work or the use of a certain kind of material was something outside the contract might have to be settled in a court of law. For convenience and simplicity, however, the plan has been devised of leaving the question "extra or not" to the decision of the architect; and the customary forms of contract make elaborate provision for the methods by which extras shall be ordered and paid for.

Let me refer to some of the points which arise in relation to extras where the contract is in the most approved form—the form which has been sanctioned by the R.I.B.A. Clause 12 of that contract provides that:—

"The contractor shall, when authorised by the architect, or as provided by Clause 5, vary by way of extra or omission from the drawings or specification; such authorisation is to be sufficiently proved by any writing or drawing signed by the architect, or by any subsequent written approval by him, but the contractor shall make no variation without such authorisation. No claim for an extra shall be allowed unless it shall have been executed under the provisions of Clause 5, or by the authority of the architect as herein mentioned. Any such extra is hereinafter referred to as an authorised extra."

The Clause 5 referred to in this clause is that which provides that the contractor must make such variations as may be necessary in order to comply with local bye-laws, etc.

Before making such variations he must obtain the sanction of the architect. As regards other variations by way of extras and omissions, it is clear that Clause 12 imposes a duty upon the contractor to make them when the architect tells him to do so. In the exercise of the power so conferred, the architect might easily deprive the contractor of a very profitable piece of work, by telling him to omit it; or he might direct the execution of a very large amount of work. This clause also makes it plain that no extra or omission shall be considered unless sanctioned by the architect in writing.

It will be seen that by this clause the builder submits himself entirely to the judgment of the architect, subject, however, to the right of the builder to have the matter referred to arbitration, in accordance with a subsequent clause in the agreement.

Some importance attaches to the use of the word "vary" in this clause. It is necessary to observe that an architect unless authorised by the contract, has no implied power to order extras (see Cooper v. Langdon (1841) 9 M. and W. 60), and his powers in that behalf are strictly limited by the contract. The clause above set out gives the architect power to "vary," but it limits the meaning of the word "vary" to the ordering of extras and omissions. Did the word "vary" stand alone, there is authority for saying that it would entitle the architect to substitute one material for another of which it was the virtual equivalent. In Stevens v. Mewes and Davis (Court of Appeal, June 7, 1910, Emden's Building Contracts (1911) Supplement p. 9), a contract had been entered into to sink a well to a depth of many feet. A lift pump having been found impracticable for doing the work, the engineers who had power to vary the contract work, decided to instal an air lift pump, and the question was whether they had power to do so. Lord Justice Moulton said:—

"Now I quite agree that 'vary' means vary so as not to destroy the scheme of the whole thing, but in my opinion to substitute for one well-known piece of machinery an equivalent, equally well known, doing exactly the same work, certainly a different one, just in the same way as if you had ordered a Dean pump, and then you made up your mind subsequently to use another pump. In my opinion I am satisfied that this is within the language of the word vary."

Although the point is not altogether clear, the phrase "vary by way of extra," would seem to justify the architect in ordering a more expensive material to be used in place of cheaper material actually specified. It was held in an old case (R. v. Peto, I.Y. and J. 37) that power to order extras or omissions did not enable the architect to vary the work in the manner described by Lord Justice Moulton; but it is submitted that, when the R.I.B.A. Form is used a larger power is vested in the architect, who may vary by way of extra or omission.

This meaning of the word extra is borne out by the case of Russell v. Sada Bandeira (1862) 32 L.J.C.P. 68). In this case it was decided that an extra to a contract for works was something not specified in or fairly comprised within the contract, and applicable to the carrying out of its design, e.g., if a deal door be specified and a subsequent order be given to substitute one of teak, the difference in value is an extra.

Under well-known principles of the law of agency the architect may render himself personally liable for the value of extra work executed by the builder if he expressly or impliedly, without having such power, represents to the builder that he has the authority of the employer to order such work (Randell v. Trimen, 18 C.B. 786).

In a Scotch case (Robertson v. Jarvie, 45 S.L.R. 260) a question arose as to the authority of an architect to order extras.

It appeared that the plaintiff offered to do certain work for the defendant for a lump sum. The schedule annexed to the plaintiff's estimate provided (*inter alia*) that "The work to be done . . . to the entire satisfaction of the proprietor or architect, who will be at liberty to make alterations, and to increase, lessen, or omit any part of the work. . . ."

The defendant accepted the offer, and on completion of the work the architect certified that the plaintiff was entitled to a sum which, owing to extras, exceeded the lump sum. In an action brought to recover the balance the plaintiff averred that the extra work had all been authorised by the defendant's architect, and that his certificate was final. In his defence the defendant denied that the extra work had been authorised by the architect, and said that the architect had no power at his own hand to authorise it, and that the whole work executed did not, in many respects, comply with the contract. It was held that, as the architect was not by the contract made an arbitrator, there must be an inquiry as to the question whether the additions and alterations had all been authorised by the architect. It was held, further, that, assuming that fact to be proved, the defender could not—at least, in the absence of very specific arrangements—object to the architect's final certificate, he having been allowed to act as measurer. Lord McLaren gave utterance to the following dictum:—

"I think that there can be no doubt that within the scope of his employment an architect is the proprietor's agent; and if the building contract provides that the work is to be done to the satisfaction of the architect, then any order within the scope of the contract which the architect may give is a sufficient authority to the tradesman to execute the work, because he is entitled to take the order of the agent as equivalent to the order of the principal."

It will be seen from the cases above considered that a written order for extras is necessary in nearly every case in order to make the employer liable, and it is very old law that if there is a condition that extras shall be ordered in writing, the condition must be performed.

It was laid down in Russell v. Viscount Sa Da Bandura (*supra*) that where the contract contains a stipulation that no extra work shall be paid for unless ordered in writing, the price of extra work done without a written order cannot be recovered. This is and has been the law for many years. Should it appear to operate harshly in any case, the answer to the builder who has done extra work without a written order is, "You should not have carried it out," or "You should not have signed a contract containing this clause."

The hardship may be to some extent mitigated by the architect in the performance of his other duties under the contract. His certificate may involve payment for extra work, and in Goodvear v. Mayor of Weymouth (1 H. and R. 67) it was held that where by the contract the architect was to certify the proper sum to be paid for work and extras, and his decision was to be final, it was held that his certificate that a sum was due precluded the defendant from raising the question whether there was a sufficient order in writing.

But can the written order be, in any other circumstances or in any case, dispensed with?

It is in relation to this question that the case Nott v. Cardiff Corporation is of importance.

The facts in the case were as follows:—

A contractor entered into a contract with a municipal corporation to construct a reservoir at a fixed price in accordance with a specification. The work had to be done to the satisfaction of the corporation's engineer, with such additions, alterations, and variations as might from time to time be directed by the corporation or the engineer as provided by the specification. The price was to be paid against certificates given from time to time by the engineer. By a clause in the specification it was provided that the corporation were not to become liable for the payment of any charge for additions, alterations, or deviations unless instructions for them were given in writing by the engineer. The specification also provided that in case any dispute should arise either during the progress of the works or after the determination of the contract as to the construction of the contract or as to any matter or thing arising thereunder, or as to any objection by the contractor to any certificate, finding, decision, requisition, or opinion of the engineer,



DOVECOT, SHIPTON UNDER WYCHWOOD, CLOUCESTERSHIRE.
SKETCHED BY MAURICE. B. ADAMS, FR. I. B. A.

such dispute was to be referred to the arbitrator and final decision of a single arbitrator, and either party might demand an immediate determination of the dispute.

Disputes arose during the construction of the works as to requirements by the engineer for carrying out certain portions of the work in a particular manner and with certain materials, which the contractor contended were extras for which he was entitled to be paid in addition to the contract price. The engineer refused to give written orders for this work on the ground that the work required was in accordance with the contract. The contractor carried out the work so ordered. The disputes were referred to an arbitrator, who found that the requirements of the engineer were in excess of the work and materials which the contractor had undertaken to execute and supply, and that the engineer, in deciding against the claim of the contractor did not act fairly or impartially, but had no dishonest motive. He accordingly awarded the contractor a sum in respect of such extra work. The arbitrator's decision subsequently came before the Courts, when Mr. Justice Bray held that the award of the arbitrator took the place of the order in writing of the engineer, and that the corporation were liable.

On appeal Lord Justice Pickford and Mr. Justice Neville held that the arbitrator had only power to determine the rights of the parties in accordance with the contract; that a written order was a condition precedent to any claim by the contractor for payment for extra work; that the arbitrator had no power to dispense with the performance of the condition precedent; and that therefore he had no power to award any sum for extras. They further held that the corporation were not debarred from relying upon the non-performance of the condition precedent as they were not in the circumstances parties to a prevention of its performance.

Lord Justice Bankes dissented. He held that, looking at the contracts in a reasonable and business manner, it was intended that whenever a dispute arose the arbitrator should have power to make an effective award; that "disputes" included the question as to what the contractor was entitled to be paid for the extra work; and that the arbitrator had power to award a sum for that work.

It then came about that, by a majority, the decision of the arbitrator was overruled. In effect, the contention that a dispute between the engineer and the contractor as to whether a certain thing was an extra or not was held not to be a dispute which the arbitrator has power to decide.

Lord Justice Pickford had it clearly in mind that such a result might lead to an impasse. He pointed out, however, that by a roundabout method the arbitration clause when read with certain other clauses provided means of getting over the difficulty. He said:—

"The clause clearly contemplates that some disputes may arise during the work, and provides that by the consent of the parties or by the decision of the arbitrator an immediate arbitration may be held. Disputes as to whether the method of carrying out a particular work or supplying particular materials is in accordance with the contract are essentially of this nature, and if an arbitration took place and the arbitrator held that the engineer's decision was wrong, such a decision would be inoperative. The arbitrator could not give the written order nor dispense with it, but such a decision would in practice compel the engineer either to abandon his direction to do the work or to give the written order. His only other course would be to insist on the work being done without an order and in default take the works out of the contractor's hands under clause 92 or 118."

Nothing daunted, the contractor went further. He took the case to the House of Lords, where the judgment of the Court of Appeal was reversed (Lord Sumner dissenting). Lord Finlay, in delivering his opinion, first drew attention to Clause 3 of the specification, which provides in terms that—

"No extra charges in respect of extra

work or works will be allowed unless they are clearly outside the spirit and meaning of the specification, nor unless such works shall have been ordered in writing by the engineer. All such claims shall be made when the monthly measurements are taken and clearly and accurately set out in such manner as shall be prescribed. Any instructions for the proper execution of the works, not involving extra charges."

He also referred to the arbitration clause which provided for the reference of disputes, and said that where either party desired to have a dispute settled immediately, the arbitrator might decide whether it should be heard at once. He then pointed out that disputes arose as to extras at an early stage, but the work proceeded notwithstanding, that it was not disputed before the arbitrator that the value of the work said to be "extra" was £13,000; and that, in fact the arbitrator found that work to this value was actually extra.

Referring to the arbitration clause upon which the decision of the case really turned, Lord Finlay said:—

"Its effect with regard to a dispute as to the refusal of the engineer to give an order in writing for any item as an extra is, in my opinion, this. The clause provides for any dispute on such a point being arbitrated at once, if it is decided on a preliminary arbitration that it ought so to be decided at once. If the arbitration is forthwith held, it appears to me that the award by the arbitrator that the item in dispute is an extra and therefore ought to have been ordered in writing takes the place of the order in writing. The arbitration is, an appeal from the refusal by the engineer to give such an order, and the meaning of the provision is that in that case the contractor may go on with the work relying on the interim award as putting him in the same position as if the engineer had given an order in writing. . . . The dispute was whether the item was an extra for which an order in writing should be given, and when the parties agreed that the work should be done and that the question should stand over for arbitration the effect of the contract is that the finding of the arbitrators is to take place of the order in writing which ought to have been given. Otherwise the postponed arbitration would be entirely useless."

The other learned Lords, with the exception above mentioned, agreed, so the contractor had judgment for his £13,000.

It is always dangerous to argue from the particular to the general. A decision which turns upon the construction which should be put on a clause in a particular contract can seldom be relied upon as governing any other case. But this much may be said. In a contract which provides that all extras must be ordered in writing, the refusal of the architect to grant a written order may be made the subject of an appeal to an arbitrator. Mr. Hudson in his "Building Contracts (1914)," p. 461, says that extras may be recovered for without a written order only in the following cases:—

(a) Where work in respect of which payment is claimed is outside the provisions of the contract altogether;

(b) Where, although the work is within the provisions of the contract, there is a new contract to pay without written orders;

(c) Where payment has been made for part of the extra work in circumstances which imply a contract to pay for the balance;

(d) Where the circumstances are such that it would be fraudulent on the part of the employer not to pay; and

(e) Where the provisions as to written orders have been waived.

Having regard to the decision under review it would seem that if the contractor can successfully invoke the assistance of the arbitrator, he may obtain payment for extras without written order. But he must be careful to take this step in the prescribed manner. For instance, if he is bound by a contract which contains an arbitration clause similar to that which is to be found in the form of contract approved by the Royal Institute of British Architects, he must at once give written notice of the dispute. Under that clause, however, an

arbitration to determine the dispute cannot be held (except by consent) until after the completion or alleged completion of the works. In these circumstances as the extra work claimed for may well be covered up before the time for arbitration arrives it would be very necessary to make the claim as specific as possible and to preserve ample materials from which the claim can in due time be satisfactorily proved.

I have drawn attention to the material clauses of the contract on which this case was decided in order to make it plain that it must not be regarded as an authority bearing directly on the R.I.B.A. form, where the clauses are different.

PROFESSIONAL AND TRADE SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—In a paper read on February 17, Mr. Herbert Buckman read a paper on "Factory Building Chiefly in Relation to the Worker." He dealt successively with the choice of sites, and the desirable number of stories in the building, referring to the consensus of opinion in favour of one-story buildings, and of the saw-tooth roof facing north. Raw material should be received at one end and the products at the other end of the building. There could not be too much light. Heating was usually by steam or hot water, but the ideal method was by radiant heat. Floors must be hard and impermeable. Canteens in the boundaries of sites.

THE SURVEYORS' INSTITUTION.—A memorial service to members who have fallen in the war will be held at St. Margaret's Church, Westminster, at 3.15 p.m. on Monday, March 31. All members of the institution and the friends or relatives of the fallen are invited to attend. With the cessation of the Military Service Acts candidates for the institution scholarships may again be expected to be forthcoming, and the council have, therefore, decided again to offer for competition yearly two scholarships of the value of £80 per annum and two of £50, each tenable for three years at any recognised University in the United Kingdom selected by the successful candidates; the courses of instruction also to be selected by the successful candidates, subject only to their being of such a nature as the council may approve as bearing on the profession of a surveyor. The next examination will be held in January next. Particulars may be obtained from the Secretary, 12, Great George Street, Westminster.

Our Office Table.

Mr. Kellaway (the Deputy Minister of Munitions) in a reply in the House of Commons last week informed Viscount Wolmer that the quantity of bricks required for the programme of 300,000 houses had been estimated at 5,500,000,000 to be used within the next two years. The stock of bricks now in hand amounted to about 200,000,000. Orders had been placed already for about 350,000,000 bricks, and the Government was arranging with all firms who required it to make advance payments for the output of the re-opened works.

The Tottenham District Council have decided to convene a conference representing trade unions, friendly societies, churches and chapels, and other local organisations, on Friday, February 23, at 8 p.m., when the following resolutions will be submitted to the conference for consideration:—"That this conference is strongly of the opinion that the area of Greater London (within fifteen miles of Charing Cross or thereabouts) should form a unit for housing purposes, with a view to the question of the housing of the working classes in the area concerned being dealt with in accordance with a comprehensive scheme. That, so as to secure co-ordination, the Local Government Board, in conjunction with the representatives of the local authorities concerned, should be asked to prepare housing schemes for the said area."

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AND ENGINEERING JOURNAL.

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Strand, W.C.2

OUR ILLUSTRATIONS.

Grove Place, Hampshire. Proposed enlargement. View and plan. Sir Thomas G. Jackson, Bart., R.A., Architect.
Bolton Public School Buildings Competition. First premiated design. Chorley New Road front and four other elevations: with the three plans. Mr. Charles T. Adhead, A.R.I.B.A., Architect.

Currente Calamo.

Sir George Askwith was "astonished" last week at the conclusions arrived at in the paper read at the Royal Society of Arts on "The Wage Problem in Industry," by Mr. Walter Hichens, the Chairman of the great firm of Cammell, Laird, and Co., Ltd. We are not surprised if Sir George Askwith's past performances as Grand Conciliator for the Government are to be taken as any earnest of success on his part as regulator of wages and profits! About that, of course, there may be two opinions, but there can be none about the ominous significance of Mr. Hichens' facts, or that each rise in wages leaves the workman no better off and the employer and the consumer worse! During the past four years demands for increases of wages were of almost daily occurrence, and, commonly enough, they have been coupled with a claim for reduced hours or reduced prices. Wages on the railways have been increased by about £80,000,000 during the past four years, and upon the top of that the concession of an eight-hours day will add a further £20,000,000 to the wages bill. The coal position is equally serious. In 1887 we produced 299 tons per worker at a wage cost of £52 per head. In 1914 the output per worker had fallen to 243 tons, whilst the wage cost had risen to £99. In 1918, during the great national crisis, the output shrunk still further to 224 tons per worker at a wage cost of £197. Again, the concession of a forty-seven hour week in the engineering and shipbuilding industries means an increase of 5 per cent. in the cost of the finished products. And yet, before the ink of that agreement was dry, a demand was raised for a forty-four, or even a thirty-hour, week. It is clear that whatever the solution of the problem of wages in industry may be, we shall not reach it along the present road. We are merely revolving in a vicious circle.

Things are just as bad in the building trades. They are worse in our own industry—the printing trade. The cost of printing this journal had last week increased 102½ per cent. since the war began, and yet the product is less than one-half. By this time, we suppose, the cost is at least 110 per cent. higher. The cost of

illustrations has increased 87½ per cent., notwithstanding there are fewer. The price of paper has been 300 per cent. up, and we have had to use less. It went down a farthing a pound last month! All this, of course, means that less labour has been employed, and that, ere long, unemployment will steadily increase in all trades, for employers will certainly not risk a further continuance of the losses they have sustained during the war. Mr. Hichens suggested that the demands of wage-earners in each trade and each industry could not be settled in isolation from each other, or independently of the claims of capital, but that while the organisations of employers and employed should be responsible in the first instance for negotiating all wage problems, the Government should exercise the right of reviewing all decisions from the wider standpoint of the general interest, and should regulate both the profits of capital and the wages of labour, in order that a due proportion might be observed. Governments, it is true, exist primarily in order to do justice between one section of the community and another. They have surrendered that duty in the past, so far as industry was concerned, owing to the false teachings of self-seekers. Has the result of the interference of the Government, which squandered millions in the recent past and deliberately set to work to subsidise idleness by unemployment benefit, justified expectation of any early realisation by our rulers of the perils of the abyss they are heading for?

The one-third of the electors who returned this Government to power doubtless never read the dull debates on the Supplementary Estimates, or they might perhaps have wondered last Thursday why on earth, as Sir A. Griffiths-Boscawen had to admit, the Government has agreed to give makers of dog muzzles a shilling bounty on each muzzle they make to cope with the epidemic of rabies in the West of England. Our observation has convinced us that there is no scarcity of these articles in the usual shops where they are sold, and we incline to the opinion that invention might be more usefully stimulated to produce an appendage which might avoid the pollution of the pavements by the objects which have to be complacently halted at every lamp-post by their owners, the flappers and fast women.

The idea that the surplus muzzles are to be stored in the Tower of London ready against the proclamation of a Soviet Republic here is, we are convinced, a preposterous one! While money is flung about in this fashion, there will be too many bounty-snatchers about, and too many of us waiting our chance with open mouths to grow discontented. Forty thousand pounds went the same night to a sugar-beet growing concern, but the Board of Agriculture has the security of the land for that loan, and may, of course, foreclose on the land if the money is never paid back. We should feel more hopeful that it will if it were not so evidently the financial policy of the various Departments to spend or lend money first, and then come to Parliament for sanction to do so, and if dissenting members of Parliament were not snuffed out by the lame replies of junior Ministers.

The text of the Bill establishing the Ministry of Ways and Communications, in our opinion, completely justifies Mr. Joynton-Hicks's prediction last week of trouble for the measure. Never in our time has a Minister been endowed with such powers, and the House of Commons may as well follow the Local Government Board to the tomb if Acts which have been passed by itself are to be repealed and disregarded at the pleasure of the last new autocrat. One provision, for instance, runs: "Any rates and other charges directed by the Minister shall be deemed to be reasonable and may be charged, notwithstanding any statutory provisions binding the amount of such charges or increases therein." Sir Eric Geddes supersedes the Railway and Canals Commission, and can alter rates at his discretion. Another clause authorises him to take possession of any railway or tramway, and orders the officials and servants of such undertakings to obey his behests in every respect, whether in regard to rates, wages, or running operations. The provisions of the Bill which relate to docks and harbours are in most cases provocative of fierce opposition. A meeting was held in London yesterday, which was attended by representatives of docks and harbour authorities and companies, and to-day members representing port or riverside constituencies meet at the House to discuss the new position. Another meeting not less important was also held in the House on Monday by the group which is

concerned with road transport, and which now numbers two-fifths of the House, to discuss the provisions of the Bill with regard to roads. Taken all round, the prospects of the Bill are poor.

Sir John Lavery, A.R.A., and Sir Edwin Lutyens, A.R.A., have conjointly designed a distinctive altar-piece just carried out for the side chapel of St. Patrick in St. Patrick's Church, Belfast. Last Wednesday this triptych was on view in Sir John's studio at Kensington; but without the actual setting of its actual site, of course, it is difficult to realise the ultimate effect aimed at, and particularly as a top-light in Belfast will make the whole thing look very different from its appearance on a dull winter's day in London. The subject is an apparition of the Virgin occupying the central panel, the wing to the left containing the kneeling figure of St. Patrick, and the wing to the right St. Bridget, also seen in adoration. These latter figures are depicted as Shepherds, with their sheep grazing on the banks of the Lake of Killarney, the Irish mountains appearing behind. The Virgin, fully robed, is handled adroitly in a more ethereal scheme of colour, which is impressive as a contrast to the stronger work employed for the more realistic supporting pictures. The wings are grandly painted and eminently simple in design. This emphasises their solid rich tones. St. Mary the Virgin is about 6 ft. high, a dimension which gives the scale of the composition. The rectilinear frames forming the revedos, the part for which Sir Edwin is responsible, are gilded in subdued subordination, serving as a foil to the panels, and Keltic ornament is freely employed, the top of the middle frame being cruciform, somewhat after the pattern of what was known in Victorian days as the "Oxford frame." The altar cross designed by Sir Edwin Lutyens is in copper, bronze, and marble, made to harmonise with the tall Spanish-charactered candlesticks. Between these, on the shelf above the altar, are placed a set of little red pots containing glazed chinaware flowers. The short altar is shaped and moulded in a Continental fashion, partly gilt and partly grained almost black to represent granite. Keltic lettering is used in Old Irish for the inscriptions below the pictures. The altar-piece is shaped in an apsidal manner, but we understand this has no reference to its actual backing, because old tapestry will hang flat on the church wall behind the revedos.

Where a tenant holds over after his lease or agreement has expired and pays rent quarterly or half-yearly, he becomes in law a yearly tenant. As such he must give six months' notice to quit, expiring with a current year of this new tenancy. So the question arises when did that tenancy begin? This old problem came up again in the recent case of "Croft v. W. F. Blay, Ltd." in which Astbury, J., gave a reserved judgment that will be a bombshell amongst the writers of legal text-books. The plaintiff had let the defendant premises under an agreement for

one year and one-eighth of a year—i.e., a half quarter—from November 11, 1915. This clearly expired at Christmas, 1916. The defendant held on as tenant, paying rent quarterly, so becoming a yearly tenant. Thinking as men of reason and business that the new tenancy began when the old one ended, the defendant gave six months' notice in June, 1917, to quit at Christmas 1917. The plaintiff contended that this was bad, and his counsel quoted from several text-books the writers' opinions based on cases that such a notice must be given for the anniversary of the beginning of the preceding expired term. This would mean that the operative date was November 11, and not Christmas, so that the notice should have been given at the half-quarter in May. But Astbury, J., courageously looked into these famous text-books, found they were all based on the same cases, and held that these did not support the writers' deductions. So he decided that the new yearly tenancy began when the old one ended at Christmas, and defendant's notice was valid, with costs. Thus commonsense came out victorious, and all these great legal works must be revised.

THE SCOTTISH HOUSING SCHEME COMPETITION.

Following the example of the Local Government Board in England, where a sum of £5,000 was set aside for prizes in a competition carried out under the auspices of the R.L.B.A., of which the illustrations appeared in a number of our last year's issues, the Local Government Board of Scotland recently instituted a competition on somewhat similar lines under the management of the Institute of Scottish Architects. The premiums for the most meritorious designs submitted amounted to a total of £725. To Section I. £250 was allocated; to Section II. £200; and to Section III. £265; with £210 additional, divided in premiums among the competitors as the Committee of Selection might determine, but no such premium to exceed £20.

The Committee of Assessors consisted of five members appointed by the Local Government Board, three of whom—Sir John J. Burnet (Glasgow), Mr. A. N. Paterson (Glasgow), and Mr. J. M. Dick Peddie (Edinburgh) were chosen from a list of architects submitted by the Institute of Scottish Architects, and the remaining two—Professor S. D. Adshhead (Liverpool), and Mr. James Thomson (Dundee), from among persons having special experience in town planning. Forty-one sets of the designs (selected from some 140 sent in) were exhibited during the week from February 26 to March 4, in the Royal Scottish Museum, Edinburgh.

The competition was open to any British subject, and in the first section premiums of £125, £75, and £50 were offered for the lay-out of a housing scheme on a given area with houses shown in block, accompanied with designs of four types (a), (b), (c), and (d). Type (a) was to comprise living room, scullery, and three bedrooms in two stories; type (b) living room, scullery, and three bedrooms, one of which was to be on the ground floor and suitable for use as a parlour, in two stories; type (c) living room, scullery, parlour, and three bedrooms in two stories; and type (d) two-story flats with the houses on each flat having a living room, scullery, and two or three

bedrooms with an independent entrance, and inside stairs to the upper flats.

Type (a) was required to have an internal measurement not exceeding 17 ft. between the party-walls, and an alternative design for this type with a wider frontage and through living-room for use on north frontages. Types (a), (b), and (c) were to be designed in pairs or in blocks not exceeding eight houses per block, and competitors were instructed to design one block with a "through" pend not less than 4 ft. in width, so as to provide direct access from the road to the back gardens of the intermediate houses. Type (d) was to be designed in blocks not exceeding four houses per block, while a further instruction was that the houses in each separate block were to be of the same type.

SECTION I.

The first premium of £125 in Section I. has been awarded to Miss E. D. Blacker and Mr. H. Heathman, 4, Colston Street, Tramways Centre, Bristol, for the set of plans marked No. 45. This joint production is certainly the best sent in, and it is very gratifying to find a lady occupying so prominent a position in the premium list; it is not her first appearance as a winner, for she also won the premier position in the competition promoted by the Royal Eisteddfod of Wales. Miss Blacker served four years as apprentice and six years as assistant with Messrs. Oatley and Lawrence, of Bristol, and is now in practice there in partnership with Mr. Heathman. The lay-out was for an area of land about 20 acres in extent bounded by roads, and having its major axis lying east and west. It was on a gradient rising from the north-west to the north-east corner of 15 feet, and thence to the south-east corner of 45 feet, while from the north-west corner to the south corner it graded up to 65 feet. The plan is a very skilful one, well adapted to the contours and configuration of the land; but had the actual site been known to the competitors, they would probably have made more of the fine prospect bordering the main highway. The two main 30 feet curved roads are practically on the existing surface and in this way underbuilding is saved, while the disposition of the blocks on the curved avenues would give very attractive perspectives. Some of the houses are set back behind the general line, recessed round quadrangular gardens, some set diagonally across the corners; some are combined, interspersed, and grouped so as to give an agreeable variety, while those with a north aspect are specially designed for that position. There is a children's play-centre about 1½ acres in extent, and a village green over half an acre. The open spaces just equal about one-tenth of the whole area. The only thing one might like to see done away with is the back lane, which would prove a nuisance; but, taken altogether, it is a very successful and meritorious lay-out. There are 246 houses in all, arranged in five different types, type A containing 36, type A1 (with a north frontage) 84, type B 46, type C 32, and type D 48. The sites allotted to type B are also suitable for type C. Type A consists of a block containing six two-story houses, which would probably at the present time cost an average of £600 each. The houses are 24 feet 6 inches deep by 17 feet wide inside the walls, and the cubic contents average 11,380 feet. In the end houses the stair to the upper flat is next the outer wall. The bathroom is on the ground floor, close to the back entrance, so that if anyone wants a morning plunge they must either go outside and round to the back door or pass through the living room

and scullery. The centre houses have the bathroom upstairs and the w.c. on the ground floor near the back door, which would prove a very inconvenient arrangement. The water-closet would be better in the bathroom, which should also have a fixed basin. All the fireplaces are in internal walls, and one chimney stalk serves two houses. There is a hood over the front entrance doors, and the external appearance with hipped ends to the roof is simple and satisfactory.

Type A1, for houses with a north frontage, is only 16 ft. 6 ins. deep inside the walls, but has 26 ft. 4 ins. of frontage, while the cubic contents of each is given at 11,755 ft. In this case there is no lobby at the back door, while the bathroom and w.c. are close to the front door, with the larder behind. This can scarcely be said to be a perfect arrangement. The areas of the three bedrooms upstairs are 160, 93, and 70 ft. respectively.

Type B is a twin house with an end entrance, a parlour 11 ft. by 9 ft. 6 ins., a living room of 180 square ft., and a scullery 13 ft. by 8 ft. The bathroom, with a w.c. in it, is upstairs, and the stairs in this example have windows. The total cubic contents per house is given at 12,550.

Type C is a range of four two-story houses with a central pend 4 ft. wide. The two centre houses are 32 ft. 6 ins. in front by about 20 ft. deep, while those at the ends 23 ft. 11 ins., but 7 ft. deeper. The accommodation comprises a living room, parlour, scullery, and three bedrooms. In this case the bathrooms with w.c. are all on the upper floor.

Type D is a two-story flatted villa of four houses. Each house contains a living room, two bedrooms, scullery and bathroom, has fireplaces in internal walls, and the average cubic contents is stated to be 11,190. The ground floor houses have the w.c. immediately opposite the front door, and there is no lobby at the back door to protect the worker in the scullery. A closet for a cycle or a perambulator is provided.

The construction generally is for the outer walls 11 in. hollow brick rough-casted outside and plastered inside, or, alternatively, concrete 10 ins. thick. The partitions are 3½ in. concrete blocks on the ground floor and 2 in. concrete slabs on the upper floors where not carried direct.

All the elevations are very quiet and restful in treatment, but the traditional method of using the building materials of the country has not been studied. Indeed, everything appears to be brick and harl in this competition, no doubt with a view to keep down the cost and the cubic contents. All ideals might easily be satisfied if finance did not enter the equation as a vital factor.

THE SECOND PREMIUM

of £42 has been awarded to Mr. James A. Arnott and Mr. Barnett N. H. Orphoot, 13, Young Street, Edinburgh, for the set of plans marked No. 20. In this lay-out the two main roads sub-dividing the area go east and west—one of them being crescent-shaped—while the houses are well disposed in the various areas, with play-spaces in the centre of four of the sub-divisions. There are only 214 houses obtained in this scheme as compared with 246 in the first premiated design. In the planning of the houses Type A is said to contain a cubic capacity of no less than 14,014 ft. The bathroom, with w.c., is on the ground flat near the back door.

An alternative plan is shown with three houses in the block and the bath-

room upstairs, the living room and principal bedroom having windows on both sides, so as to make it suitable for a north front.

Type B shows a group of four houses with "through" pend. The staircase is to the front, the living room to the front, and the parlour to the back. The cubic contents is stated to be 19,034.

Type C shows a double villa, with the bathroom on the ground floor. A parlour is provided with an oriel window. The cubic contents is given at 19,292, and one ought to be able to get a commodious working man's house out of that if the State will undertake to pay the bill. In an attempt to increase the size and comfort of the new houses there is a danger of wrecking the whole scheme, which has been built up with so much labour and energy.

The elevations in these various designs are all neat and attractive. The exterior walls up to the level of the ground floor window-sills are of blue metallic or red pressed brick, with harling above.

An alternative design for Type A shows a red-tiled block with steep roof, divided into three houses, the total cubic contents per house being 11,252. The entrances are to the front and all the fires in internal walls. There is no lobby at the back doors. The bathroom, with w.c., is on the upper flat. The sculleries have a rather restricted working space.

An alternative for Type B has a front parlour or bedroom on the ground floor, with two bedrooms above. The bathroom and w.c. are upstairs, the living room and principal bedrooms having windows on two fronts. The roofs are steep, pitched, and covered with Roman tiles.

An alternative for Type C shows the bathroom upstairs, and a rather unnecessary waste of space in the lobby.

A premium of £42 was also awarded to the set of drawings marked No. 88 by Mr. John A. W. Grant, 15, Cargil Terrace, Edinburgh. The lay-out plan is somewhat similar to that of the second premiated design. In Type A the scullery in the end house is only 6 ft. 3 ins. in width, with the door opening direct to the outside, which would make it rather cold for those working there. The bathroom is on the ground floor, with the larder adjacent. The centre house has a lobby at the back door, while the bathroom, being upstairs, makes as a whole a comfortable and well-arranged house. The elevations of this competitor are not so satisfactory as those of the second premiated design.

Messrs. Cullen, Lochhead and Brown, Brandon Chambers, Hamilton, were awarded a premium of £41 for the set marked No. 36. The dividing roads here are all 26 ft. wide, and the four main avenues have a central oval-shaped ornamental garden, with a shelter in the middle. The six sub-divisions have groups of houses fronting the various roads, with children's playgrounds and allotments in the centre in the east and west divisions. This competitor gives an illustrative transverse section from south to north showing the different levels of the houses between the existing and the main roads. Type A, with four houses per block, gives the cubic capacity of 11,095 for each. All the houses have the bathroom upstairs, the fireplaces are in internal walls, the porch is made larger than usual, but there is no lobby at the back door, and the scullery is rather restricted in area. A small bedroom is on the ground flat, while the other two bedrooms are upstairs. The coal cellar is outside. The external appearance cannot be said to be altogether attractive,

with the curious-shaped dormers and the gutter running across the middle of the window.

An alternative design with cube contents of 12,465 ft. is shown for houses with north frontages, the bathroom being on the ground floor, with a separate entrance from the lobby. Type B, with two houses in the block, has a parlour or bedroom on the ground floor, two bedrooms and the bathroom upstairs. The external elevation is a satisfactory treatment of pressed brick and rough-cast.

Additional premiums of £20 each were awarded to Mr. Alexander Inglis, 14, Bridge Street, Hawick; Mr. James Auston Laird, Summerlea, Kilmalcolm; and Messrs. Greig and Fairbairn, 31, York Place, Edinburgh. Four premiums of £15 each were awarded to Messrs. Muirhead and Rutherford, East Port Street, Dunfermline; Mr. A. R. Dannatt, Great Waltham, Chelmsford; Mr. C. Harold Norton, 14, Bedford Row, London, W.C.; and Mr. James D. Cairns, 63, George Street, Edinburgh.

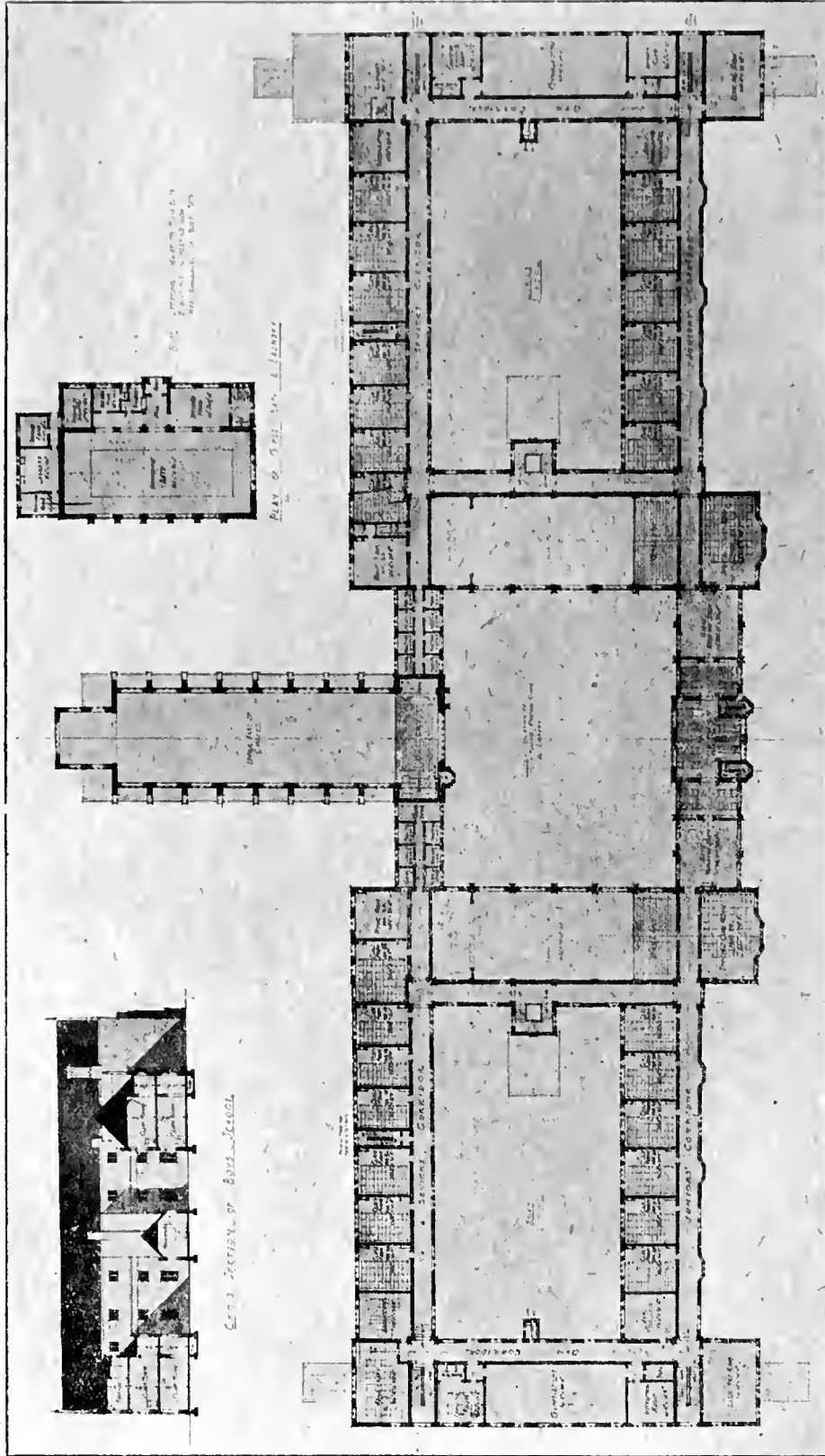
The lay-out of some of these designs has not been so successful in solving the problem set to the competitors, while the general arrangement of the various houses calls for no special comment.

SECTION II.

In this section premiums of £100, £60, and £40 were offered for the lay-out of a housing scheme of tenement houses on a given area with houses shown in block, accompanied by type designs for the tenement blocks. Two varieties were to be included and the following accommodation provided:—Type (a): Living room, scullery, and two bedrooms. Type (b): Living room, scullery, and three bedrooms. Each block was to contain two different types, and the buildings were to be restricted to three stories in height. The maximum number of houses in each block was to be twelve, but a stair was to serve six, with not more than two houses on each floor. Special consideration was to be given to the question of providing adequate washhouse accommodation, drying greens, front and back gardens, children's playgrounds, etc., and these were to be indicated on the lay-out plan.

The first premium has been awarded to Mr. John Arthur, 137, West Regent Street, Glasgow, for the set of drawings marked No. 32. The lay-out was for a tenemental development on a quadrilateral 14 acres in extent, encircled by roads. The correct and natural sub-division of the area has been taken by the formation of two roadways running north and south and setting out the blocks longitudinally in six parallel ranges, thus securing an east and west aspect for all the windows. There are 336 houses in all (or twenty-four per acre), each house having its own little garden plot at the back—about 23 ft. by 23 ft. The sub-dividing roads have ornamental plots in the centre, while shrubbery screens the view at the open ends of the tenements. If one were to be hypercritical, fault might be found with the playgrounds, as being inadequate where there are 1,680 souls in residence, that they are bounded by public roads, and consequently dangerous, and are placed where the children cannot conveniently be overlooked. The gardens between the roads would be available for old people, and the mothers with the younger children. The tenements are 28 ft. in depth over, the space between the back walls 92 ft., while the fronts towards the gardens are from 110 ft. to 140 ft. apart. Each block, separated from

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Key and Foley, Photos.
BOLTON PUBLIC SCHOOL, CHORLEY NEW ROAD, BOLTON (FIRST FLOOR PLAN).
SELECTED DESIGN.—MR. CHARLES T. ADSHEAD, A.R.I.B.A., Architect.

its neighbour by a space 10 ft. in width, contains twelve houses divided into two of six houses each by a party wall, and served by two back staircases. In these staircases the steps are in easy, straight flights, well lighted and ventilated. The houses are in half flats, one with two and one with three bedrooms, living room, and scullery. They are very well and conveniently arranged, with the central access lobbies lighted and ventilated over the lavatory screens. The living room contains 175 square ft., the principal bedroom 160, small bedroom 108, and scullery 116 ft.. All fireplaces are in internal walls. The outer walls are constructed of 14-inch hollow brick, harled externally, but having a pressed brick base 4 ft. high. Towards the end of each block the top story is in a Mansard roof, which, while pleasing in appearance, would detract from the comfort and value to some extent, without being more economical in construction, but the intermediate portion has the main wall carried up to the ceiling. On the ground flat there is a common washhouse at the ends of each range.

The elevations are simple and effective, the construction economical, the planning of the houses very good, and the lay-out excellent, with the exception stated. The large area of harling or cement on the front and back walls is not very desirable on the score of future maintenance, while there is a prejudice among some people in parts of Scotland against either lending on mortgage, or purchasing, brick-built houses. For the dwellings on the ground flat the floors are specified to be of reinforced cement and sawdust covered with $\frac{7}{8}$ -in. flooring, the sculleries being finished with granolithic. The upper floors are to have wooden joisting, with $\frac{7}{8}$ -in. flooring in the rooms and reinforced concrete and cement in the sculleries. It is stated that the roofs would be constructed of home timber, but there would be difficulty in getting sound, well-seasoned material at the present time. The contents of one-half of one of the blocks contains approximately 72,295 cubic feet, after allowing for a reasonable depth of foundation, as sites cannot always be obtained that are stable and level. Taking this at the present probable cost of 1s. per foot, a figure given lately by Dr. Cowan in connection with the proposed Dublin houses, results in a probable cost of £3,614, or £600 for each house. As eight per cent. at least would be required for reasonable interest on capital, rates, maintenance, insurance, factorage, empties, and a sinking fund, this would mean an economic rent of £289 for six houses, or £48 each. That is exclusive of the land, which would be a varying factor, but may be taken as inclusive of roads and sewers. In pre-war times these tenements could have been built at 6d. per cubic foot. In post-war times no one can prognosticate what the cost will be. One must not adventure into the region of prophecy. At present 100 per cent. increase on former prices is a reasonable expectation, considering that wages form about 75 or 80 per cent. of the total cost of a building, and that these do not appear likely to decrease. Large contracts have been recently fixed at this advance so far as regards the principal trades.

Considering these houses next from the rental point of view, one finds the total lettable floorage on three floors extending approximately to 4,680 square feet. That is for three houses, or 780 feet each on the average. The above assumed rent thus gives a rental rate of nearly 1s. 3d. per square foot, or two and a half times the rate that houses of this class were rented

for in a city like Edinburgh in pre-war times. The yearly rent, which is exclusive of rates, at 6d. on 780 feet, would amount to £19 10s. The Rent Restriction Act has fixed existing rents, and it is said it will probably be continued for some years. An owner is thus prevented from obtaining any increase, so that the rent of the new houses, which, it is said, are to be let at rates corresponding to those already existing, would probably be fixed at £20, as against the economic rent of £48. This would show a loss on each house of £28, or on 336 houses of £9,408 yearly, which loss must be contributed by the rate and tax payers. In seven years the houses fall to be valued, so as to ascertain the loss on capital. The rent obtainable at that time would be the basis of the calculation, and the smaller the rent the greater the loss. Those privileged working people who are to occupy these houses, which are tarred with the brush of charity, will be having part of their rent paid by poorer people who cannot afford a £20 house, as well as by the middle and upper classes. They will be compelled to contribute by rates or by taxes, or indirectly, and at the same time be compelled to pay an economic rent themselves, as no houses will be built for them. One Local Authority where a penny rate brings in only £120 proposes to build several hundred houses, and it looks as if it would be a good investment for them. The miners who are to occupy the houses will probably take in lodgers and sit rent free. In this design the frontage of each range containing twelve houses extends to 151 feet 6 inches. In pre-war times tenemental ground in the city where the drawings are being exhibited would have fetched about 8s. per lineal foot, giving a total feuduity of £60 for twenty-four houses, or £2 10s. each. Applying that rate to only twelve houses would make the ground rent £5 each. But houses of £20 could not well carry a ground rent of more than one-tenth, or £2. On 336 houses the total would be £672, which gives a rate of £48 per acre per annum. In many districts of the city tenemental ground was leased at £150 to £200 per acre per annum and frequently much higher where there were shops or intensive development. Centrally situated land, therefore, for housing must in future depreciate. It may possess a higher value for commercial and industrial purposes because the value of land is generally fixed by what you can take out of it. It will appreciate on the outskirts of a city, but there must be cheap and rapid traction or the workers will not migrate there. Those who have paid high prices for small central areas of ground will lose heavily. Where land is held by trusts who devote the revenue to educational or charitable purposes it will not be so serious, as they will be contributing to the welfare of the people in another way. Owners of accommodation and agricultural land will be advantaged sooner than they would otherwise have been. Many people can design, and debate, and write, and speak about ideal houses for artisans, the accommodation, conveniences, and labour-saving appliances which they ought to possess, but the economic proposition is never really faced. It must be some time or another, and then there will be a day of reckoning. A matter of such stupendous importance to the nation must be founded on some basic principle, and that principle in the end must be the economic rent. The housing problem would, however, soon cease to be a problem if the Government would only pluck up courage to admit past mistakes, restore public confidence and relieve property of some of its many unjust and onerous burdens.

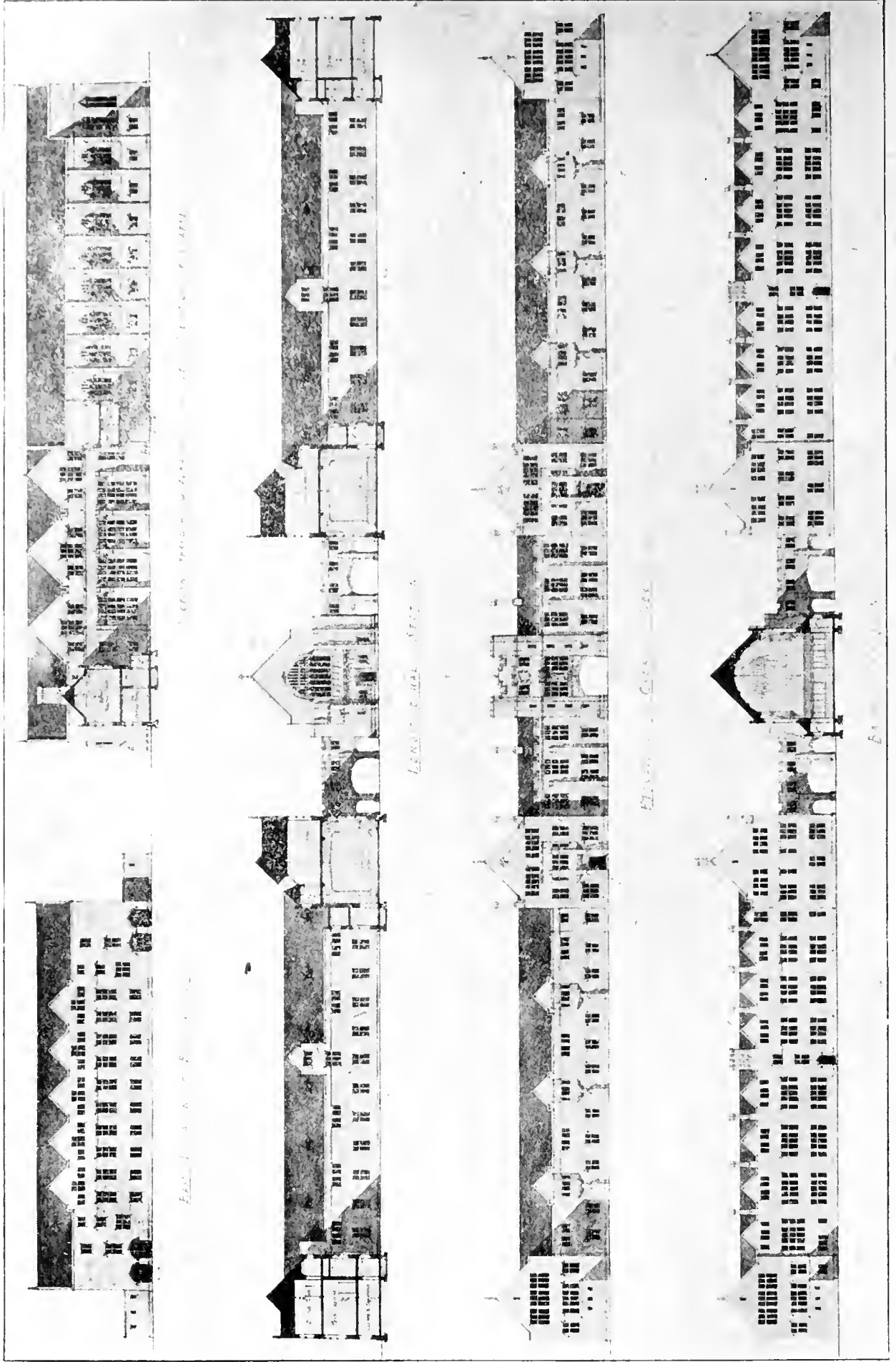
The housing question was created by unjust legislation which cast a blight on house production. The conditions were intensified by war and have now been brought to a crisis by Labour. The politicians have played with it on a principle of expediency.

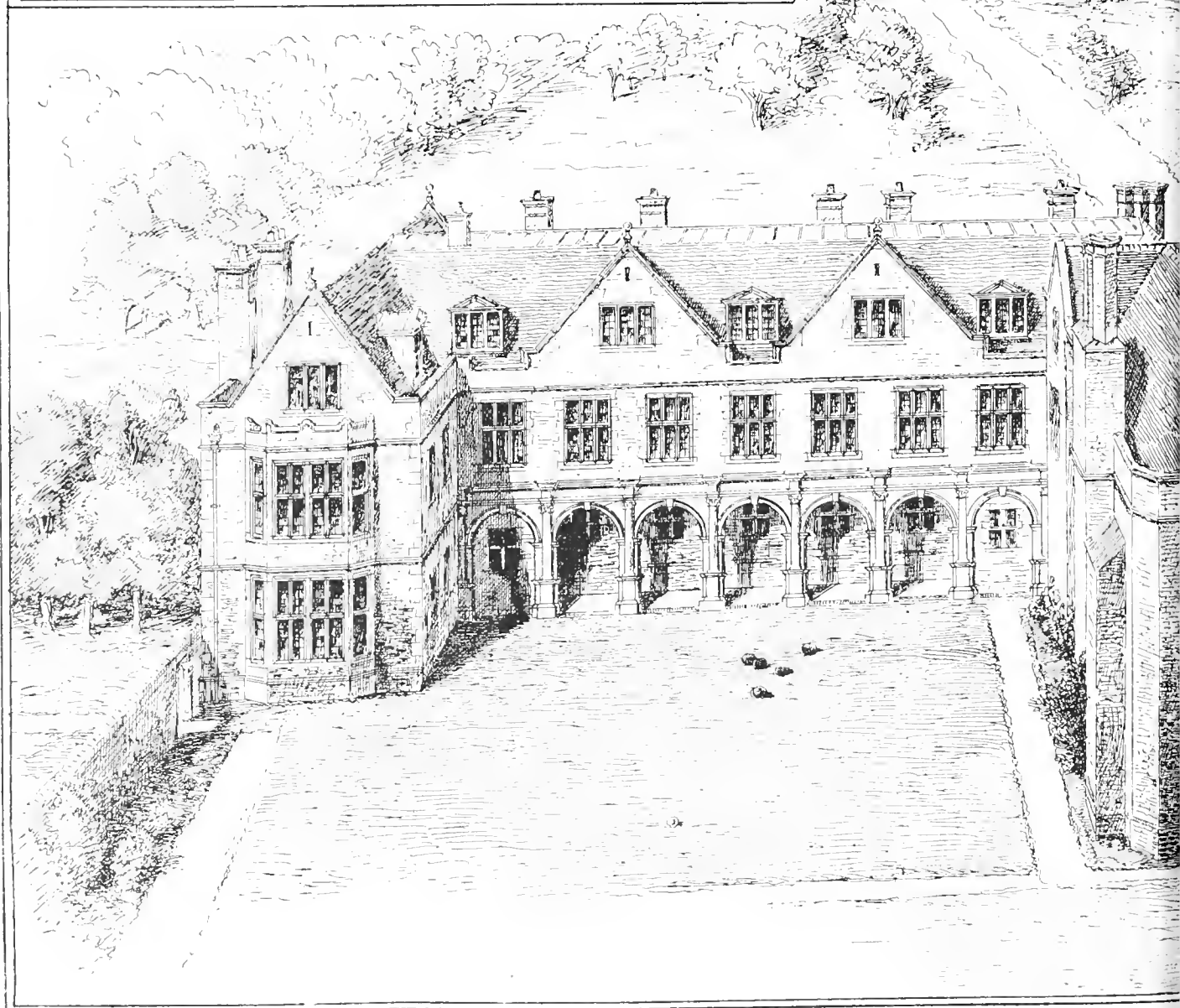
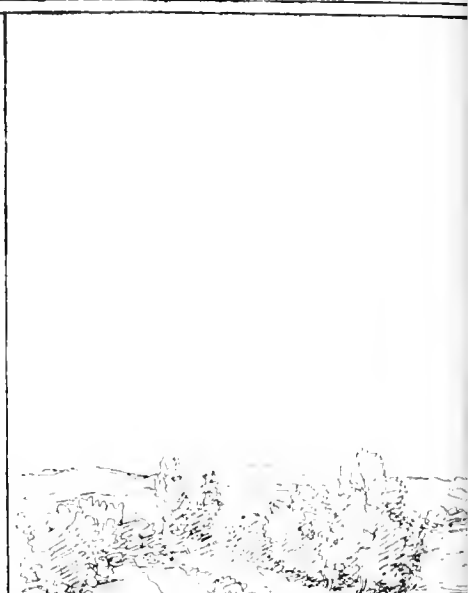
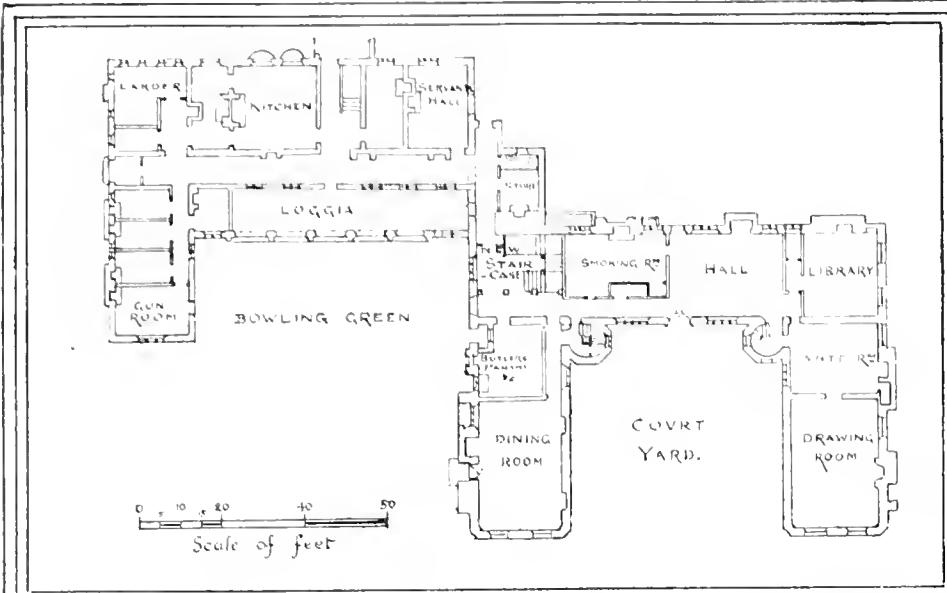
The second premium of £60 has been awarded to Mr. Wallace Marchmont, 41, Ovington Street, Cadogan Square, London, S.W. This lay-out sub-divides the ground by a central avenue going north and south, with the result of obtaining 330 houses, while in an alternative scheme with a cross street going east and west the result is 348 houses. The tenements are ranged round each of the divisions, the central area in each block being reserved for playgrounds, tennis court and bowling green. In the alternative scheme the corners of each division are devoted to children's playgrounds. Twelve of the houses in each block are served by two well-lighted staircases in a projecting portion of the back wall. The lobbies are well lighted and ventilated, and nearly all fireplaces are in internal walls. On one side of the stair are the houses with three bedrooms, while on the other are those with two bedrooms. The outer walls are rubble stone on the ground floor with a brick internal lining, and on the upper floors are of brick rough-casted. On the drawings it is noted that if the cost of timber is prohibitive for the roof it could be constructed of concrete. The external elevation is very plain and the roof of the projecting portions with a width of thirty-two feet is in a single span with one tie. The arrangement for storing coal appears to be a wooden bunker set in a recess off the lobby, which would prove both dirty and inconvenient. The "larders" are narrow presses about eighteen inches wide constructed in the corners of the scullery. The drawings are not so well got up as in the first premiated design.

Mr. James Carruthers, 209, St. Vincent Street, Glasgow, has been awarded the third prize of £40. The site in this case is divided by two roads running north and south, with a distance of 75 ft. between the buildings. In the centre spaces are three children's playgrounds, each about 100 ft. by 80 ft.; the remainder of the internal areas being divided into drying greens and gardens. The total number of houses is 354. There are two types of tenement. In one type the staircase is to the rear and well lighted. The coal cellar enters off the lobby, which is not good, while the scullery does not enter directly off the living-room but from an inner lobby, which is both inconvenient and wasteful. The elevations are very uninteresting. Type B has the staircases to the front, with oriel windows in a number of the living rooms. The walls are of the inevitable hollow brick and harl.

An additional premium of £15 was awarded to Mr. G. Washington Browne, 1, Randolph Cliff, Edinburgh. The ground is arranged so as to form a large playground in the centre of the area, with the tenements disposed around three access streets. In some of the blocks the upper storey is in a Mansard roof, the houses being thus prejudicially affected owing to the changes of temperature and consequently less valuable, while most of the lobbies are dark. The staircase is to the front, and the arrangement of the houses is somewhat similar to what has been the custom in the past in a tenementally-built city like Edinburgh. In another type of straight block the frontage occupied is 120 ft. and the breadth 32 ft. There is no direct light to the lobbies; the coal cellars enter from the lobbies.

(Continued on page 151.)





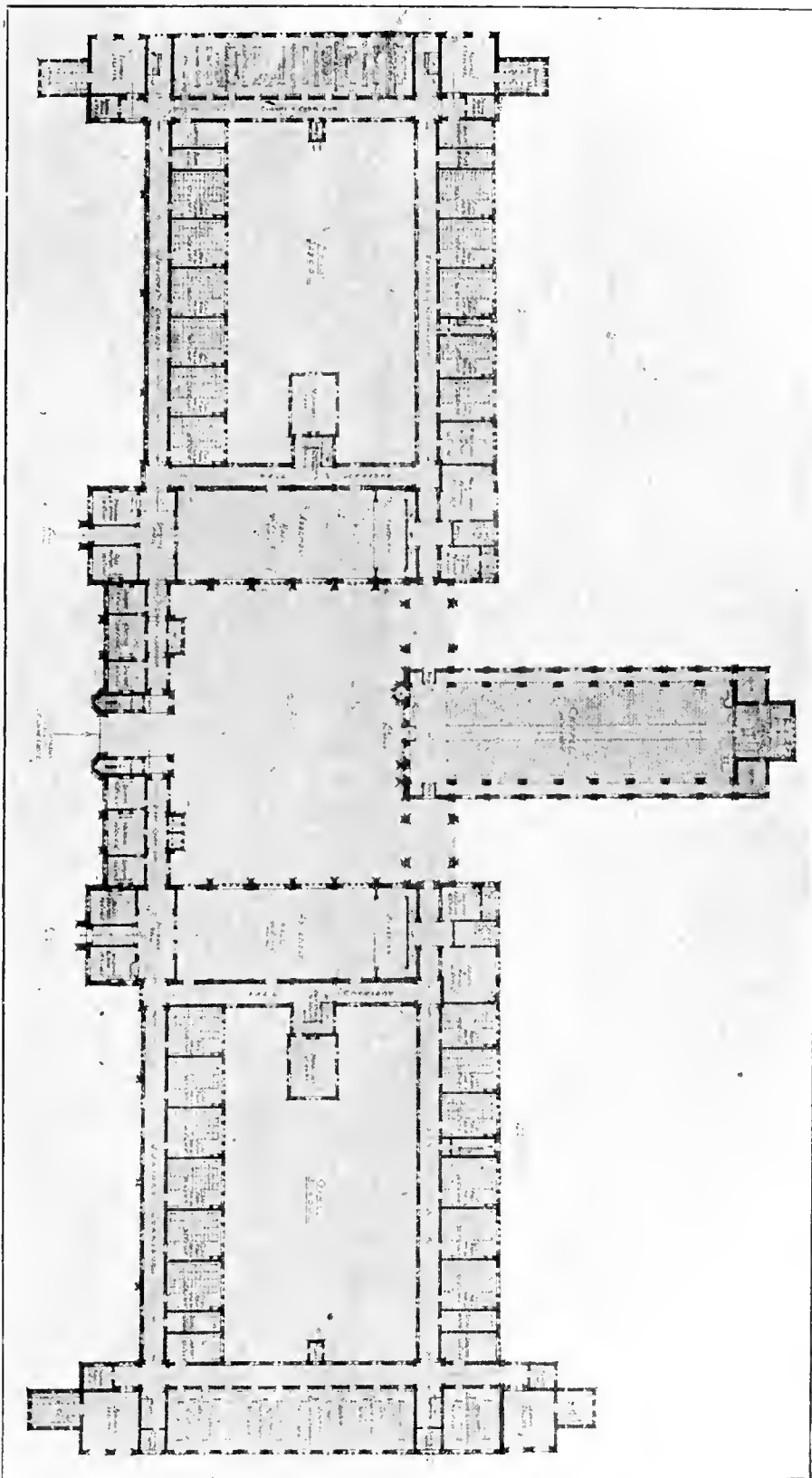
GROVE PLACE, HANTS: PROPOSED ENLARGEMENT

GROVE PLACE HANTS.

*Thos. G. Jackson R.A.
Mar. 12, 1918.*







Kay and Poling, Photos.

BOLTON PUBLIC SCHOOL, CHORLEY NEW ROAD, BOLTON (GROUND PLAN).
SELECTED DESIGN—MR CHARLES T. ADSHED, A.R.I.B.A., Architect.

(Continued from page 147.)

which is not very good, while a large number of the fireplaces are in the outer walls, thus dissipating heat that ought to be conserved. The staircases are in straight flights and well lighted. The main walls are of stone ashlar channelled on the ground flat and having pilasters above, stone cornices, and pediments which would make the question of cost still more alarming than it will be. The corner blocks have a more elaborate elevation with oriel windows, ornamental doors, balconies and balustrades, and altogether too ambitious for this class of house. In these tenements the planning is rather complicated for cheap construction, and many of the apartments are badly shaped, but some of the difficulties are cleverly overcome.

Messrs. Stewart and Paterson, 16, Blythswood Square, Glasgow, have been awarded a prize of £15. The mistake in this lay-out is that the subdividing roads, go east and west instead of north and south, with the result that a large number of the houses have a sunless and cold northern aspect. The centre of the ground is an elongated hexagon in shape and utilised for a children's play-centre and recreation area. This subdivides the remaining space into four areas, around which the houses are grouped. In type A the tenements have staircases to the rear. Internally the lobbies are dark. The outer walls are of harled brick rough-cast outside and without strapping and lath. The elevations are treated with crow-stepped gables and angle bays, giving them a Scottish tang. An alternative scheme is shown for two-story tenements.

A prize of £10 has been awarded to Mr. John A. W. Grant, 15, Cargil Terrace, Edinburgh. The lay-out here is arranged with two roadways from the north, branching into one central road. The houses are arranged in blocks facing the various streets, with children's playgrounds and gardens in the centre and at the south-east and south-west corners. The tenements have well-lighted staircases to the rear, and are 128 ft. 6 ins. long by 28 ft. wide. The lobbies in this case would also be dark. The living rooms have oriel windows on the two lower stories, while most of the fireplaces are in internal walls. The elevations are simple and effective. The construction proposed is again hollow brick rough-cast externally. The flooring is stated to be of concrete with hollow reinforced tubes if wood is unobtainable. The arrangement of the houses is fairly good. A wash-house and receptacle for ash-bins is placed at the end of each block. Mr. A. G. Paton, 44, Apsley Street, Partick, Glasgow, was also awarded a prize of £10. This lay-out has one transverse and two longitudinal streets with large open spaces in the centre area to be used for children's play and recreation grounds. The total number of houses is only 312 in this case. The tenements are 129 ft. 6 ins. in length and 27 and 28 ft. in breadth. The staircases are to the back and well lighted, but the dark lobbies are objectionable, while the living rooms appear to have a superfluity of light. The elevations have rusticated corners and are rather costly for workmen's houses.

Mr. W. W. Mitchell, Cheshunt, Herts, has also been awarded a prize of £10. This lay-out shows a sub-division by two streets running east and west and is not a success. The elevations have a slight Italian Renaissance flavour, are of stone and much too elaborate for the type of house, the entrance door having consoles supporting pediments, and the upper story what is called a "flower-box guard" of wrought iron all the way round the

building. The roofs are flat with a sloping-shaped roof indicated as an alternative. The stairs are to the back and well lighted. Each group of six houses is linked by two connecting bedrooms, thus separating the blocks by a space 20 ft. in width.

Messrs. Hutton and Taylor, 212, Bath Street, Glasgow, have also been awarded a prize of £10. The sub-division in this case is by four access roads 30 ft. wide from the east and west, leading into a road going all round the central area. In this area are the children's playgrounds. In the planning of the tenements the staircase is placed in a projection from the back wall at each end, with a communicating balcony to the second house, so that everyone going to that house must pass several windows of the adjoining one. This balcony would overshadow the windows below and considerably obstruct the light and sunshine; indeed, existing houses of this type have been condemned by the medical officer in Edinburgh for this reason. The front living-rooms have oriel windows, and the walls on the ground floor and on a deep frieze are faced with pressed brick, having ordinary brick rough-cast between. The appearance is simple and inexpensive. None of the other designs in this section call for any special notice.

SECTION-III.

In this section £40 and £25 were offered for the design of a cottage of one story containing living room, scullery, and two bedrooms. The first premium has been awarded to Mr. John Arthur, 137, West Regent Street, Glasgow, for the sheet marked No. 31. This cottage occupies no less than 52 ft. of frontage, is constructed with 12 in. thick hollow brick walls, and contains a living room, scullery, and two bedrooms, all set in line, with the bathroom, 6 ft. by 5 ft., in a projection at the front porch. The cubic contents is given at 12,710 ft. An alternative method suggested for the outer walls is 15 in. rubble, 3 in. space, and 2 in. breeze concrete lining blocks. The fireplaces are in internal walls. The living room has windows on both sides, and contains 200 square ft., the principal bedroom 122 ft., and the smaller bedroom 112 ft. The scullery has an area of 110 ft., with direct access from the outside. Externally, the appearance is very simple, with small, many-paned windows, a single span roof covered with tiles, and terminated by gables, the slope being continued down over the bathroom and porch projection—an unpretentious and commodious cottage, but in these times a dear one. A house all on one level economises labour, but it is questionable if bedrooms on the ground floor are altogether to be desired—many people rightly object to them.

The second prize of £25 has been awarded to Messrs. Cullen, Lochhead, and Brown, Brandon Chambers, Hamilton, for the set marked No. 38. This is a double cottage, each house having a cubic capacity of 13,872 ft. The bathroom here is opposite the front door; the fireplaces, except in the living room, are in internal walls, while the appearance, with the twin front gables and hipped ends to the roof, is pleasing and very satisfactory. The alternative design for a north front contains 12,448 cubic ft. A defect is having the scullery boiler set against the end wall of the larder. Externally, the base, corners, and round the doors are finished in pressed brick, with harling between.

A premium of £10 was awarded to Messrs. Stewart and Paterson, 16, Blythswood Square, Glasgow, for the set marked No. 33. In this plan the fires are all in the outside walls, and the bathroom is

directly opposite the front door. The walls are proposed of local stone, with an inside brick lining; the roof covered with slates, and having black tile ridges.

Another prize of £10 was awarded to Mr. James A. Arnott and Mr. Burnett N. H. Orphoot, 13, Young Street, Edinburgh, for drawings marked No. 20. This is a red-tiled cottage, containing 15,876 cubic ft., with all the fires gathered into one central stalk. Space seems to be wasted in the roof. The bathroom is to the front, near the entrance door. The arrangement of the offices is satisfactory. The house forms a square 31 ft. by 31 ft. An alternative plan with a cube of 16,473 has the fireplaces all in the outside walls. The bathroom is to the back, and the living room to the front. These designs, containing such a large cubic capacity, are big and expensive "cottages."

In No. 25, by Mr. G. C. Campbell, an oriel window has been introduced into the front bedroom; the bathroom enters off a lobby leading from the living room, which is not good, and is wasteful. The fireplaces are all in inside walls, and gathered into one centre stalk. In No. 88, by Mr. Grant, the walls are proposed to be of 6 in. hollow concrete blocks, with 2½ breeze concrete partitions and steel casement windows. The w.c., as in many of the designs, is placed right opposite the front door.

There are no outstanding features in any of the other designs in this section.

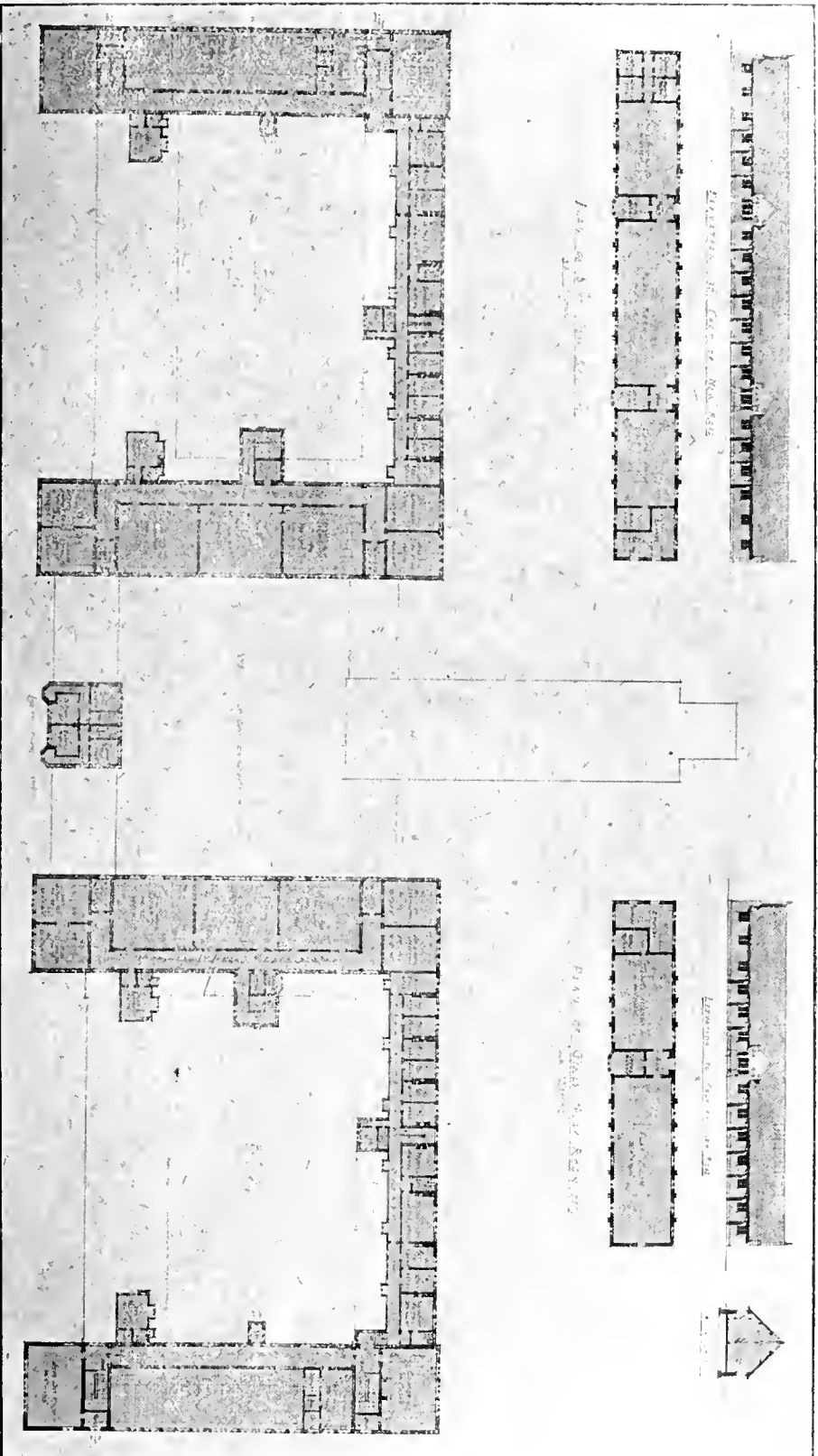
THE A.A. EXHIBITION OF DRAWINGS, SKETCHES, ETC.

At 35, Bedford Square an exhibition of drawings, etchings, and sketches is now on view by the Architectural Association in aid of the funds of that society. All the exhibits are on sale, and no ticket of admission is required. The assembly is compactly displayed in the secretary's room on the ground floor, and it includes a pair of Chinese old pots, some blue and white jars or vases, and a bronze equestrian statuette of great merit by Mr. Gilbert Bayes, somewhat on the lines of his war statue which graced the quadrangle of the Royal Academy last summer.

Sir Ernest George, R.A., has contributed a water-colour of good size and characteristic charm, showing "The Bridge of Prague," with the cupola of a classic church in the distance and a group of conventual buildings with an adjacent campanile-like tower to the right, picturesquely dominating the skyline. Mr. Frank Brangwyn, A.R.A., is represented by one of his large and decoratively-handled etchings illustrating the apse of a Romanesque church, impinging upon which is a semi-ruined lean-to, with some figures adroitly managed as a foil to the severe sculptured carvings of the sanctuary seen in the highlight of the picture. "The Land of Castles" (No. 1) is a pastel scene showing rock-crowned strongholds commanding the valley beyond where a city is set. This ideal composition by Mr. L. Richmond is delineated broadly, realising a harmony of yellows and browns, greens and blues. Mr. F. W. Carter hangs near the last a striking sepia view of a quaintly twisting street of overhanging houses in Alsace. This in contrast to the delicate water-colour of a lantern tower behind a colonnaded classic façade, called "A Street Scene in Tours," by Mr. Walter Millard. Unlike them all is the war charcoal record supplied by Mr. P. D. Hepworth. The remnants of a wooded landscape form a setting for the howitzer gun next against the clouds above turmoil and desolation.

Mr. A. B. Yeates generously offers some of his graceful work, and we specially

THE BUILDING NEWS, MARCH 5, 1919.



Key and Foley, Photos.
BOLTON PUBLIC SCHOOL, CHORLEY NEW ROAD, BOLTON (SECOND FLOOR PLAN).
SELECTED DESIGN.—Mr. CHARLES T. ADSHED, A.R.I.B.A., Architect.

noted the crisp water-colour of the Gate-way (No. 20) of Kensington Palace. In this connection we may name Nos. 76 and 77, by Mr. A. E. Rickards, representing Corfe Castle, Dorset. The first is delightfully broad and rich in colour, yet quiet in tone. Church Street, Bradford-on-Avon, is shown by Mr. Harold Falkner in black and white. Some old stone houses, backed by a broadly spreading over reaching the highway, furnish the subject. No. 81 is a pencil interior of a big timbered barn of admirable merit, by the same hand. No. 79, over the chimney-piece in a place of honour, is a water-colour by Mr. Robert Atkinson, sketched in Bedford Square under the trees 'midst the shadows on a summer's day, with peeps of the old Georgian houses, presumably those where the A.A. headquarters are. Some Normandy architectural sketches form a set by Mr. R. M. Roe. Witham Hospital, York, an etching by Mr. C. J. Tait, though quite small, is perhaps his best. It is an agreeable study of the old picturesque entry. His view of the stone houses on the west side of Lincoln's Inn Fields, shown almost in outline, includes the demolished archway which led to Drury Lane and Sardinia Street. Nos. 89 and 90 are a pair of first-rate etchings in Florence and Westminster, by Mr. W. M. Keesey. Messrs. G. G. Clarke and G. Vey contribute several pencil sketches of buildings, and Mr. Horace Field gives an etching by Hannay of a queer old wharf with some boats capably fine. The exhibition closes on Saturday next, the 8th inst.

Our Illustrations.

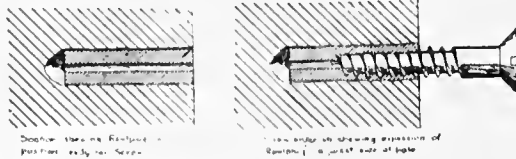
GROVE PLACE, NURSING, HANTS.

This interesting old house, for long the property of the Dean and Chapter of Windsor, and now that of Major Oswald Magniac, stands about five miles from Southampton. Its history is rather obscure, but it was probably built by James Pagett, who held the leasehold, and died in 1604. His arms appear in the plaster work of the long gallery at the top of the house, and elsewhere. The house is built of a sober red brick, and forms three sides of a court, with an octagon turret in each of the inner angles. Each turret contains a winding stair of massive oak, and the western of the two has the singular feature for a house of the date, of a lift contrived in the small well-hole of the staircase. The apparatus and cage un-luckily have disappeared. Many of the rooms are handsomely panelled, and decorated with plaster work in ceilings, friezes, and chimney pieces. The additional wing designed by Sir T. G. Jackson, R.A., is so contrived as to leave the old house intact, while providing the additional accommodation that is required in a building which touches the other part only at one angle. Here a new staircase is placed to give a more convenient access to the whole structure than is afforded by the picturesque but somewhat awkward turret stairs in the angles of the court.

SELECTED DESIGN FOR BOLTON PUBLIC SCHOOL, CHORLEY NEW ROAD, BOLTON.

There were forty-eight competitors. The style specified by the conditions was restricted to Elizabethan or Tudor architecture handled in a "striking and imposing manner." Runcorn stone was specified for the facings. The price had to be proportionate to the required accommodation, but no precise limit otherwise was imposed save that the scheme must be so arranged that the building could be erected in sections, and the competitors

had to show which parts of their design could be built and furnished for £50,000. The two schools to accommodate 1,000 pupils, equally divided between boys and girls. The chapel to seat 1,000 and to be readily accessible from both schools. The assembly rooms to be for 500 scholars each. Dining halls in either case for 200. Boys to have twenty-five classrooms, girls twenty-six, besides two lecture-rooms for either sex. Science departments for ninety-five boys and for fifty girls. Each school to be furnished with an art department for fifty. A housecraft department for seventy-five girls and a handicraft de-



partment for fifty boys, and likewise a big library common to both schools, and gymnasium. The present swimming bath on the north of site to serve for the boys and a new one had to be provided for the girls. This summary supplies the main provisions, but in addition the usual provisions of cloakrooms, living-rooms for porter, etc. Assembly-room for girl guides with commandant's office forms a new feature for schools also. Flower-rooms, music-rooms, staffrooms, matron's living-rooms, stores necessarily are included, besides a vacuum cleaning plant. The system of heating is to be hot water. Ample lavatory accommodation is made a feature of the scheme. These particulars furnish the most concise information to enable the reader to follow the scheme of the chosen design of which we give all three of the plans and five elevations. The architect is Mr. Charles T. Adshad, A.R.I.B.A., of Manchester. Messrs. Bradshaw, Gass, and A. J. Hope, of Bolton, were the assessors. Two hundred and fifty guineas was given to the design placed first. Lord Leverhulme, the promoter, and the trustees reserved the right to select six designs for a final competition should the assessors advise such a contest; but that has been decided unnecessary, and Mr. Adshad has been appointed architect of the new school buildings.

PROFESSIONAL AND TRADE SOCIETIES.

LONDON AND MIDDLESEX ARCHEOLOGICAL SOCIETY.—Sir Edward Brabrook presided at the annual meeting of the London and Middlesex Archaeological Society, held at the Bishopsgate Institute last Wednesday. In moving the adoption of the report he said that if the movement in favour of war memorials was not guided on true archaeological principles some very objectionable structures might be put up. Even Sir William Hope, while protesting against the erection of a shame eleventh century chapel in the rear of Norwich Cathedral, suggested a sham thirteenth century building. Both, said Sir Edward, were objectionable. It was not a wise policy to produce sham representations of what might have existed in previous years. If only we had architects who were competent to devise it, we should build a memorial in the twentieth century style, the only one that would be appropriate. And it should be a peace, and not a war, memorial, expressive of the sentiments of the present time, and not of the circumstances of the war. At the close of the meeting Mr. Walter Godfrey gave a lantern lecture on "The Strand in the Seventeenth Century: its River Front."

It is proposed to erect in the grounds of Limehouse Parish Church a memorial to the men of the parish who have fallen in the war. A cross or a crucifix is suggested.

"RAWLPLUGS" FOR SCREWS.

The "Rawlplug" is one of those simple inventions which will save more time and labour and money than many more pretentious devices about which much noise has been made, but which have failed to answer expectation.

Everyone knows the difficulty of driving a screw into a plaster wall and permanently fixing it there. Even skilled workmen fail, and the amateur seldom succeeds in doing more than make a big hole in the plaster which defies all attempts at reparation. The "Rawlplug," which is made of stiffened fibres, not only renders the job easy, but will plug marble, tiles, stone, and metal, and with

equal facility and success. After the hole is made push or gently tap in the "Rawlplug." It is essential that the plug shall fit the hole. For soft plasters use a bullet pointed bit, and for hard plasters, brick, stone, slate, marble, etc., use a drill or a drill pointed jumping bit. It is convenient and economical to use the "Rawlplug" special tool, which takes either bullet or drill pointed bits and makes a hole of the correct size. When fixing thin articles on hard substances, it is advisable to use wood screws threaded up to the head and so avoid loss of grip and probable bursting of the hole at the face. It is advantageous slightly to countersink the hole in the plug, by pushing the end of the bullet pointed bit into it, so as to form a guide for the point of the screw, especially when fixing thick blocks. "Rawlplugs" are invaluable for lining or bushing slip threaded holes in metal, porcelain, wood, etc., and very useful for holding carpet pins in stone and such like floors. "Rawlplugs" are made in various lengths and sizes, and samples and full particulars can be had of the Rawlplug Co., Lenthall Place, Gloucester Road, South Kensington, S.W. They are very cheap, and the force required to withdraw them from any material is remarkable.

A company has been formed to provide a clubhouse at Chevington at a cost of £2,000.

For the Aberdare housing scheme Mr. W. D. Jenkins, of Llandilo, has been appointed architect at a salary of £450 per annum.

As a war memorial, a convalescent home is to be provided in connection with the Bedford County Hospital, at an estimated cost of £20,000.

Mr. Alfred S. E. Ackermann has resigned his appointment with the Air Group, where he advised the Controller of National Aircraft Factories on engineering matters, and has resumed consulting practice at his old address, 25, Victoria Street, Westminster.

Brynawelon Mr. Lloyd George's Cricioeth residence, which was built about ten years ago, is now to be enlarged and much improved. The new wing will comprise additional reception rooms, bedrooms, and secretarial staff apartments. Mr. Taliesin Rees, 51, North John Street, Liverpool, is the architect, and Mr. John Humphreys (Cricioeth) the contractor.

The moneys resulting from aircraft insurance in the hands of the various insurance companies who, on behalf of the Government, effected aircraft insurance, are purely nominal, as they have been regularly paid over to the Government in monthly accounts in accordance with agreement. The excess of premium over payments, which amounts to over ten millions, has gone into the National Exchequer.

Mr. Donald Bruce, architect, whose death has taken place at Gourcock at the age of 85, was the son of a Wick farmer, and learned the practical side of the building trade in Edinburgh. Subsequently he started business as an architect in Glasgow along with Mr. Edward A. B. Hay. The firm were responsible for several prominent buildings in the city, including the premises of the Scottish Co-operative Wholesale Society in Paisley Road.

Our Office Table.

A useful hint, says the *Decorator*, was given at a recent meeting of the Paint and Varnish Society by Mr. John Wood as to the matter of blooming. He said that he had noticed in coachbuilders' shops that as soon as the varnish was set a sponge or leather was used, and he believed that this daily attention given to the varnish after it had set for a week after it was applied effectually prevented any after-blooming. He suggested also that decorators should apply the same treatment to front doors. It was important that such treatment should be applied directly the varnish was set enough to receive the leather or the sponge.

The Chief Secretary's plan for the promotion of Irish housing estimates that something like 60,000 houses at a total cost of not less than 25 millions are needed in Ireland. Mr. Macpherson's proposal is that the Treasury shall bridge the difference between economic rents and those which tenants can afford to pay, and that the local authorities shall get the money for building by loans on the open market or from the Irish banks. The promise of the Treasury's help is welcomed, but is held to be inadequate. All the newspapers insist that the loans cannot be got from the banks, but must be advanced by the Treasury. It is urged that unless this is done the possible capture of local bodies by Sinn Fein may put an end to the Government's whole policy of housing.

The result of the poll taken in the City parish of St. Catherine Coleman, Fenchurch Street, on a proposal to pull down the church and devote the proceeds of the sale of the site to building a new church in the suburbs was announced last Wednesday. Seventy-eight parishioners voted for the scheme and 27 against. It now remains for the Bishop of London to take action, and he will issue a commission of inquiry. The desire of the majority of the parishioners is to amalgamate with St. Olave, Hart Street.

"Elastic Stresses in Structures" (London: Scott, Greenwood and Son, 8, Broadway, E.C.4, 25s. net) is a translation, by Ewart S. Andrews, B.Sc., of Castigliano's "Theorem de l'Equilibre des Systemes Elastiques et ses Applications." Though forty years old, it is probably known to comparatively few of our readers, and yet it is by no means out of date. It certainly gives the most complete analysis of the theory of elasticity applied to the determination of stresses yet attempted, and should be studied by all concerned with structural theory and its application to practical design. The volume contains 376 pages, and includes 15 folding plates and 109 diagrams.

Laxton's Builders' Price Book for 1919 (London: Kelly's Directories, Ltd.) is issued once again subject to the difficulties during the past five years of fixing any semblance of prices. It was hoped that once hostilities were over, prices would be lowered, but the labour unrest and other disturbing elements prevent this, as we ourselves, who quote them from week to week, know too well. The still continued rise in the price of iron and steel looks as though all articles into which the manufacture of iron and steel enters will continue to rise in cost; on the other hand, the relaxation of the restrictions on the import of timber and the increased shipping available have already resulted in a great reduction in the price of timber. The first edition of the Price Book is sold out, and a second edition is now in the press.

The operation of Clauses 1 and 5 of the Building Bricks Control Order of April 5, 1919, which prohibit the sale or delivery of building bricks except under and in accordance with the terms of a Permit issued under the authority of the Minister of Munitions, or the purchase or taking of delivery of building bricks from any person other than the holder of such a Permit, is suspended on and after February 28, 1919, until further notice.

Such suspension shall not affect the previous operation of the said Order or the validity of any action taken thereunder or the liability to any penalty or punishment in respect of any contravention or failure to comply with the said Order prior to such suspension, or any proceeding or remedy in respect of such penalty or punishment.

An "arch of remembrance" has been unanimously decided on for erection at Acton by the War Memorial Sites Committee, who adopted the scheme proposed by the architect, Mr. Maurice B. Adams, F.R.I.B.A. The building will occupy a site adjacent to the hospital, which is to be enlarged as part of the intended memorial of the town, but the arch is to be a distinct monument, and it will furnish a mural field for the "roll of honour," consisting of over 900 names of the fallen. This will be enriched by heraldic-tinted arms and badges of the ships and regiments represented. The structure is to be entirely of stone, and will have a handsome pair of iron gates.

All will be pleased to hear that Sir John Soane's Museum, 13, Lincoln's Inn Fields, was reopened on Tuesday morning, having been closed during the war. The sandbags have been removed from the alabaster sarcophagus of Seti I. (King of Egypt about 1370 B.C.), which was discovered by Giovanni Belzoni on October 19, 1817, in the course of excavations which he was making in the monarch's tomb. From their place of safety have been brought back the twelve fine Hogarths, including the "Rake's Progress" series and a set of four other paintings illustrating "An Election." The pictures by Reynolds, Turner, Lawrence, Canaletto, and Watteau have also been rehung.

A reinforced concrete viaduct has just been completed at Malmö, Sweden, the ironwork of which consists largely of disused rails. It is 660 ft. long, and has six spans carrying a 50 ft. wide roadway with an 11 ft. wide foot-path on either side. The original design provided for a standard all-steel structure supported on granite piers. This was revised, owing to the high price of steel and iron, and the present reinforced concrete design substituted. A total quantity of 1,500 tons of metal was in this way reduced to 600 tons, of which 225 tons consists of worn-out rails. It is stated that no cracks or other defects in the concrete have come to light, owing to special precautions having been taken in the moulding.

According to the *Bruckenbau*, the production of hollow concrete bodies completely enclosed, which has hitherto only been possible within certain limits, is made easier by the new patent system of Stefan Rohm, of Munich, who proposes to enclose a block of ice of the required shape in concrete. Of course, small openings or channels would be left by means of which the thaw water could escape. In this way it is possible to produce not only small concrete bodies with hollow centres, but large ones as well. The process can also be applied to artificial stone.

We regret to announce the death of Mr. F. Parker, architect and surveyor, etc., to the Holland C.C.

The St. Pancras Borough Council is to invite plans, etc., for the erection of blocks of flats in Prince of Wales Road, to contain provision for two, three, and four room self-contained flats, to have gas, electricity, and hot water services, and common baths and washhouses.

As we have all along anticipated, it transpired in the debate in the House of Commons on Wednesday on the Bill for the constitution of a Ministry of Health, that several Government Departments are affected by this measure, and one result of the establishment of the new Ministry will be the total disappearance of the Local Government Board.

Mr. William Finch, county surveyor and bridgemaster of Cumberland, died last Saturday week from pneumonia following influenza, at the age of thirty-eight. For the past two years Mr. Finch had been engaged in superintending road-making in France, and held the rank of captain in the Royal Engineers. He was released from the Army only three weeks ago.

CHIPS.

The Warrington Education Committee has decided to build a new school in Oliver Street.

It is proposed to build a billiard hall in Corporation Road, Darlington. The architects are Blackett and Son, of Darlington.

Sir Aston Webb, president of the Royal Academy, is being consulted in reference to the form of the War Memorial to be placed in the Stock Exchange.

The Prestwich U.D.C. has decided to apply to the L.G.B. for sanction to borrow £4,334 for the purchase of the Bent Hill Estate as a site for a town hall.

The death is announced, on February 15, at 116, Chevening Road, N.W.6, and of 83, Pall Mall, S.W.1, from syncope, following pneumonia, of Mr. Edward Smith Coldwell, A.R.I.B.A., P.A.S.I., aged 32.

Deptford, Greenwich, and Lewisham are considering the question of a war memorial. A scheme which finds much favour is that each borough should build a wing for the enlargement of the Miller General Hospital for South-East London at Greenwich.

At the next ordinary general meeting of the Surveyors' Institution on Monday, March 31, commencing at 5 p.m., Mr. J. W. Hurrell (Fellow) will read a paper entitled "Building Contracts, and the Functions of the Quantity Surveyor Before and After the War."

The world's largest office buildings is the Equitable Building, New York. It comprises a floor area of 1,227,000 square feet, equalling the area of a 23-acre farm. Making a round trip in each of its sixty-one elevators would provide a seven-mile ride, and one walking its corridors would cover 5.8 miles. To build it 20,000,000 bricks were used.

The death is announced from Philadelphia of Julian Storey, the artist, aged 62. He was born at Walton-on-Thames, England, and was educated at Eton and Oxford. Later he studied portrait painting under Duvernoy in Munich and Boulanger and Le Feuvre in Paris. Among the many whose portraits he painted was King Edward VII.

A war memorial to bear the names of the men of the parish who have fallen in the war is to be erected in the City Church of St. Mary Aldermanbury. It will consist of the renovation and restoration of the church, and the designs are being prepared by Mr. W. F. Caroe, architect to the Ecclesiastical Commissioners. The scheme will cost about £3,000.

The Minister of Munitions gives notice that the Magnesite Order of January, 1917, is suspended, and it will therefore be unnecessary to obtain a permit from the Ministry in order to use magnesite or magnesite products in connection with the construction or repair of buildings, floorings, or docks, or the manufacture of any insulating or non-conducting materials.

Nottingham City Council, on Monday, decided to negotiate with Lord Middleton for the purchase of his Nottinghamshire estate, known as Wollaton Park, which is on the city boundary, and stocked with deer and cattle. The Corporation's scheme is to resell plots for ratepayers to build their own houses on at cost price, and to have spacious recreation grounds and leafy avenues. No factories or warehouses will be allowed.

Dr. John Charles Cox, LL.D., of Longton Avenue, Sydenham, has died at a nursing home at Sydenham at the age of seventy-five. Or dained in the Anglican Church in 1880, he held various livings until 1900, and in 1917 was admitted into the Roman Catholic Church. Dr. Cox was well known as an antiquary and archaeologist, and had been a Fellow of the Society of Antiquaries since 1887. A voluminous writer, he had published a large number of works, several of which have been reviewed in our pages, and had also edited the *Derbyshire Archaeological Journal*, *The Antiquary* (new series), and the *Reliquary*.

Mr. Kellaway, in reply to Mr. Arthur Samuel, said that twenty-seven cases of contractors being ineligible for contracts had been put on the Black List by the Ministry of Munitions. Five of these were cases of knowingly attempting to pass defective material, and a prosecution followed in each case. The proceedings were fully reported. The names of two contractors appeared on the list for falsification of accounts, these being attempted offences against the revenue. Colonel W. Guinness: Has not a decision been arrived at yet with regard to the publication of the lists? Mr. Kellaway: No, the whole question is under consideration. Colonel Guinness: How much longer shall we have to wait? Mr. Kellaway: I should think about a week.

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TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender: it adds to the value of the information.

NORWICH.—For two cabinets for the accommodation of the records in the monument room at the Castle Museum, for the Corporation:—
Smith and Son (accepted) .. £93 0 0

SLEETHUR (DURHAM).—For construction of sewage works at Sleethur, for the Brandon and Byshttles Urban District Council:—
Wood, T. and R. £1,215 11 6
Armstrong, Esh Winning (accepted) 864 0 0

WESTMINSTER, S.W.—For additional lavatory accommodation at Buckingham Palace Road Library, for the Westminster City Council:—
Franks and Simons £260 0 0
Burton Brothers 240 10 0
Sims, J. R. 229 10 0
Townsend and Pearson* 205 0 0
*Accepted.

WESTMINSTER, S.W.—For supplying 600 poles for use as Venetian masts, for the Works Committee of the City Council:—
Lee, J. B., and Sons, 7d. per ft. run for poles 33 ft long, 6 in. to 8 in. diameter at butt and 3 in. diameter at top, delivered at Chelsea Basin (recommended for acceptance).

WESTMINSTER, S.W.—For the provision and fixing of 80 mast sockets in Buckingham Palace Road (part), Strand (part), and Charing Cross, for the Works Committee of the City Council:—
Mowlem, John, and Co., £467 10s., subject to compliance with the city engineer's specification (recommended for acceptance).

WINCHESTER.—For supply of water-softening plant, etc., for the Town Council:—
200 gallon water-softening plant, Boby, W., and Son, £110; 24 in. diameter electrically-driven fan and set of automatic shutters, Keith, J., and Blackman Co., Ltd., £33.

As a war memorial for Cowes and East Cowes the construction of a cantilever bridge to cross the River Medina with a span of 100 ft. is suggested.

The Hull Asylums Committee has decided to apply for the necessary consent to proceed with the erection of two new blocks at Wilberly, and that the work be done by the corporation by direct administration, and not put out to contract.

LIST OF TENDERS OPEN.

COMPETITIONS.

March 11.—Suggestions and rough sketches are invited for a war memorial at Colwyn Bay. Further information of the Clerk of the Council, Colwyn Bay. Sketches to Chairman of the War Memorial Committee, Council Offices, Colwyn Bay.

March 31.—The Burial Committee of the Carlisle Corporation invite designs and estimates for a suitable memorial to be erected in the Carlisle Cemetery in memory of the men who have given their lives in the defence of the Empire and who have been buried in Carlisle cemeteries. Applications for further particulars to H. C. Marks, M.I.C.E., City Engineer and Surveyor, 36, Fisher Street, Carlisle.

April 12.—Messrs. Robert Ingham Clark and Co., West Ham Abbey, Stratford, E.15. Hundred-guinea design for Trade Mark. We gave conditions on p. 112 of our issue of February 12.

BUILDINGS.

March 7.—Erection of 206 houses on the High Wincobank estate (scheme No. 11): of 263 houses on the Norwood Hall estate (first portion); and 184 houses on the Walkley Hall estate (first portion).—For the Estates Committee of the Sheffield City Council F. E. P. Edwards, City Architect, Town Hall, Sheffield.

March 8.—Erection of a bungalow at Dinas Powis. Plans and specifications at the office of Mr. J. A. Owen, Architect, Pembroke Chambers, Barry Dock.

March 10.—Erection of a filter-house, with caretaker's cottage, and construction of settling tanks, sludge pits, foundations of mechanical filters, pipe trenches, roads, etc., at Hallgates, about two miles from Rothley station.—For the Leicester Corporation Water Department.—Drawings inspected and conditions of contract, specification, quantities, and form of tender on application to G. T. Edwards, A.M.I.C.E., Water Engineer, Waterworks Office, Bowling Green Street, Leicester. Tenders, upon the form supplied, to the Chairman of the Water Committee, Waterworks Office, Leicester.

March 10.—Work required at Victoria Mills, Batley Carr, Batley. Plans and bills of quantities at the offices of Messrs. Kirk, Sons and Ridgway, F.R.I.B.A. Tenders to the architects.

No Date.—Work required in building a picture house in Victoria Street (off Town Street), Batley Carr.—For the Collins Cinema Co.—Names to Messrs. W. Hanstock and Son, Architects, Batley.

No Date.—Erection of three detached houses at Llandough, near Cowbridge.—For Mr. S. H. Byass, of Llandough Castle. Plans and specification at the offices of Mr. F. B. Smith, M.S.A., Architect and Surveyor, Port Talbot.

No Date.—Erection of a motor garage at Needham Market. Plans and specifications at the office of Mr. D. Kerridge, Motor Engineer, Needham Market.

No Date.—Erection of a garage at Rhymney.—For Messrs. A. Buchan and Co. Names to the architects, Messrs. Kenshole and Bevan, Station Road, Bargoed.

PAINTING.

No Date.—External painting of 26, Lowther Street, and 4, Market Place, Wasdale, Cumberland. Particulars from Mr. P. S. Corbett, Estate Office, Wasdale.

SANITARY.

March 8.—Laying main sewers or drains and the formation and kerbing of streets on the site of proposed houses at Ackham Lane Corner, Newport, Middlesbrough.—For the Town Council. Plans and quantities at the office of Mr. S. E. Burgess, M.I.C.E., Borough Engineer, Municipal Buildings, Middlesbrough. Tenders to be sent to Town Clerk.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

RECEIVED—A. C. and Co.—C. of S.—C. of B.—R. J.—B. A. Co., Ltd.—G. and Co., Ltd.—J. H.—Van A. and Co.—T. M. S.—H. C. C.—E. P. A. and Co.

Col. M.—No.

D. T. A.—Very badly!

A. L. J.—Some day soon, we hope.

The Kettering Naturalists' Society have been considering the question of purchasing the Early Elizabethan building in Dryland Street, formerly used as a workhouse. Mr. J. A. Gotch, F.R.I.B.A., is preparing plans for internal reconstruction. A good number of local townspeople have lent support to the scheme.

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THE BUILDING NEWS

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OUR ILLUSTRATIONS.

Row of "Late Renaissance" Residences, Clapham Common, proposed to be pulled down to make way for Westminster New Hospital Buildings.

Strand, W.C.2

general view, detail of Retford House entrance, Entrance Gate, No. 21, "Church Buildings," and the Staircase at No. 22. Approximate date 1713-1720.

Borough of Leicester Housing Scheme. First prize design. Mr. Arthur J. Wood, A.R.I.B.A., architect. Elevations, sections, and plans, as well as general lay-out plan of the estate.

Currente Calamo.

Mr. Lloyd George's "golden returns" from the undeveloped land and increment value duties still cost as much to collect and realise as little! In a reply to Lieut.-Col. Weigall last Friday, Mr. Baldwin, the Secretary to the Treasury, stated that the amount paid in salaries to the Inland Revenue Valuation Department between January 1, 1913, and January 1, 1919, was £2,392,000. The produce of the two duties during the period in question was £336,000 for Undeveloped Land Duty and £431,000 for Increment Value Duty. It costs a good deal to beggar the builder and fleece the landowner!

We wish all success to the movement to organise a Middle Class Union, to promote which a large meeting was held last Thursday at the Cannon Street Hotel. Hitherto the middle-class man has shown little capacity for adhesion, and he has been alternately the victim of bureaucratic or Syndicalist tyranny. We are especially glad that a second resolution was passed declaring that the existing and intending legislation for housing should be extended to include the requirements of the middle classes. At the moment that should certainly stimulate the middle class man to action, if he is wisely organised and taught his power. A middle-class strike in London for a month would give the Syndicalists the opportunity of showing what they can do in the way of trade union co-operative production and distribution while the brains of the country take a much needed rest!

We thought our own Post Office authorities and the Board of Trade divided the cake for proved capacity to harass newspapers and hinder the public from obtaining legitimate information, but it seems the American Post Office takes the whole biscuit! By the new American postage-rate law, so says the *Municipal Journal* of New York, it is required to classify all the matter that appears in periodicals as either advertising or not advertising. In making this classification it has decided that the naming of the manufacturer of, or dealer in, an article is advertising. Thus, if in an editorial

describing a new building we happened to state that the lifts were made by the Waygood-Otis Co., or the stained glass by Messrs. Heaton, Butler and Bayne, and so on, we should have to pay extra postage rates on every copy of the paper. That often very useful information no doubt is reserved as a monopoly of the Post Office, as it is here in similar circumstances by the Board of Trade, as a source of soft jobs for budding Controllers.

The renewed discussion in the *Morning Post* of the demerits of dead wood has elicited a very timely letter from Mr. J. H. Kerner-Greenwood in the issue of that journal of the 26th ult., which all interested—and many architects and builders who do not seem to know it are interested—should read. It is not right, as Mr. Kerner-Greenwood points out, to blame the builder for using dead wood, because he does not know he is using it. Many builders are entirely ignorant of this inferior wood. Apart from the question of the reddish hue, there is nothing but the light weight of the wood to distinguish it from good timber. Timber merchants invariably specify on their quotations what class of goods they intend to sell, and it is customary in the trade when offering dead wood to style it "inferior." However, the word "inferior" implies not only dead wood, but cross-shaken wood, waney wood—that is, wood with one or two of the edges not squarely sawn, but having a little of the bark still left on, and it also means sappy and knotty wood. There are inferior fifths and even inferior sixths qualities of timber. Mr. Kerner-Greenwood maintains strongly—and we agree with him—that an Act of Parliament should be passed prohibiting the use of diseased or dead timber, except when the latter is cut into thin slabs of only a few feet in length, so that it cannot be used for anything else besides box making or similar work. No one would then be injured. The exporter of dead wood would still be able to sell his dead wood, and no disarrangement of commerce would result.

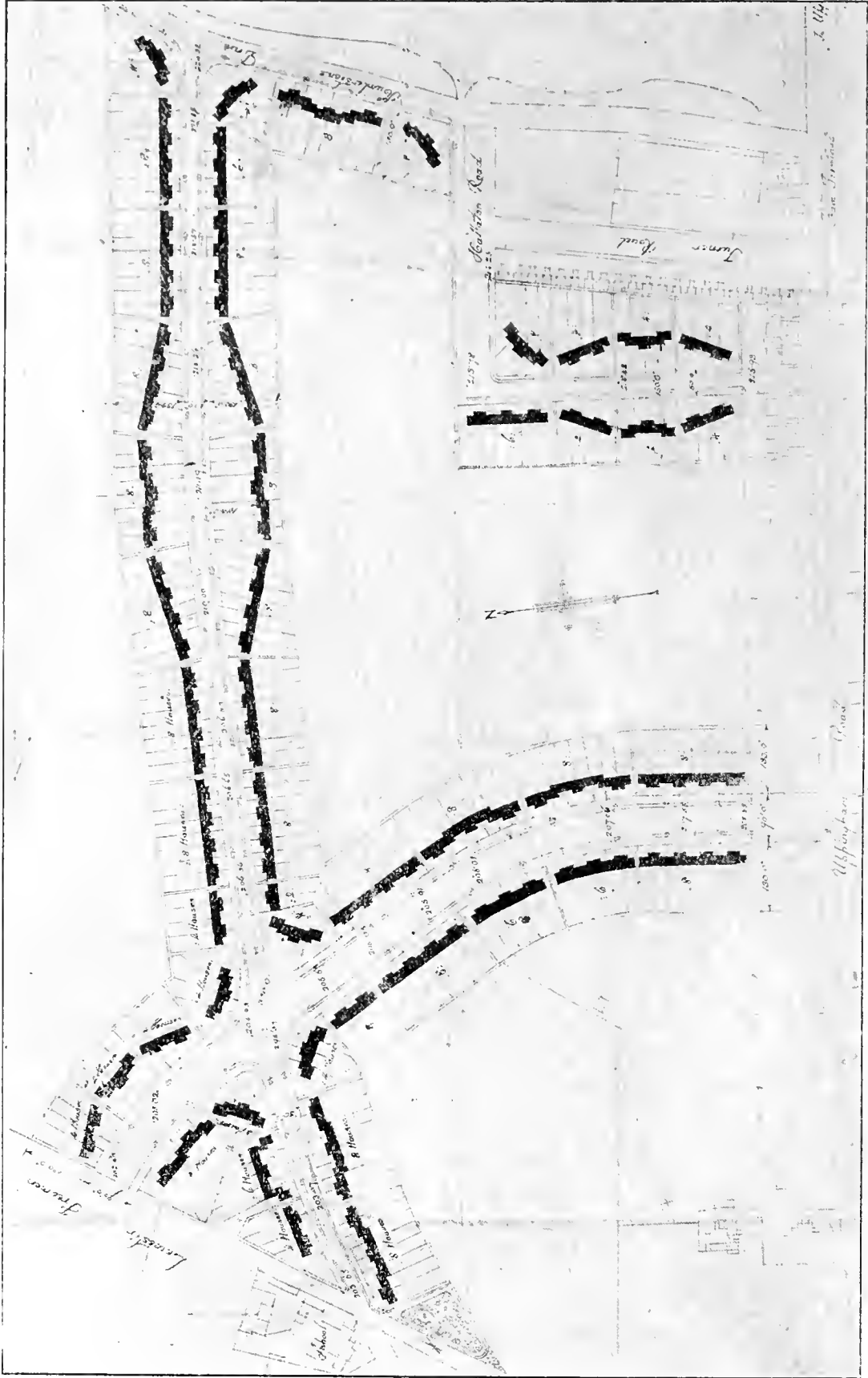
The average kitchen range is still the most wasteful and least effective fitment in the English house, but it will probably take its costly place in most of the—how many—thousand working-class dwellings the Government cannot find time to pass

the Bill for? In the *Deutsche Bauzeitung* of December 28 last an interesting account is given of the economy and effectiveness of a complete central heating system for the whole house by means of a tile stove fixed in the kitchen. The test was made in a small house with a living-room-kitchen, a sitting-room on the ground floor, and two bedrooms on the first floor. All rooms were to be heated under normal conditions. Three different arrangements were tested. A complete central heating system for the whole house by means of a tile-stove fixed in the kitchen, a single tile-stove in each of the three rooms, and an iron stove in each room. The cooking stove and the other stoves are fully described. The capital cost was, for the tile-stove, £49; for tile stoves in each room, £44; and for iron stoves in each room, £35. The external temperature varied from -10° to +14° C.; therefore the average was +2° C. (35.6° F.); the required internal temperatures were 68° F. for 14 hours daily in the living-room kitchen, 68° F. for eight hours in the sitting-room, and 60.8° F. for ten hours in the bedrooms. The annual working costs comprise the sinking fund for repayment of capital outlay, the cost of maintenance of the plant, and interest upon the capital outlay. The life of the tile-stoves was assumed as thirty years and of the iron cooking stove eight years, and iron heating stoves fifteen years. Coal was assumed as costing Mk.3 per 50 kg. (£3 per ton), and the following results were obtained:—

	Annual working costs.	Annual fuel costs.	Total.
Scheme (a) ..	Mk. 90.46	Mk. 116.94	Mk. 207.4
	(£3 10s. 6d.)	(£5 16s. 11d.)	(£10 7s. 5d.)
" (b) ..	Mk. 91.09	Mk. 127.2	Mk. 218.29
	(£3 11s. 1d.)	(£6 7s. 2d.)	(£10 18s. 3d.)
" (c) ..	Mk. 114.33	Mk. 160.84	Mk. 275.17
	(£5 14s. 4d.)	(£8 0s. 10d.)	(£13 15s. 2d.)

The author points out the much greater economy of the central tile-stove system, and incidentally mentions that the efficiency of a tile-stove may be taken as 83—92 per cent.

Last Thursday's speech of Sir Thomas Dewey, the Chairman of the Prudential Assurance Company, at its annual meeting was a fitting and eloquent prelude to the splendid record of that great corporation beside which all others of its class are comparatively insignificant. When it is remembered that the Prudential has paid war claims during the great struggle amounting to five millions



BOROUGH OF LEICESTER: HOUSING FOR THE WORKING CLASSES. SELECTED DESIGN: PLAN OF LAY-OUT,
MR. ARTHUR J. WOOD, A.R.I.B.A., ARCHITECT.

sterling, or more than one third of the total death casualties of the British Army, to 230,000 claimants, and that in the great majority of such policies the company was not bound to pay a sixpence, it is little wonder that it is regarded as the soldiers' insurance office par excellence, or that its premium income on the Ordinary Branch is double that of the preceding year, the total being £1,293,182, and that its total assets figure at £113,364,362. The Industrial Branch is also remarkable, with its increasing income of £1,104,462, or more than double the record of 1916. Such success abundantly justifies the contemplated extension of the Prudential's business to fire and general business, and with its vast army of agents it is certain that thousands of families who have hitherto covered such risks in other offices will be only too glad to make one transaction of the matter, and add such risks to their present insurance with so wonderfully well-organised and liberal an office.

Not a few are of opinion that the suggested revival of church music will embody a return to those old village orchestras which were such a feature of the services at one time. True, the *Manchester Guardian* reminds us, there were occasional jars, as in a case when the parish clerk led the orchestra with his flute and loud beatings of his foot to emphasise the time. The parson stood it as long as possible, but at last introduced a harmonium, whereupon there was war. The flute was publicly burned, and a good deal of tact was required to restore harmony—in every sense of the word. Yet there was a zest about those old performances which is wanting now, as in the old story of the Devonshire church orchestra when the clerk gave out the anthem "Who is the King of Glory!" and a voice rang through the church, "Here, Tom, hand up the rosin; us'll soon let 'em know who's the King o' Glory!"

CRACKS IN REINFORCED CONCRETE.

We have read with considerable interest a paper by Mr. H. Stanley Harris, B.Sc., A.M.I.C.E., recently read before the Royal Victorian Institute of Architects, which is given in the November issue of its *Journal of Proceedings*, in which the frequency of cracks is intelligently discussed and the means of prevention of the various causes pointed out. Generally speaking, these are due either to expansion or contraction, to the too early removal of forms, to the overloading of the structure, or to the settlement of supports. It goes without saying that ordinary care will avoid either of the first three causes named.

The last two are worth more consideration than they sometimes get; and some experiences quoted by Mr. Harris are worth regard, especially an example he gives of a large reinforced concrete structure, containing big masses of concrete exposed to the sun and weather, the reinforced concrete dome over the Melbourne Library. At the time of its construction, in 1909, it was the biggest reinforced concrete dome in the world, the inscribed diameter being 115 ft., and the circumscribed diameter 126 ft. The

detailed design of the structure was prepared to the requirements of the architects, Messrs. Bates, Peebles and Smart, and the reinforcement was sent out from England all ready for fixing in the work. In constructing the dome one complete rib on each side of the lantern ring was concreted in one day, together with part of the roof slab on each side of the dome ribs. The remainder of the roof slab and purlins was filled in some days after the completion of the main ribs, as it was found impracticable to complete the concreting in one continuous operation. The result of this was the concrete in the ribs had set fairly hard and contracted before the concrete in some of the roof slabs was poured, so that when this latter concrete set and contracted it pulled away slightly from the flanges of the ribs, in spite of steel placed in the flanges of the ribs and concreted into the roof slab, with the idea of preventing it. Some years after completion of the dome the junction of the roof slab and flange of the dome was visible, showing in a distinct crack. The appearance of these cracks, running parallel with the reinforcement in the roof slab, we are told, does not affect the stability of the dome in the slightest degree.

The dome is octagonal in plan, and consists of eight angle ribs and eight intermediate ribs restrained at the top by the lantern ring and at the base by a continuous band of steel running around the top of the brick octagon, which supports it. The dome is designed to be completely stable between the limits of the bottom ring of steel and the lantern ring, but for the sake of appearance and also to add some extra stiffening to the ribs, they are continued past the bottom tension ring across the flat annular roof, running around the dome, in the form of deep concrete abutments. The abutments have an arched opening through them, and in each arch small cracks have developed, being most marked at the angle buttresses. These cracks are not as big as cracks often seen in brick railway arches carrying main line traffic, and appear to be due to the combined effect of shrinkage and temperature, both in the concrete and in the brick octagon underneath the dome, which is 114 ft. high to the springing of the dome. As the part of the dome in which these cracks appear is merely ornamental, they have no influence on the stability of the structure. In addition to these cracks, slight cracks have appeared in the ring around the base of the dome. The concrete ring, containing the continuous steel band, is a great mass of concrete, having a cross sectional area of about 20 sq. ft. From the nature of concrete it stands to reason that some cracking must occur in such a large ring, due to contraction and temperature effects. Since the thrusts from the rib are taken by the steel band contained in the concrete ring running around the base of the dome, the small amount of contraction and temperature cracking in the concrete ring cannot affect the stability of the dome as long as the adhesion of the concrete to the steel is not impaired.

At the corner ribs the thrust is transferred to the main tension ring by means of steel stirrups, made of 3-in. square steel rib bars. It was at first thought that some of the cracking in the concrete work was due to these members not acting efficiently. It was, therefore, decided to construct a model of this part of the dome 1-6th full size and test it to destruction. The results of this test showed that not only did these members

transmit the load efficiently but actually strangled themselves in their efforts to transmit the loads. The stresses in the concrete and steel of the main members, taking into account temperature effects, were also investigated, and were found to be very low. The cracking, therefore, was found to be almost entirely due to the effects of contraction and variations of temperature, and that such cracking would occur was foreseen by the designers of the dome, and pointed out before construction was begun.

Where big concrete structures of this sort, exposed to the weather and temperature variations, are built, it is always advisable to place a false ceiling under the structure, rather than plaster the ceiling directly on to the concrete work. Breathing movements must occur in such structures, and then the ceiling is liable to crack and bits fall off, unless a false ceiling is provided.

We may add that we have lately made the acquaintance of a system of concrete construction, the principle of which is as novel as its efficiency and economy are marked, and of which more will be heard before long, when we hope to publish details.

Our Illustrations.

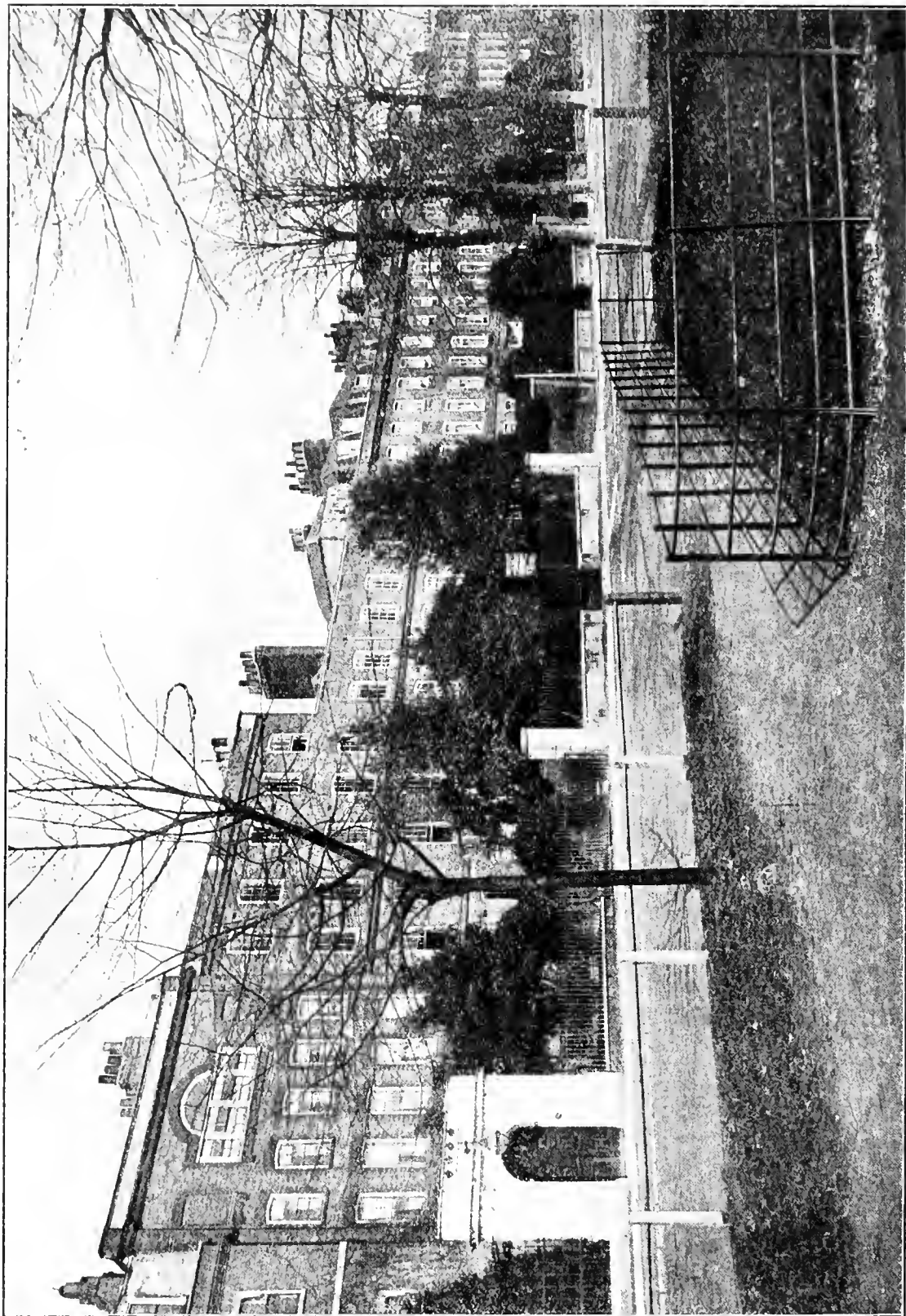
ROW OF OLD "LATE RENAISSANCE" RESIDENCES, CLAPHAM COMMON, PROPOSED TO BE PULLED DOWN TO MAKE WAY FOR WESTMINSTER HOSPITAL NEW BUILDINGS.

One of the most important metropolitan projects to be carried out in the near future is the removal of the inconvenient existing premises over against Westminster Abbey and the erection of new buildings for Westminster Hospital. The undertaking at present considered involves the proposed demolition, and for which powers have been obtained, of this particularly fine row of Georgian houses of brick standing on the north side of Clapham Common. This clearing away at Clapham is necessary, it is said, in order to obtain so suitable a site. The late Sir John Wolfe Barry, K.C., was the foremost advocate of the scheme in question, and with the purpose of placing on record good illustrations of these old buildings we obtained the sanction of Mr. W. E. Riley, F.R.I.B.A., superintending architect of the L.C.C., for our reproduction of to-day's views and details. The condemned houses are exceptionally interesting, sound in structure, and all in excellent repair. The dates assigned to the erection of this property range between 1713 and 1720, consequently their long lease of 200 years has almost expired. The houses number 10 to 27 in "Church Buildings," and occupy a space between Macaulay Road and "The Chase," opposite Holy Trinity Parish Church, Clapham Common. The architect of the new hospital is Mr. H. Percy Adams, F.R.I.B.A., who lent us these photographs. The late J. W. Grovelly, F.S.A., in his book on "Old Clapham" suggested that these houses were carried out from the designs of Sir Christopher Wren, but as the great architect was then nearly 82 years of age this is rather improbable.

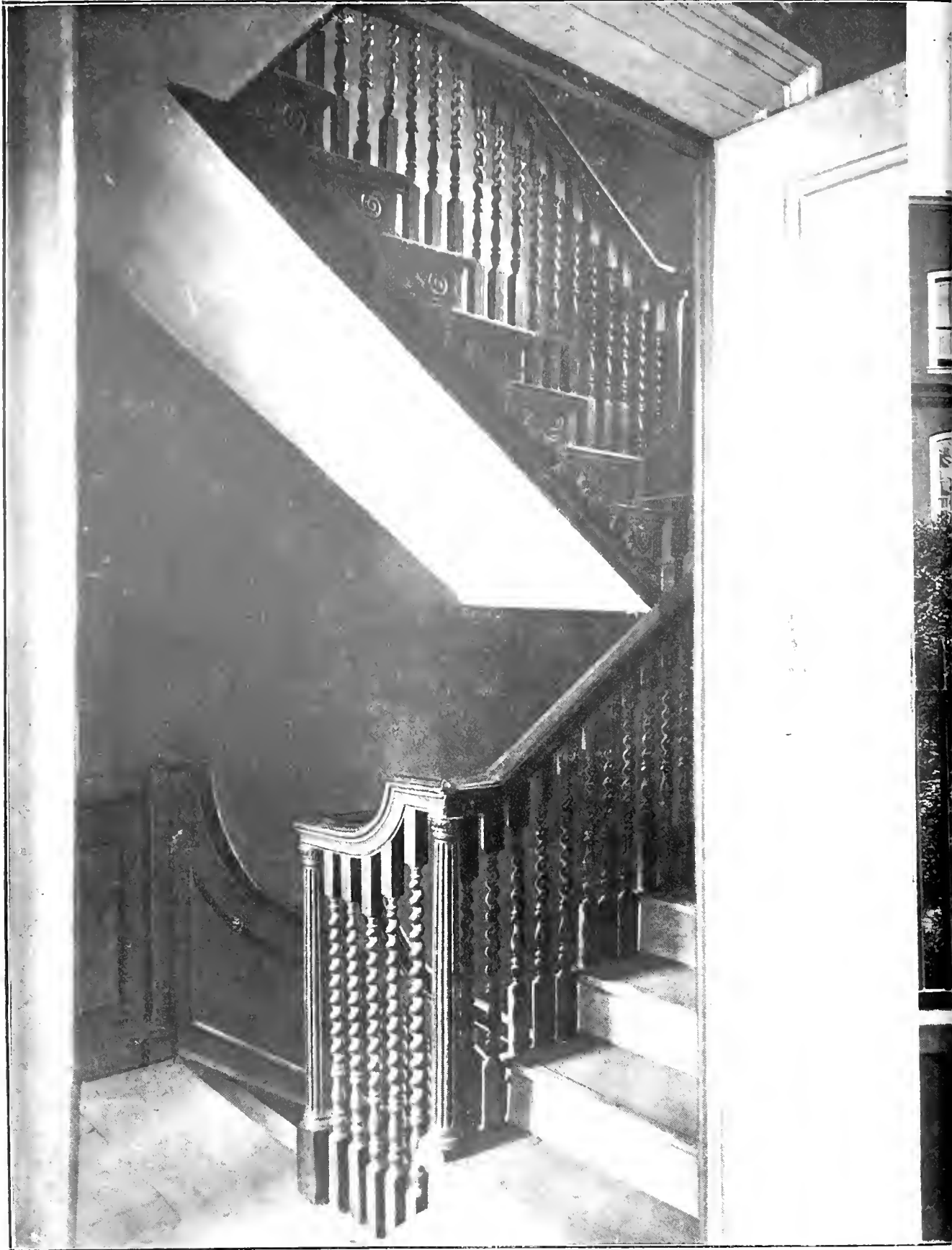
BOROUGH OF LEICESTER HOUSING SCHEME: FIRST PRIZE DESIGN.

We give a plan of the general layout which shows the houses arranged in blocks of 4, 6, and 8. Mr. Arthur J. Wood, A.R.I.B.A., of Westfield Road, Leicester, is the architect. A general building line has been adopted 15 ft. back from the

(Continued on page 168.)



ROW OF OLD "LATE RENAISSANCE" RESIDENCES NORTH SIDE OF CLAPHAM COMMON, S.W.,
PROPOSED TO BE PULLED DOWN TO FURNISH A SUITABLE SITE FOR THE
WESTMINSTER NEW HOSPITAL,



STAIRCASE, No. 22 NORTH SIDE.

TWO OF THE ROW OF OLD "LATE RENAISSANCE" RESIDENCES, ON THE
FURNISH A SUITABLE SITE FOR THE NEW BUILDING

MARCH 12, 1919.



ENTRANCE GATE, NO. 21 "CHURCH BUILDINGS."

TH SIDE OF CLAPHAM COMMON, PROPOSED TO BE PULLED DOWN TO
BE ERECTED FOR WESTMINSTER NEW HOSPITAL.





FRONT ENTRANCE, RETFORD HOUSE, CLAPHAM COMMON, S.W.,
PROPOSED TO BE PULLED DOWN TO FURNISH A SUITABLE SITE
FOR WESTMINSTER NEW HOSPITAL.

(Continued from page 161.)

frontage line, the distance between the blocks is at least 15 ft., which allows for a passage at the rear of the plots. A total of 294 houses are accommodated on the land, and each house stands on an area of a fraction more than one-twelfth of an acre. At each corner is placed a block of four houses. The other groups for economical reasons consist, as far as possible, of eight houses. Generally the roofs are to be hipped so as to continue the dominant line of the wide eaves-cornice, but at certain places the roofs over the parlour projections on the front would be brought to a pediment. The sheet of elevation sections and plans reproduced is of the type of house in which the rooms approach the square in shape, and are as far as possible free from irregularities. The entrance lobby is placed centrally, and interest is added by a trellis porch for two of the houses. The parlour would not usually be used for family life, so its size has been determined by the area given for the second bedroom. It is suggested that a pleasant feature could be secured by the addition of a simple bow window to this room. The living room is well lighted from the garden side, and is conveniently arranged in connection with the scullery. The minimum space in this room has to be traversed in passing from the entrance lobby to the scullery. Instead of the usual extravagant kitchen range it is proposed to fix an interior stove in the living room fireplace combined with oven for cooking and a hot plate. The scullery is of ample area, convenient, well lighted. Besides the sink a small gas copper (with steam pipe) and gas-cooking stove are accommodated in the scullery. The w.c. and coal-place have a covered lobby. The staircase has no winders. The half-space landing gives sufficient head room for the larder below. The rise is 7½ in., and the tread 8½ in. The bedrooms are planned so that most of the internal ground floor walls are carried up. To a part only of the bathroom and the third bedroom is it necessary to use partitions. The general height of the bedrooms is only interfered with by a short sloping ceiling along one side of each starting at a height of 7 ft. from the floor. The external walls to be built in half-brick thicknesses, with 2½ in. cavity between. Ties to be inserted 5 ft. apart. Internal walls to be half-brick thick on ground floor carried up where possible through first floor. Where partitions are necessary on first floor 2 in. patent concrete blocks to be used. All walls to rest on 9 in. thick concrete foundation. Damp-proof course of blue bricks in cement to all walls at ground level. The estimate of cost is based on the cubic contents, including external walls, back lobby and chimneys, 11,390 cubic ft.; 11,390 cubic ft. at 5d., £237 5s. per house; 294 houses at £237 5s., £69,750.

DAYLIGHT v. SUNLIGHT IN SAWTOOTH ROOF CONSTRUCTION.*

By W. S. BROWN, Assoc. Mem. A.S.M.E.

Many processes of manufacturing require for best results natural illumination, consisting of sufficient and well-diffused daylight, with, at the same time, however, the important limitation that little or no direct sunlight shall fall upon the working plane.

That is, there is a sharp distinction between daylight and sunlight and their relative desirability. The former consists of illumination by reflected and refracted light, properly designed fenestration, resulting in an evenly distributed, well-diffused light, with consequent lack of sharp shadows and contrasts. The latter, or illumination by direct sunlight, is objectionable for many reasons of varying relative importance, such as the fol-

* Presented at Annual Meeting American Society of Mechanical Engineers.

lowing: Its heating effect, especially in warm, southern climates; its colour, which has a sensation value containing a greater proportion of red rays than daylight; its actinic effect upon materials used in manufacturing processes; and the fact that it is unidirectional and of excessive intensity, resulting in glare, sharp shadows and contrasts.

Diffusion of daylight in sawtooth buildings is obtained by placing the sawteeth so that the glass or lighting area faces the northern sky, sufficient intensity being dependent, among other things, upon the size and slope of the lighting area. Evenness of distribution is procured by properly apportioning the lighting areas. The amount of direct sunlight admitted daily, the time of its admission, and its duration are evidently dependent upon three considerations, the last two of which may be varied within certain practical limits. They are: (a) The day of the year, determining as it does the sun's path across the sky; (b) the direction in which the lighting area faces as regards the points of the compass; (c) the slope of the lighting area.

For a given lighting area a variation in its slope is accompanied by a very appreciable

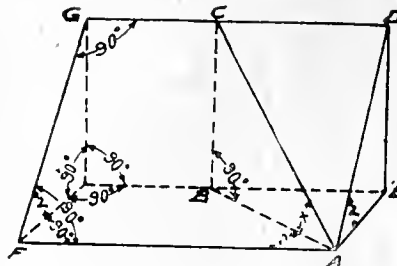


Fig. 1.

change in the amount of daylight admitted, as will be demonstrated later. That is, as the pitch of the lighting area is made steeper, the amount and duration of direct sunlight entering the building is lessened, and at the expense of the general illumination. Conversely, as the slope of the lighting area is decreased, the intensity of daylight is correspondingly increased, but there also is concurrent therewith a greater amount and duration of direct sunlight.

The question then becomes: How steep should this slope be? What is the proper balance between the two contending requirements of little sunlight and much daylight? Also at what time of day will the direct solar rays fall upon the working plane, in what locations and volume, and for how long a period?

Naturally, no general answer can be given to these questions. Each individual problem should be worked out only after careful study has been made of the particular conditions and requirements which have to be met, not excluding first cost. In the Southern States, for example, the tendency is to adopt a more nearly vertical lighting area than in the northern part of the United States or Canada on account of the greater altitude of the sun and its intense heat. Occasionally it has been found advantageous to so locate machinery as to avoid any direct sunlight during the working hours.

With a view, therefore, to clearing up such questions as these, the writer's firm, F. P. Sheldon and Son, undertook to work out, in conjunction with what empirical data they already had, a rational method of design for sawtooth-roof construction.

The subject is necessarily divided into two closely related parts, the first concerning direct sunlight, its amount, time of admission, duration and location on the working plane; the second part relating to intensity of daylight upon the working plane.

PART I.—THE ORIENTATION OF SAWTOOTH BUILDINGS AND THE SLOPE OF THE LIGHTING AREA AS RELATED TO THE REQUIREMENTS OF LEAST DIRECT SUNLIGHT.

In the practical problem of the sawtooth roof, the effective slope or vertical angle of the lighting area, on account of projecting jets, gutters, and sash rails, and the interference of roof rafters, etc., is greater than the pitch of the glass itself. This often amounts

to as much as 7° or 10°. Similarly the horizontal angle or bearing of the lighting area with respect to the sun's rays may be greater or less than the normal angle on account of projecting vertical sash bars, etc. This difference often amounts to as much as 5° or 8°.

The position of the sun at any given time depends upon the latitude of the place, time of day, and calendar date, and may be obtained from standard altitude and azimuth tables. Knowing this, the time of admission and duration of direct sunlight for any day of the year may be calculated as follows:—

In Fig. 1, let the plane determined by the three points, A, C, and D, represent the lighting-area plane, and let points A, B, and E define a plane parallel with the horizon. These two planes intersect in line A F. The acute angle, v, is then the effective slope or vertical angle of the lighting-area plane. Also, let line AB represent the horizontal direction or bearing of the sun with respect to the building at any assumed calendar date and time. That is, angle h = the difference between the sun's true bearing or azimuth and the true corrected bearing or azimuth of the lighting-area ridges, each azimuth being read easterly or westerly or westerly from north, according to whether morning or afternoon conditions are being computed.

Now pass plane ABC through AB perpendicular to plane ABE, cutting the lighting-area plane ACD in line CD. By construction this plane also contains the sun's altitude line through point A. Consequently, it is evident that if vertical angle x is greater than the altitude of the sun, a condition of total shade exists within the building at the given time. And contrariwise, if x is less than the solar altitude, the sun is in front of the plane of the lighting area and some direct sunlight is entering the building.

Now, to find x in terms of v and h (see Fig. 1),

$$\begin{aligned} &AE = ED \cot v \\ \text{and} &AB = ED \cot x \\ &AE = AB \end{aligned}$$

$$\begin{aligned} \text{and} \quad \cos(90-h) &= \frac{AB}{AE} \\ \text{Substituting in the last equation the values of AE and AB} & \\ \cos(90-h) &= \frac{\cot v}{\cot x} \end{aligned}$$

$$\text{whence,} \quad \sin h = \frac{\cot v}{\cot x}$$

$$\text{and} \quad \tan x = \sin h \tan v \dots \dots \dots (1)$$

From the above equation, exact information may be obtained as to the time of admission of direct sunlight and the number of hours of its duration. The following example illustrates the method of procedure:—

Example 1. Given, a sawtooth building located in North latitude 36°. Orientation of building is such that the azimuth of sawtooth ridges = 90° 08' E. Angle of glass = 73°. Required, to find sunlight conditions on June 10 (sun's declination 23° N.)

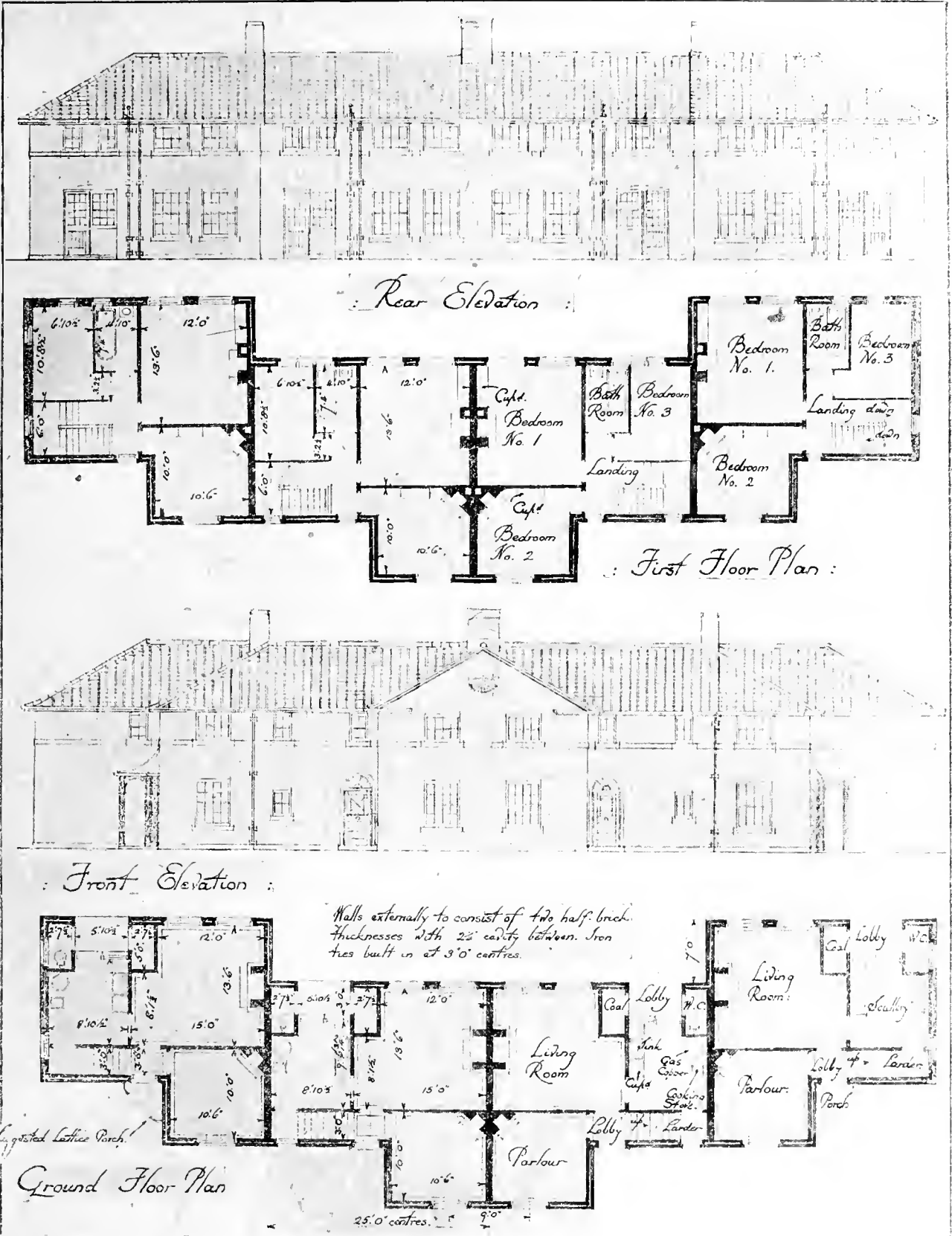
By inspection, according to azimuth tables, sunlight will enter the building from sunrise until at least 9.20 a.m. apparent time, because the sun's azimuth up to that time is less than that of the sawtooth ridges. The method now consists in finding by trial at what time the sunlight entirely disappears from the shed.

Assume 10.20 a.m., at which apparent time, according to the tables, the sun's azimuth = 114° 08' E., and its altitude 64° 46'. Now, v = 73° plus a correction for projecting jets, gutters, etc., as previously explained. (This may be found from detailed section of building, and will here be assumed as 7°.) Then v = 73° + 7° = 80°. Applying the correction as explained above:—

$$\begin{aligned} h &= 114^\circ 08' - (99^\circ 08' - 5^\circ) = 20^\circ \\ \text{Substituting in Equation (1),} & \\ \tan x &= \sin 20^\circ \tan 80^\circ \end{aligned}$$

whence $x = 62^\circ 43'$. Since x is 0° 31' greater than the solar altitude, it greater than x, a small angle of sunlight entering the shed. The above process may be repeated with a slightly larger assumed value of h, with the result that within a few minutes all direct sunlight will be found to be entirely excluded from the building.

To obtain afternoon conditions, the operation should be further continued until such



BOROUGH OF LEICESTER: HOUSING FOR THE WORKING CLASSES.
 SELECTED DESIGN.—Mr. ARTHUR J. WOOD, A.R.I.B.A., Architect.

Our Office Table.

time as sunlight is found to re-enter. In this case, instead of assuming the time and computing h , the reverse method will be pursued and, as a further short cut, it may be reasoned that since the lighting area faces slightly toward the east (that is, $N. 9^\circ 8' E.$), h at the transition period will be less than in the morning.

The westerly azimuth of the sawtooth ridge is now used for reference with the tables and equals $90^\circ 0' - 9^\circ 8' = 80^\circ 52'$. Try $h = 6^\circ$, at which time the sun's azimuth becomes $(80^\circ 52' - 5^\circ) + 6^\circ = 81^\circ 52'$, the apparent time being, from the tables 4.34 p.m., and the sun's altitude being from the tables $30^\circ 10'$. From Equation (1),

$$\tan x = \sin 6^\circ \tan 80^\circ$$

$$x = 30^\circ 41'$$

whence Since x is $0^\circ 31'$ greater than the solar altitude, it is evident that no direct sunlight is entering. However, this angular difference is very slight, and if the computations were carried on a step further sunlight would be found to come in approximately five minutes later.

In this case then, on June 10 a condition of total shade exists within the building from approximately 9.20 a.m. until 4.30 p.m., apparent time. Where the apparent time is different from standard time, the proper allowance should, of course, be made. Furthermore, an additional correction must be applied in places where the daylight saving plan is in effect.

Generally, it will be found advisable to solve a given problem for at least two sets of conditions, that of the longest day of the year (June 21, declination $23\frac{1}{2}^\circ N.$) and the average day of the year (March 21 and September 23, declination 0°).

In the example above, it will be noted that the duration of total afternoon shade is 4 hr. and 34 min., and is considerably greater than the duration of morning shade, which is only 2 hr. and 40 min. This is due to facing the lighting area slightly ($9^\circ 8'$) toward the East, and suggests quite a range of possibilities as regards orientation.

By applying the principles of descriptive geometry, the amount and location of direct sunlight at any given time may be obtained, if desired, by finding the lines in which the solar rays through the top and bottom limits of the lighting area intersect the working plane—the direction of these rays being taken from altitude and azimuth tables. It may also in this case be necessary to include the effect of side walls, division walls, etc.

For convenience, Table I is appended, giving different values for x for assumed values of h as applied in the second method of Example 1. Its use makes unnecessary any reference to trigonometrical tables, unless closer results are desired, for angles not given.

TABLE I.

SHOWING VALUES OF (X) IN TERMS OF (H) AND (V)			
h°	x for $v = 70^\circ$	x for $v = 75^\circ$	x for $v = 80^\circ$
3	8° 11'	11° 03'	13° 51'
5	13° 28'	17° 59'	22° 18'
7	18° 29'	24° 28'	29° 52'
10	25° 30'	32° 57'	39° 24'
15	35° 28'	44° 01'	50° 40'
20	43° 15'	51° 55'	61° 05'
25	49° 15'	57° 38'	63° 20'
30	53° 59'	61° 49'	66° 59'
35	57° 36'	64° 58'	69° 41'
40	60° 30'	67° 22'	71° 42'
50	64° 36'	70° 43'	74° 30'
60	67° 15'	72° 48'	76° 12'
70	68° 49'	74° 05'	77° 18'
80	69° 44'	74° 47'	77° 50'
90	70° 00'	75° 00'	78° 00'

COMPETITIONS.

IRISH HOUSING COMPETITION.—The Irish Local Government Board has entrusted the Royal Institute of Architects of Ireland with the management of a housing competition on similar lines to those here and in Scotland. Mr. W. Kaye-Parry, F.R.I.B.A., (Mr. Henry Seaver, F.R.I.A.I., and Mr. T. J. Byrne, A.R.I.B.A., are the assessors. The scheme is divided into three sections, and premiums of £100, £50, and £25 are offered for the best design of a scheme suitable for an industrial city or district in the North of Ireland. Similar prizes are offered for a similar design elsewhere in Ireland, and £50 and £25 for the best scheme for a small Irish town.

In the erection of a concrete dwelling-house in South Dewar Street, Dunfermline, Mr. Walter Wilson, Master of Works, claims to have satisfactorily solved the problem of cheap house construction. He has patented his invention, which, he points out, has secured the elucidation of a difficulty which has long been the despair of architects and builders. This was in what way concrete could be reinforced so as to secure greater strength and carrying power. Mr. Wilson has supplied the needed reinforcement by means of wire ropes or cables, or by bars and rods scientifically tensioned by screws. The blocks are made in moulds in the yard and taken to the site for erection, all shuttering being done away with. Thus reinforced, the concrete is made into blocks or slabs joined together, and forms the principal part of the building—stonework, brickwork, and woodwork being almost entirely dispensed with.

Mr. P. W. Hathaway, the Corporation architect, has been in Rochdale on short leave and expects to return to his municipal duties at the end of this month. He is to co-operate with Messrs. Abercrombie and Adshead in laying out the Spotland site of 25 acres for the municipal housing scheme, to prepare plans and specifications of the houses proposed to be built there, and to superintend the erection of the dwellings. The inclusive fee for Messrs. Abercrombie and Adshead is £4 10s. per house. On the model basis of the Local Government Board of twelve houses per acre this works out at £1,350, or rather less than the equivalent of a penny rate. A long discussion about this took place at the Council meeting last Thursday, but an amendment to refer back the appointment of Messrs. Abercrombie and Adshead was defeated by eight votes.

In accordance with the wishes of her late husband, Lady Polson is giving a memorial of the 320 Old Boys of the City of London School who have fallen in the War. The monument is to be placed in a prominent position on the grand staircase of the school, immediately under the statue of John Carpenter, the founder. The names of the "Old Citizens" who have fallen will be inscribed on panels; on each flank will be a statue representing a cadet of the City of London School; in the centre will appear the Arms of the City of London; and at the foot of the monument there will be a dedicatory inscription. The memorial has been designed by Mr. Sheriff Banister Fletcher, C.C., F.R.I.B.A., F.S.I.; while Mr. C. L. Hartwell, A.R.A., is responsible for the figures. It is expected that the unveiling will take place in May.

"Ways and Means," Mr. Ernest J. P. Benn's new sixpenny weekly review of industry, trade, commerce, and social progress, should secure the support all eager to end this era of Government waste and wanton prodigality. He has the co-operation of some good men of all opinions, and he is *taboo* by official Labour, because he is a capitalist, and by one Employers' Federation because he is a Socialist. The general public, who have had a fair taste of his ability as a lecturer on economic questions will find his new venture a welcome ally in the struggle against the bureaucracy that is swamping us into national bankruptcy, and in its first issue are some startling facts which ought to stir every honest man into action to end the orgies of the controllers, and the plundering by the profiteers.

The Royal Army Service Corps have decided on a memorial, for which not less than £50,000 will be needed. It is proposed (a) to institute philanthropic schemes for past and present members of the Corps in such localities as have contributed to its personnel; (b) to form educational projects for their benefit; (c) to erect a memorial. Donations should be sent to Sir C. R. McGrigor and Co., 59, Panton Street S.W., marked "R.A.S.C. Memorial."

The Local Government Board having been asked by Lieutenant-Colonel Malone, M.P.,

to state how many houses have been built or foundations laid under the auspices of the Government or municipal authorities since the signing of the Armistice, Major Astor, Parliamentary Secretary of the Board, has issued the following reply: "A number of housing schemes have been approved subject to tenders being obtained. The terms of financial assistance to local authorities were not finally settled until February 6, and the difficulties consequent upon the war in securing skilled labour and building materials have made building operations on any large scale impossible until quite recently. A large number of schemes are now in course of preparation by local authorities, and will be carried out as rapidly as possible."

The works foremen of Waygood-Otis, Ltd., the lift engineers, held their annual dinner at the Bedford Head Hotel, Tottenham Court, W.C., on Saturday, March 1. The company numbered about thirty, and included Mr. D. W. R. Green (managing director), Mr. E. P. Martin, Mr. C. Colebrook, Mr. C. Piggott, Mr. J. Bellamy, Mr. R. Little, Mr. J. W. Lancaster, etc., etc. An excellent menu was provided, followed by a full programme of speeches, with songs, contributed by Miss F. Collings, Mr. H. Edwards, Mr. J. Ridgout, and others. The singing of "Auld Lang Syne" brought a most enjoyable evening to a close.

Building Intelligence.

ROCHDALE.—The first sod in connection with a new extension of the new D.R. Cotton Mills, Castleton Gales, Rochdale, was cut last week by Mrs. Wharton, the daughter of the architect Mr. Sidney Stott, York Chambers, Yorkshire Street, Oldham, who gave some details of the building. The floor areas of the existing mills are about six acres in extent, while the areas of the floors of the new spinning and weaving mills will be over twenty-four acres. They would require 8,000 horse-power to drive the machinery in the new building, which with the 2,000 horse-power used in the present mills would make 10,000 horse-power. At present 750 workpeople were employed, and the new buildings would find work for 2,500 more, so they would employ altogether 3,250 workers. The biggest area in one floor of the new spinning mill was three and a quarter acres, and the new weaving shed area was five acres. To carry out the extensions would require ten million bricks, 5,400 tons of iron and steel, and 50,000 bolts. The builders are Messrs. R. and T. Howarth.

CHIPS.

The Tredegar Council have decided to purchase a new clock for the tower in The Circle at a cost of £115.

Messrs. Shearley and Lewis, architects, Cardiff, have been appointed by the Ebbw Vale Council as architects for the housing scheme on garden city lines to be undertaken at Ebbw Vale.

An ordinary meeting of the Society of Architects will be held at 23, Bedford Square, W.C.1, on Thursday, March 20, at 8 p.m., when a lantern lecture on "Architecture in South-Eastern Italy" will be given by Mr. Ambrose Poynter, Member.

The Leeds Development and Housing Committee have offered Mr. H. S. Chorley (of Messrs. Chorley and Connon) the position of advisory architect to supervise the erection of the new houses, in collaboration with the city engineer (Mr. W. T. Lancashire). The remuneration is £500 a year, and £100 a year for duties connected with arbitration proceedings. Six firms of local architects are to be asked to prepare plans.

Oscar Olsen, according to the "Politiken," January 22 last, has discovered a substitute for concrete called Slonex, which is very strong and light in weight, and can be manufactured as cheaply as wooden constructions. Its great elasticity, it is claimed, renders it especially suitable for the construction of bridges and tunnels. Mr. Olsen and Engineer Herbert Harvery, who hold the world rights of the invention, will now build large factories for its exploitation.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

Banking Room of the Trust Union, Washington, U.S.A. Messrs. Wood, Dome, and Denning, Architects.

Strand, W.C.2

The "Saxon Church," Wareham, Dorsetshire. Water-colour drawing from the Exhibition of Royal British Artists by Mr. W. Herbert Allen, R.B.A.
 New Parliament Building, Winnipeg, Manitoba. From working drawings of the building as executed. North or main elevations and the two principal plans. Mr. Frank Simon, F.R.I.B.A., Architect.

Currente Calamo.

The somewhat desultory discussion at the R.I.B.A. last Monday week is not likely to lead to anything in the way of legislation by the Government to "restore public confidence in the building industry." The prayer of every architect, as of every other man with a clear head and no axe to grind, is that Government will let us alone and mind its own business. Nor is this the time for more committees and conferences, as demanded by an amendment which was carried, embodying a lot of side issues into which the talk was switched. Architects, we trust, will soon be too busy once more to trouble themselves about "public confidence." That, as always, will be rendered in proportion to real architectural ability, and to the recognition by architects that their duty and interest should dictate a more constant and intelligent co-operation with the rest of their reputable fellow citizens when bad government of the sort we all suffer from to-day goes unchallenged by too many of us. The professional societies can do little to further this, but they can and should see to it that wholesome regulations made to bind their own members—in matters such as competitions, for instance—should not be ignored, and by some of the most eminent of those who have helped to frame them. It is labour lost to try and coerce local authorities into compliance if leading architects act as assessors in competitions based on conditions which no architect ought to compete under.

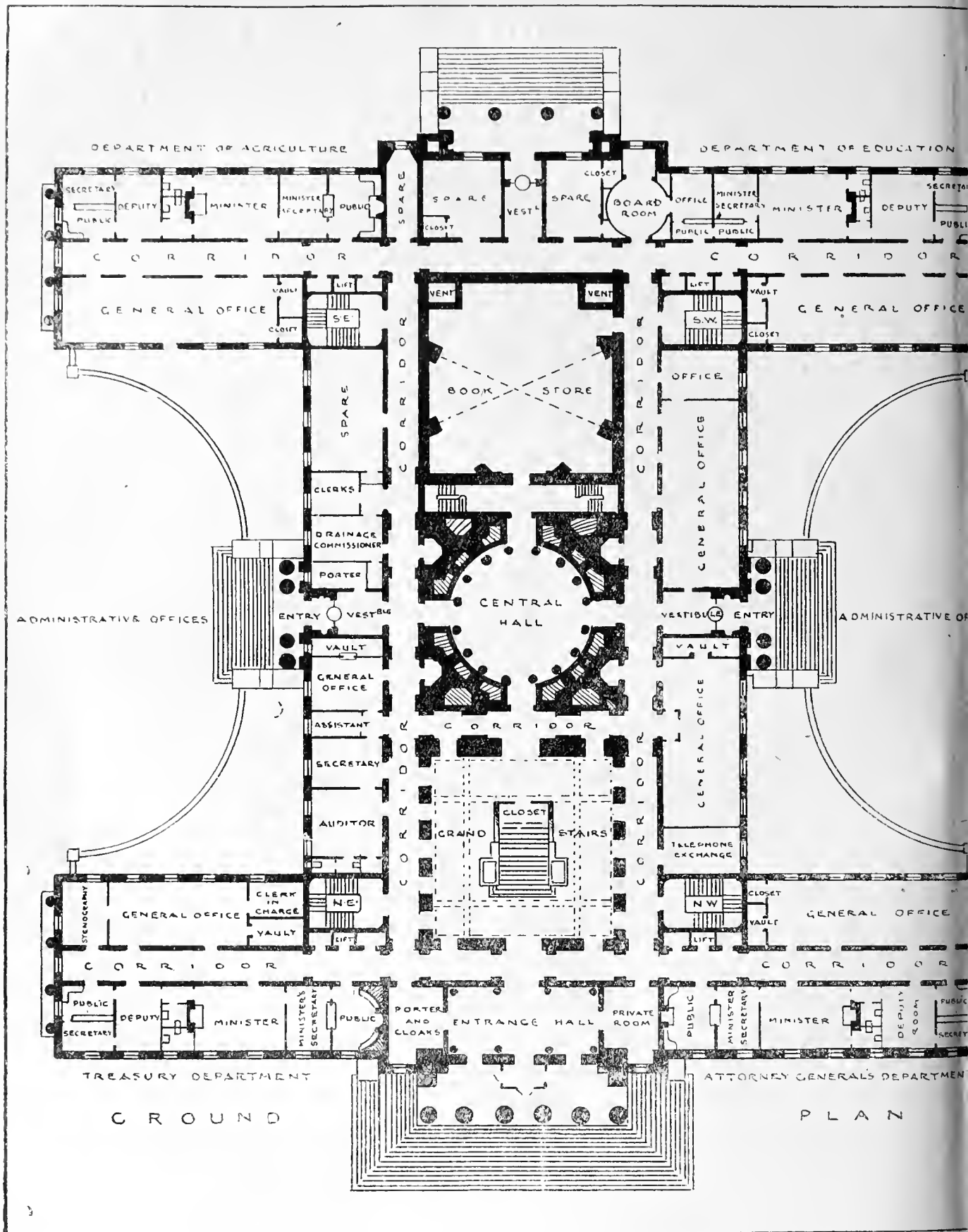
The alteration of large old residential houses into flats is undoubtedly a public benefit. For in this way more dwelling space can be provided in those overcrowded quarters of London where small houses are unobtainable. Many ground owners, finding their old-fashioned premises are unlettable, are themselves profitably making these changes or consenting to their lessees doing so. But others maintain their strict legal rights under the leases. The result of taking this line is well shown in the recent case of "Day and Others v. Eliza Waldron," heard before Mr. Justice Avory. The plaintiffs sued to recover possession of a house in Brechin Place, which is part of the "Brompton estate." These are large private dwellings of an average

rateable value of £148 a year. The defendant held under a lease which contained a covenant that no "alteration in the arrangement" of the premises should be made without the lessor's consent, and also that it should only be used as a private dwelling-house. The defendant had converted the premises into a maisonette on the ground floor and basement, and had made the floors above into three self-contained flats, and sublet all these to separate tenants. The plaintiffs now claimed possession on the ground of these breaches of covenant, and judgment was given in their favour. The lessor urged that these changes would deteriorate the property and also make him liable to actions by other adjoining lessees under similar covenants. In the present state of the law the defence had little or no chance of succeeding. But it may be possible, on grounds of public policy, for Parliament to find some way of breaking the chain of authorities which now prevent a lessee from using his premises to the best advantage.

The somewhat curious action, *Dodd and another v. Lloyd George*, decided just before we went to press last week, could, of course, only have been decided as it was by Mr. Justice Coleridge in the Probate Court, but it adds a new terror to life if it inspires many more mad people to leave embarrassing legacies to their surviving friends. The plaintiffs were the executors of a will made in March, 1915, by Mr. Isaac Shone, a civil engineer, whose name was familiar to older readers in connection with sewerage and ventilation. In July, 1918, when the testator was suffering from delusions and was not of sound testamentary mind, he signed a document purporting to be a will, under which he left "all the patent rights in the Shone juncta-in-unum system of house and town sewage, drainage, and ventilation to the Right Hon. David Lloyd George, Prime Minister of George V., King of England, etc.," and appointed the Public Trustee executor and trustee. Mr. Lloyd George had had all the plaintiffs' evidence submitted for his consideration, and, it was submitted, had quite properly not defended the action, and the Public Trustee had renounced trusteeship. After evidence had been given in support of the will of March 22, 1915, his lordship re-

marked that a great expense had been spared the estate by Mr. Lloyd George's action. He granted probate of the first will of March, 1915, with costs to the defendant, as between solicitor and client.

The Channel Tunnel, which we are glad to know is to be proceeded with as soon as possible, will cost at least twenty millions as against the pre-war estimate of sixteen millions. The money will be well spent. It may prove some consolation for the delay that the mistakes of inexperience in connection with the London Tubes will be avoided. The main features of construction will, of course, be similar. There will be two tunnels, one to carry the trains each way, and the motive power will be electric. The journey through the tunnel must, of course, seem a long one, as its length will be about thirty miles from the French to the English surface, although the actual passage under the sea will only be twenty miles. The trip will take about three-quarters of an hour at a speed of some forty miles an hour. The trains, of course, will be well illuminated, and it is said meals will be served during transit through the tunnel. It has not been forgotten that the effects of the internal noise of running through the tube, not at about fourteen miles an hour, as in London, but at forty miles an hour, have to be guarded against. Experiments have already been tried to deal with that difficulty, and it is thought that with double windows and rubber padding round all windows the noise will be reduced to comfortable moderation. There will be no difficulties in regard to ventilation, as, in addition to the usual air pumps, the trains at their travelling speed will powerfully aid the ventilating machinery. We long ago explained the perfectly adequate means contemplated at each end to block the tunnel in case of war, and are satisfied that on this score objector-alarmists may be perfectly reassured. They number comparatively few to-day, we imagine, for if the war has taught us one thing more convincingly than another it is the recognition of the immense value the tunnel would have proved to ourselves and our allies during the past four years. May it in a still greater degree increase the comfort and prosperity of the two countries it will do almost as much to unite in perpetual friendship as their common comradeship



NEW PARLIAMENT BUILDING, WINNIPEG, MANITOBA

has banded them so effectively together in defence of all that is best in civilisation against the savagery of the Hun!

Sir Aston Webb maintains that the Royal Academy is the most democratic institution in the world. If so, remarks the *Manchester Guardian*, it has made wonderful strides since mid-Victorian days, when a mediocre painter was elected to the presidency because such was the Royal wish. Lady Eastlake relates, in her memoirs, that when her husband, Sir Charles, stood for the presidency, Queen Victoria sent a message to the Academicians expressing an earnest desire that they would elect him: "It is of the utmost importance that the president should not only practically illustrate the rules of art, but also be a gentleman of erudition, refined mind, and sound theory. No other artist fulfils these conditions." On another occasion the Queen secured the election of Richard Wyatt by remarking to John Gibson, R.A.:—"I expected long ago to have seen Mr. Wyatt's name on the list of Academicians." "So did I," chimed in Prince Albert. Gibson transmitted these remarks to his fellow-members, and they obsequiously gave Wyatt the next vacancy.

Mr. Lloyd George has issued a powerful appeal to employers, urging them to do all in their power to find employment for men disabled in the war. Meanwhile he and his satraps are pauperising the "out of works," who number just upon a million, and levying a tax on their more honest workmen and workwomen of a million and a quarter a week which is being paid out to them, of which the distribution is 192,994 for London and South-Eastern Districts, and the total for the whole building trade is 55,000, of which latter a large number must be London and South-Eastern districts. Yet, as a writer in the *Times* pointed out last Saturday, with all this, although he accepted a builder's tender for about £200 work more than a month ago, the builder has been unable to commence work through his inability to get men for the job. This tends to drive one to the belief that either the men won't work, but prefer to draw out-of-work pay, or else utter lack of *liaison* on the part of the various Labour Exchanges in the way of letting the men know where work is waiting for them. This is no solitary experience in the South-Eastern district; we know of scores of such instances. No wonder West Leyton has driven the first nail into the coffin of this Government!

It is proposed to construct a "Warrior's Chapel" at St. Mark's Church, Camberwell, as a memorial to fallen parishioners.

Members of the Royal Institute of British Architects willing to lend their designs of War Memorials for exhibition are requested to send in their names to the Secretary, R.I.B.A., 9, Conduit Street, W., at the earliest possible date.

The Cupar (Fife) Burgh Council have recently advertised for a Burgh Surveyor for this county town, which has a population of 5,000, offering the salary of £150 a year only. The numerous applicants for this cushy job seem to have been anticipated long ago in a well-known old Scottish proverb!

THE HOUSES WOMEN WANT.

Now that a Lady Architect has most deservedly won the first prize in the National Housing Competitions, and the "twelve practical women" appointed for their wide domestic experience to advise the Government from the housewife's point of view have published their final report, it behoves the mere male architect to mind his p's and q's if he is allowed to design any of the many thousands of dwellings in which, at the cost of the taxpayers, and the confusion of the homeless middle-class folk who are left by philanthropists to look after themselves and everybody else.

Meanwhile, one may perhaps be permitted to remark that reasonable agreement with most of the recommendations of the twelve practical women is not altogether incompatible with the conclusion that many of the defects complained of are due to the man-architect, so far as his design of the much-desired perfect dwelling goes. It is true that Lady Emmott's Committee in their interim Report laid great stress on the need for a larger superficial area of the workman's house, and that the present report emphasises the necessity for an ample scullery, but as regards either of those matters the architect, like most of the rest of us, has to cut his coat according to his cloth, and is scarcely responsible for inability to plan rooms or provide accommodation on sites of insufficient area. The indispensable bit of india-rubber on his drawing-board has its uses, and will, no doubt, oftener fulfil its primal purpose when the practical woman at his elbow sternly demands the erasure of some eyesore; but it will not stretch to dimensions impossible of attainment in reality. We rather think the twelve practical women recognised this when they sat down and debated the doubtless importunate suggestions of their sisters, for they devote by far the greater part of their Report to the fittings and appliances of the home, in regard to which in the great majority of cases we are heartily at one with them.

We said, for instance, only last week, that, as the Committee insist, there is no existing coal range that is really economical of coal or easy to manage; and we have said for years, as they say, that a cheap electric supply is absolutely necessary if coal fires, which involve dirt and consequent labour, and half the domestic work now necessary, are to disappear. Central heating for individual homes is sympathetically discussed, as well as methods for obtaining adequate hot water supplies. It is proposed that instead of the combined range and fireplace in the living room a cooking stove, which would heat water for bath and sink, might be placed in the scullery, and perhaps radiators or special fuel-saving stoves be provided in the living room. Too little distinction in the case of the average water-heating apparatus, it is urged, has been usually made between the kettleful of hot water needed for "washing up" and the dozen gallons required for a bath. All of which is true, but it is useless for the architect to specify electrical appliances for workmen's dwellings at their present prices, and burning current at from 5d. to 10d. per unit. Gas-cookers, again, it regards as somewhat wasteful of gas, but members have seen a type with flat boiler attachment at the back which would heat water for washing up while cooking was being done without the use of extra gas. We mentioned this ourselves some weeks since, but it is not yet on sale or hire.

The report points out that the black-leading or polishing needed by certain stoves entails nearly a morning's work once a week. Metal parts of stoves should be enamelled black, and tests should be made in the extended use of tiles, which can be quickly cleaned. The wash copper, whether for coal or gas, should be fitted with a water supply tap and a draw-off tap. A type of steam-consuming copper brought to the Committee's notice obviates the steam bath to which the washer is otherwise subjected. All this is true enough, but the architect can do little to forward it.

Different types of paints, distempers, glazed bricks and tiles, and other washable materials are suggested as appropriate wall-surfaces for different parts of the house, mention being made of the fact that the Swedish housewife periodically moves her furniture to the centre of the room, covers it with a tarpaulin, and swills the interior walls, the water being carried off by a small gutter in the corner of the room. These washable wall materials, we are told, may be obtained in the lightest and most beautiful colourings, and are permanent. So they can be had here, as for some years our advertisement pages have testified. Is it the architect's fault that cheap papers are used instead?

In a paragraph on fittings, the Committee describe the best type of kitchen dresser, mentioning also that the "American cabinet" has much to recommend it. It is fitted with inverted bins for flour, sugar, salt, etc., while underneath are drawers and a cupboard for pans and dishes. In the centre is a table on which food can be prepared. This cabinet saves unnecessary walking for the housewife—or, it should have been said, it might do, if her head oftener saved her heels.

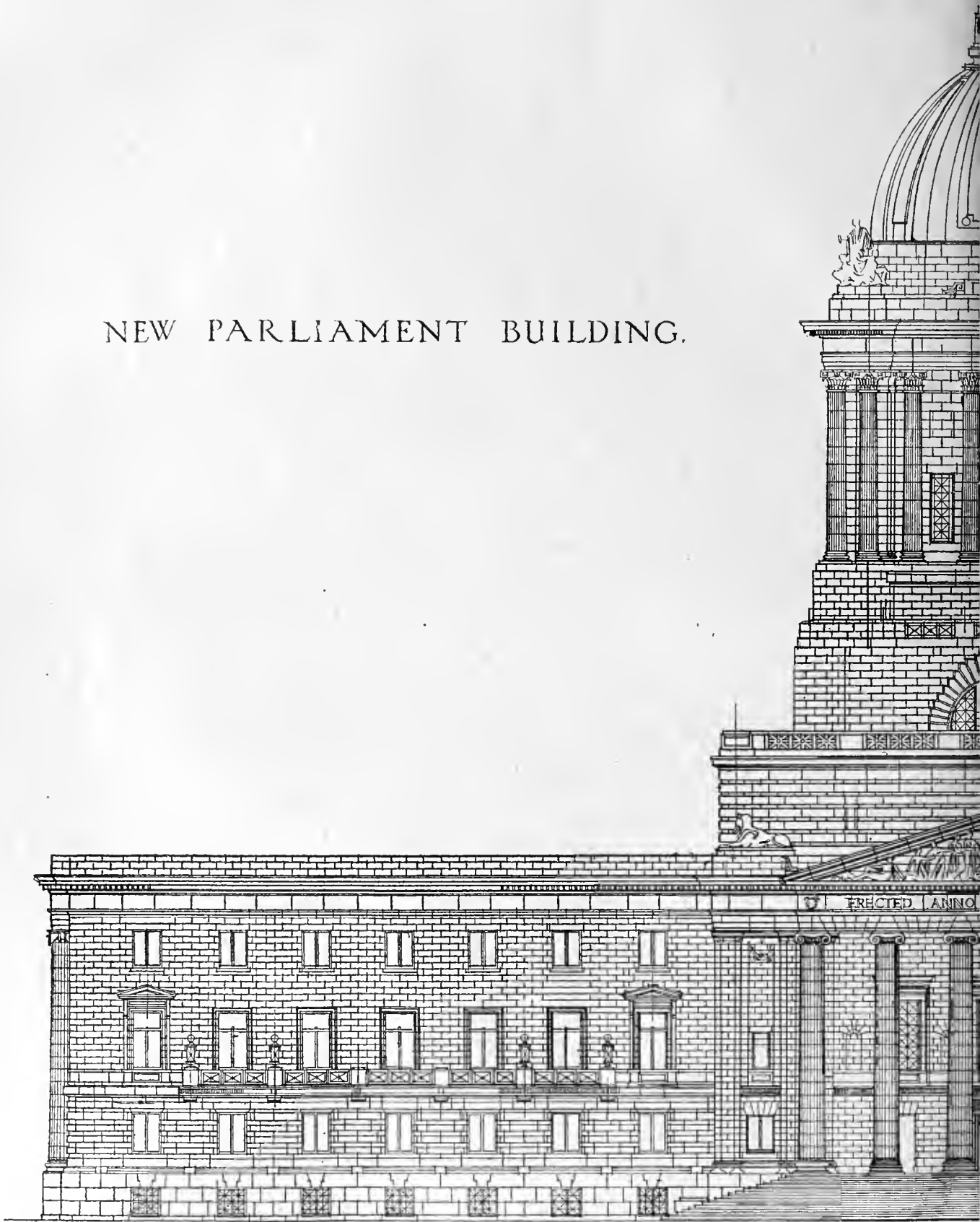
Much space is devoted to the equipment of the model village. Garden divisions, it is urged, should be hedges. Gardens can be small if there are allotments, and were only the houses arranged so that the space beyond their private gardens formed a square this could constitute a common playground immediately accessible to young children from their homes. Little children's playgrounds should not be too prim, and should have some trees. Playgrounds for older children should be within a short walk of home. Social centres for adults are recommended.

Villages should have school shower baths, usable by adults after school hours, a village hall equipped with a stage, a school gymnasium for alternate use of the sexes, a reading-room with a permanent children's library, local clubs, an open-air café near the school, where the village band could play and dances be held at least one evening a week in the summer, and a motor transport system to bring villagers in reach of educational and social possibilities in the market town.

The communal laundry system, the Committee recognises, is not popular with Englishmen, but it believes the system might be employed to the extent of what is described as the "Bag Wash." This would entail the establishment of electric power laundries capable of being run by small staffs, the washing to be collected from and returned to each family weekly in a special family bag marked with a number. Each bagful would be washed separately, wrung with a hydro and "rough dried," the ironing being left to be done at home. The separate treatment of each bag would obviate the risk of

(Continued on page 180.)

NEW PARLIAMENT BUILDING.

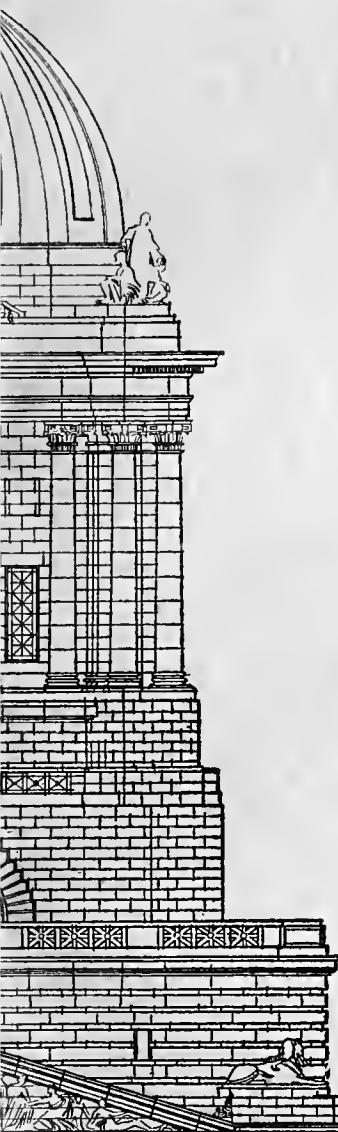


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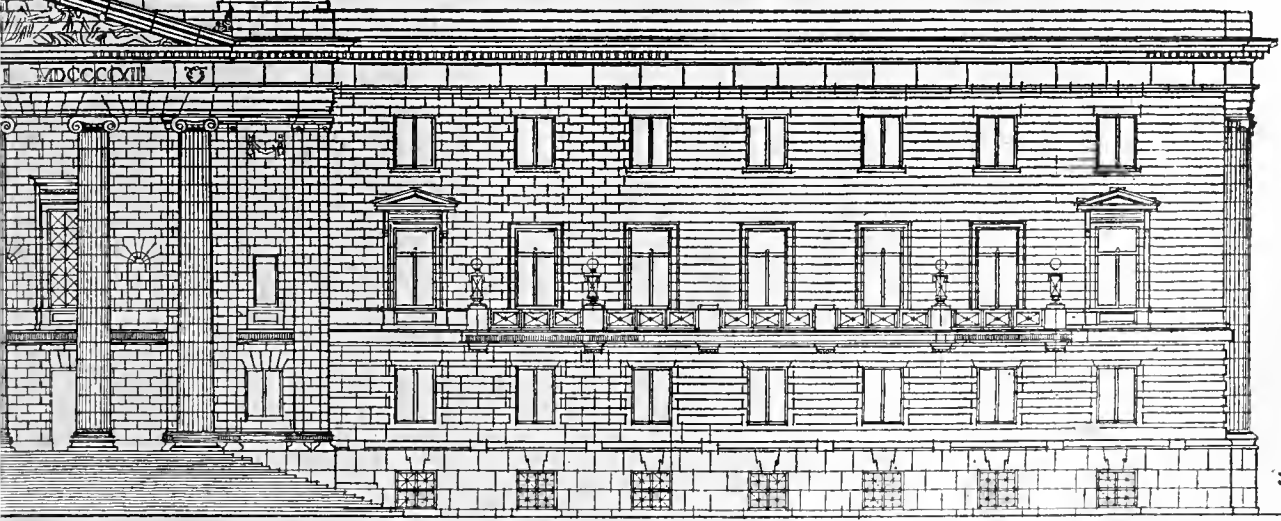
NORTH



FROM WORKING DRAWING C



WINNIPEG, MANITOBA.
FRANK W. SIMON F.R.I.B.A.
ARCHITECT.



BUILDING AS EXECUTED, 1919.

(Continued from page 176.)

loss or confusion with other bags, and overcome the necessity for the separate marking of each article in the bag. This plan would rid the housewife of the heaviest and most unpleasant part of her "wash-day." It is estimated that the cost of each "bag" washed would be roughly 7d. and that for this sum the bag could contain 150 articles.

As for communal cooking, the Committee state that it does not seem probable that communal kitchens to which women could come and cook for themselves will find favour. The solution of communal cooking would seem to lie in the supply of varied and wholesome cooked foods at reasonable prices either by municipal corporations or by private enterprise. The transformation of the public-house into the cheap restaurant would be of great assistance to communal life, especially in country districts. British soldiers have become familiar with the sight of the Continental worker and his family sitting under the trees in a cafe, eating a cheap and well-cooked meal, and if those interested in the work of social reconstruction will interest themselves in this idea, the results will be a vast improvement in our public-houses and rest and enjoyment for working women.

The report goes on to consider, particularly with reference to London, means of converting existing houses into working-class flats. Insistence is laid on (1) the compulsory public registration of the landlord; (2) a system of sanitary certification by a medical officer of health before a house designed for one family is allowed to be occupied by more than one. Part 2 of the report discusses the special requirements of the country cottage, with special reference to matters such as water supply, rain-water tanks, hatched roofs, pigstyes, fowl runs, and other matters which are problems more of the country than of the town. A third section of the report deals with housing conditions in Wales.

The report is available at His Majesty's Stationery Offices, and can be had through any bookseller, and is well worth study by all concerned.

PROFESSIONAL AND TRADE SOCIETIES.

SOCIETY OF SCOTTISH ANTIQUARIES.—At the last monthly meeting of the Society of Antiquaries of Scotland the first communication was on "The Relation between Early Anglo-Saxon and Celtic Art as illustrated by the Hartlepool Gravestones," by Professor G. Baldwin Brown, F.S.A.Scot., who stated that the earliest group of Christian monuments in Great Britain was that containing the well-known inscribed pillar stones at Whithorn and Kirkmadrine in Galloway, dating from the Ninian period of Scottish Christianity. Next in order, according to the generally received opinion, came the Hartlepool gravestones. They were small slabs, marked with crosses, inscribed, and at times ornamented, that were placed in a recurrent position upon or within a grave, where they might have formed supports or pillows under the head of the corpse. There was strong presumptive evidence that they belonged to the last part of the seventh or early part of the eighth century. The second paper was an account of the excavation of three small prehistoric forts in Ayrshire by Mr. John Smith, Dykes, Polry. The three forts are those of Castlehill, Aitnock, and Coalhill.

The Bath Corporation has decided to build a new secondary school at Beechen Cliff.

Mr. Fletcher T. Turton, who has been Director of Housing to the Liverpool Corporation, is resigned after fifty years' service.

Our Illustrations.

BANKERS' ROOM, TRUST UNION BUILDING, WASHINGTON, U.S.A.

This illustration shows a view looking from the entrance. We are indebted to the architects, Messrs. Wood, Dome, and Denning, of 17th Street, N.W., for the photograph, which furnishes an excellent idea of the thorough character and architectural interest of these important American Trust Union premises. The Ionic columns are in marble, and the banking counter front corresponds. The screen on its top is in hard woods fitted with appropriately designed bronze grilles. The range of electric lights above illuminate both sides of the counter space without casting a shadow.

THE "SAXON CHURCH" AT WAREHAM, DORSETSHIRE.

This drawing was exhibited at the Royal Academy during the autumn, when the Royal Society of British Artists held an exhibition at Burlington House owing to the Suffolk Street Galleries being taken over by the War Authorities. Mr. W. Herbert Allen, R.B.A., has been good enough to lend us his capital water colour, and sends us the following note about this church:—

"As one enters the old town of Wareham on the north, the station side, one ascends through a gap in the ramparts which surround the town, and there comes immediately into view on the left the little building known as St. Martin's Church, which is said to date from Saxon times. It is no longer used for services, and the paving of the floor is nearly all gone. The chancel arch is Norman or late Saxon; it has hagioscopes on either side. The Purbeck marble font is interesting and bears the inscription: 'Set up by Willelmo Welsted and Philiphel, liar, 1607.' The little tower can be ascended. It contains a bell inscribed 'Clement Tozier cast me in the year of our Lord, 1678.' The church has a length of forty-five feet. A leafy avenue of very considerable beauty leads from the back of the church to the old fortifications."

NEW PARLIAMENT BUILDING, WINNIPEG, MANITOBA.

The final competition which was held among five selected firms in 1912 resulted in the choice of the design submitted by Mr. Frank W. Simon, F.R.I.B.A., then living at East Grinstead, in Sussex. The assessor, Mr. Leonard Stokes, went out to Canada to advise the Government of Manitoba and make his award. The scheme has in the meantime been carried out nearly in accordance with the original drawings, but various changes necessarily have been made, as will be seen by the copies of the architect's working drawings which we give to-day. This new Parliament Building is now rapidly approaching completion under Mr. Frank Simon's personal supervision. The estimate originally was £400,000, but the precise cost already incurred, so far as we are aware, has not been publicly stated. The illustrations given to-day include the two main plans which, owing to their large scale and complicated detail as furnished by the big working plans, had to be redrawn to reproduce clearly within the restrictions of our limited space. The other double page given herewith shows the elevation of the entrance front as carried out. We shall at an early day publish the longitudinal section and side façade to scale. The competition drawings were given in our issue for September 27, 1912.

ELECTROLYSIS IN REINFORCED CONCRETE.

The suggestion is made by a French scientist in *L'Année Scientifique* (Paris) that the deterioration of reinforced concrete may be caused by spontaneous electrolysis. The theory is that dampness and chemical impurities in the water employed in the manufacture of the concrete give rise to a continuous flow of local currents which slowly corrode the metal, and, little by little, cover it with a layer of oxide. The metal framework thus increases gradually in volume, so as finally to exert sufficient pressure to cause cracking and bursting.

That this pressure may be very formidable is proved by the following experiment: In a steel cylinder having an inside diameter of 38 millimetres a steel rod 23 millimetres in diameter is inserted, the free space then being filled with cement. The inside rod is then connected with an electric circuit and the apparatus placed in a tub of water. Under the influence of the current the rod will be oxidised and correspondingly increased in size. It will thus exert a pressure upon the cement surrounding it which will be transmitted to the cylinder; under the influence of this pressure the cylinder will expand and the measurement of this expansion proves that the pressure exerted in a comparatively short time is equal to 350 kilograms (770 lbs.). It is obvious that even the best cement could hardly resist such a pressure.

Another experiment, even more striking, supports this view. A column of cement 30 centimetres high and 150 millimetres in diameter, and having an iron core running from one end to the other, was plunged into water. A 50-volt current was then passed through the iron core, which acted as the anode; in less than three hours the column of cement had entirely collapsed.

IS WILLIS POLK AN ARCHITECT?

Is Mr. Willis Polk really and legally an architect?

This problem is liable to become an acute bone of contention between Willis and the State authorities at an early date.

There is a State law which compels every practising architect to pay a licence fee of 15 dollars a year, or describe himself as an unlicensed architect.

When the tax collector went to Willis Polk's office for his licence money, Mr. Polk received him and said:

"Why do you tax me? All the architects here say I am not an architect. What is my word against theirs? Let the matter go!"

The tax collector, peeved and astonished, picked up one of the Polk letterheads.

"What do you call yourself here?" he snapped, adjusting his glasses.

"Willis Polk and Co., Builders," replied Mr. Polk. "There's no architect about that!"

The collector departed without collecting the 15 dollar fee. He says that he will yet prove Mr. Polk is an architect, or eat the licence.—*San Francisco Chronicle*.

The parishioners of St. Martin's Church, Scarborough, have decided to build a new grammar school as a war memorial. The estimated cost is between £6,000 and £10,000.

The Rugby Urban District Council have decided to proceed with their house building scheme, which provides for the erection of two types of house, one to let at £1 11s. a week inclusive, and the other at 19s. 6d. These suggested rents seem a bit high!

The Dudley Corporation have placed on record its high appreciation of the ability and zeal with which Mr. John Gammage, Borough Surveyor, has faithfully served the borough of Dudley for a period of over thirty-four years, and wished him happiness in his well-earned retirement.

The scheme for replanting Britain's denuded acres is now complete. The Treasury has granted £100,000 to the Board of Agriculture for this purpose, and in all 2,000,000 acres will be planted. It is estimated that one acre of land requires 3,000 young trees, so something like 6,000,000,000 trees will be wanted. The task will require the labour of 16,000 men, most of whom will be discharged soldiers. The chief kinds of trees to be set are spruce, larch, pine, Scotch fir, ash, elm, poplar, oak, and aspen.

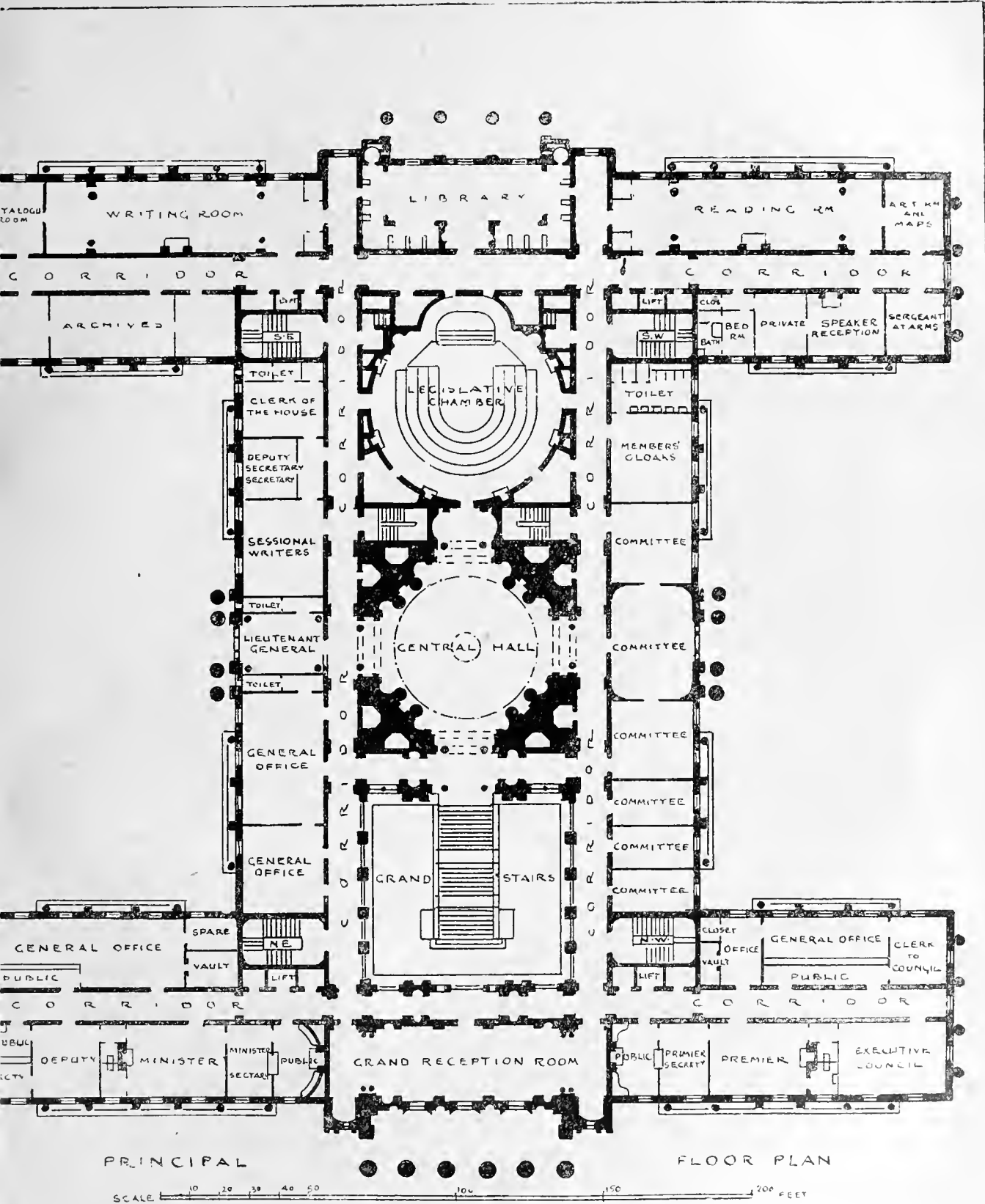


BANKING ROOM OF THE TRUST UNION, WASHINGTON, U.S.A.
Messrs. Wood, DOME and DENNING, Architects.



THE "SAXON CHURCH," WAREHAM, DORSETSHIRE.—From the Exhibition of the Royal Society of British Artists. By Mr. W. HERBERT ALLEN, R.B.A.





AS EXECUTED.—Mr. FRANK W. SIMON, F.R.I.B.A., Architect.

Our Office Table.

Lord Desborough, presiding at the annual meeting of the Land Union last Wednesday, said the union intended to fight both in Parliament and in the Courts. There were people who seemed to think that to ruin every landlord would be for the good of the country. They forgot that to ruin the landlord was to ruin all those who are dependent on him and to whom he paid wages, to say nothing of pensioners. Moreover, to destroy the landed interest would be to destroy the whole credit that was founded upon the land. Mr. Edwin Evans, president of the Property Owners' Association, said the Government were entering upon a disastrous enterprise in attempting to house the working classes. The shortage of houses had been brought about by rotten legislation. If the working classes were to be housed, why not the middle classes? But it was impossible to build houses at less than 100 per cent. above pre-war price, and the deficiency must be made up by the Government.

Mr. Davidge, a Local Government Board inspector, last week resumed his inquiry at Coventry into the circumstances leading to the "rent strike" by the tenants of Corporation houses at Stoke Heath. Mr. Allan Richards, the original contractor, was represented by a solicitor. Mr. Councillor Howells, chairman of the Housing Committee at the time of the erection of the houses, contended that the dwellings were not extravagantly put up. The defects were due to the hurried way the houses were erected under pressure from the Ministry of Munitions. All defects were covered by the retention money. Councillors Poole and Wale criticised the sub-contracting system that was adopted. The inspector will make a report in due course. The tenants owe the Corporation in rent over £4,000.

A war memorial, in the shape of a stained-glass window, to be set up in St. Paul's Church, Carlisle, was the subject of an appeal heard last week by Sir Lewis Dibdin, Judge of the Provincial Court of York, sitting at Church House, Westminster. Canon Gardner, the vicar, was the appellant. It was held by the Chancellor of the diocese that the first design, owing to the isolation of the central figure of the group—that of the Saviour—was in the nature of a crucifix. In the amended design it was proposed to remove this isolation by extending the outstretched arms of the figure into the right and left panels. The vestry was ready to accept either design. Giving judgment, Sir Lewis Dibdin said neither a rood nor a rearedos was being contemplated here, and as there was no question of legality he thought judicial discretion might have been exercised about the window. The appeal must be allowed and a faculty be granted for the second design.

The trustees of the William and John Jones Trust have decided to give a free site and £50,000 for the erection of a war memorial infirmary for Wrexham and East Denbighshire. The late Mr. John Jones left nearly £250,000 for the purposes of hospitals, consumptive sanatoria, and convalescent homes, chiefly for the working classes. Mr. John Jones was a brewer and formerly the proprietor of the Island Green Brewery, Wrexham, and of many licensed houses.

At the annual meeting of the District Surveyors' Association, held recently at the Royal Institute of British Architects, Mr. Arthur Crow, F.R.I.B.A., the newly-elected President, referred to the fact that the District Surveyors of to-day were the direct successors to the "surveyors or supervisors" appointed by the Aldermen of the City, over 250 years ago, under the "Act for Rebuilding the City of London" after the Great Fire. Mr. Crow said that among the many distinguished architects who had been members of the Association since its foundation in 1845, were Professor Aitchison, R.A., and his father, Geo. Aitchison (architect of the St. Katherine's Dock), Professor Donaldson, Thos. Hy. Wyatt, Geo. Godwin (the editor of *The Builder*), John Whichcord, Geo. Barnes Williams, and Edward T'Anson,

also William Grelrier, past president, Mr. H. N. Kerr, and Professor Elsey Smith, they were glad to have among their colleagues to-day. Mr. Crow mentioned that his election as President formed an interesting link with the past, inasmuch as in the early days of his professional career he had been associated with their first President, Mr. Edmund Woodthorpe, Senr., who was appointed by the Middlesex Magistrates as District Surveyor for Limehouse in 1839, under the Act of 1774.

Correspondence.

THE OLD TITLE OF ARCHITECT AND SURVEYOR.

To the Editor of THE BUILDING NEWS.

SIR,—An undercurrent is rampant in every business or profession at present. It is to be regretted that it apparently exists in our profession, which is very unfair, and likely to damage all respectable practitioners, their assistants and pupils, especially those not yet returned from the front, and others who have conducted their duties, however small, in an honourable and straightforward manner for many years, who have never been approached to join a society.

It now behoves them to establish a combined association, federation, or league, whose members shall be exclusively composed of British subjects, to look after the mutual interests of the profession, where the entrance fee and subscription shall be moderate and fair.

Now is the time for gentlemen to come forward to establish such a universal society on broad, yet economical, lines, embracing all branches of the profession; but not to run antagonistic to existing societies. It should be for one common object of federation improvement and advancement.

I feel confident, sir, such a society, with the support of the professional journals, would be a success at a time like the present, as all should be desirous of upholding the dignity and improving the status of the profession in a crisis like the present.

A committee might be appointed to settle details, title, rules, etc., with appointed representatives in all parts of the country to throw out the life-line, so saving the profession from extinction.

It does not make any difference whether one has a large or small practice—all should be welcome.

Let us take up the hand of fellowship, showing our brotherly love and respect for one another—not animosity.

Federation shall be our strength and watchword.—I am, Sir, yours, etc.,
March 11, 1919. "MODULE."

Plans have been prepared for the enlargement of the Victoria Hospital, Worksop. The scheme will involve an expenditure of between £20,000 and £25,000. Mr. A. H. Richardson is the architect.

The Retford Town Council has decided that the war memorial should be divided—a memorial to be erected in the Market Square, and a new hospital, subscribers to be asked to earmark their contributions.

The borough engineer of Buxton, Mr. F. Langley, has been instructed to proceed with the preparation of plans and specifications for the reconstruction of the natural baths, at a cost not exceeding £15,000.

A young curate, reading the announcements on a recent Sunday, said: "The subject of the sermon this evening will be 'The Punishment of Hell,' and a collection will be taken up for the new heating apparatus."

The architect for the workmen's dwellings which the Pontefract Corporation is to erect is Mr. S. H. Garside, of Ropergate. The borough surveyor, Mr. J. E. Pickard, is to prepare planning schemes covering land coming within the scope of the Town Planning Act.

A scheme for a memorial gateway and a new wing at the East Suffolk and Ipswich Hospital has been accepted by the town as a war memorial. The cost is estimated at £50,000, and the sum of £31,605 has already been subscribed. A committee have been appointed to carry out the work.

THE PROPRIETORS OF THE

Daily Express

and the

Sunday Express

realising the urgent problems of better Housing for Workers and the Middle Class, have taken steps to promote a Competition among Architects and Amateurs in order to secure a variety of designs incorporating more efficient accommodation and labour-saving devices, and effecting economy in various ways.

Prizes to the value of 1000 Guineas are offered to Professional Architects and to the value of 500 Guineas to Amateurs.

The following Assessors have been appointed to adjudicate on the merits of the designs:—

Mr. H. T. HARE
(President of the R.I.B.A.)

Mr. Wm. DUNN (F.R.I.B.A.)

Mr. A. E. RICHARDSON
(F.R.I.B.A.)

The Competition will remain open until April 14.

Particulars and conditions of the competition will be forwarded on application to the "Organising Secretary, Model Homes Exhibition, 'Daily Express' offices, 8, Shoe Lane, London, E.C.4."

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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OUR ILLUSTRATIONS.

The "Old Ashmolean Building," Oxford, O.B. 1682, from a water-colour drawing by Mr. S. S. Walter Tyrwhitt, M.A., R.B.A.	
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Strand, W.C.2

New Parliament Building, Woking, W. Manteloh, Mr. Frank W. Simon, F.R.I.B.A., architect. Illustrated from the working drawings of the building as executed. The west elevation.	
The Housing Scheme of the Grahame-White Company, Hendon, N.W. Mr. Herbert W. Matthews, M.S.A., architect. Views and plan.	

Currente Calamo.

The text of the Housing Bill, which is published, is to apply to England only, and not to Scotland. We give an abstract of its provisions, and Dr. Addison's not very luminous exposition thereof to Pressmen last week. It is as well to wait for the debate on the second reading before saying more except that it is clear that the Local Government Board, or the Ministry of Health—whichever or whatever the Authority is to be that is to work the scheme "may," if it pleases, ginger up the local authorities to action, to double-quick time compared with the past, as it will have the right to do seeing that the State is to make good any loss on rents which local authorities may incur, under schemes approved by the Government, over and above the proceeds of a penny rate. No one, so far, has any knowledge of the extent of the State's liability, and estimates vary from ten to twenty millions, the higher figure being the most fancied. Dr. Addison, we suppose, will have some figures to submit when he moves the second reading. It is clear that, with certain exceptions, based on the fair market value of the property, owners will be deprived, under the Bill, of the right to claim compensation for value as that of a site cleared of buildings.

The Industrial Council of the Building Trades has sent to the War Cabinet and various departments copies of a resolution protesting against the avoidable delay in pressing forward the resumption of building operations. The resolution sets down the delay to lack of adequate arrangements to enable brickyards and quarries to re-start, and to gross incompetence in handling the supply of material and demands that the experience of members of the Council should be used for restoring the industry to its normal position. Messrs. A. G. White and W. Bradshaw, the joint secretaries, in a covering letter, complain that there has been no attempt to start the small brickyards, which hitherto have been responsible for more than half the bricks made, suggest that local authorities should be empowered to give temporary financial help towards putting machinery and kilns in working order, and urge that lack of knowledge on the part of the public of the extent to which

the Government is prepared to release building materials for which it has placed orders for use by private persons, and at what price, is causing a large amount of work to be held up, and, already, an amount of unemployment, which will be sharply accentuated when demobilisation becomes more general as it is expected to do when Peace is signed. Meanwhile, the season is advancing, and unless immediate steps are taken this season's production from the local brickyards, stone quarries, etc., will be largely missed.

The assistance which building societies can render in the solution of the housing problem forms the subject of a communication received from Mr. E. Naylor, chairman of the Building Societies' Association, who says the small builder can build at a price with which local authorities cannot compete, a fact which building society managers know and appreciate. The small builder, he says, is a specialist, acts as his own architect and clerk of works, his own agent both in buying and selling, has no establishment expenses, can vary his fitments to suit different tastes, and can adapt any house during erection to the wishes of a prospective purchaser at little or no extra cost. He usually arranges to have a few nearing completion all the time, so as to save interest. Such houses would probably sell at a little more than might be considered post-war normal values, and anyone with a very moderate proportion of a reasonable price could borrow the rest from a building society and pay it back by monthly instalments extending over a term of years. The houses could be provided in this way with a smaller subsidy from public funds. The subsidy would be a direct encouragement to thrift, and would help to realise the building society ideal of every family owning its own home.

We congratulate the Auctioneers' and Estate Agents' Institute on the steps it is taking to develop what is the most important scheme for the technical training of those engaged in real estate yet evolved. Originating through the present president of the Auctioneers' and Estate Agents' Institute of the United Kingdom (Mr. W. H. Wells, of the firm of Messrs. Chesterton and Sons, of Kensington, Chelsea, and Chelsea), the project has been

considered by the Senate of the University of London, and the first result is seen in the decision to create a degree of Bachelor of Science in Estate Management for external students. Last week the Council of the Auctioneers' Institute settled the terms of the articles under which will be formed a College of Estate Management to be administered by a board of governors and carried on in co-operation with the University of London. The vast amount of work, including valuation, which auctioneers and estate agents have to perform, demand thorough training of a theoretical kind at the outset of a career, and this we have no doubt will be secured by the scheme. The preliminary list of donations to the college fund includes £500 from Mr. Wells, 250 guineas from Sir James Boyton, a like sum from Messrs. Knight, Frank, and Rutley, gifts of £250 by Mr. Arthur G. Dilley (Huntingdon) and Mr. J. H. Townsend Green (Messrs. Weatherall and Green), gifts of 100 guineas by Mr. Ralph H. Brady (Manchester), Mr. S. R. Chesterton (Kensington), Mr. W. W. Sanderson (Newcastle-upon-Tyne), and Mr. Charles F. Slater (Kensington), and substantial sums from others. Between £50,000 and £100,000 will be required to carry out the work, which includes special provision for the training of those whose circumstances have been impaired by the war, orphans and others, and also the grant of adequate scholarships tenable in the University of London. There will be a collegiate establishment in London for day and evening teaching, and in addition travelling professorships, so that service may be rendered to students in all the great centres of the United Kingdom; and post-graduate courses will be instituted, to keep practising members fully abreast of the ever-changing requirements of the profession.

Sir Aston Webb, the chairman of the Council of the London Society, writes to draw attention to a work of great public importance which they have completed during the war. This consists of a complete plan of the development of Greater London, which has taken over three years to produce and shows for the first time as a whole the proposals for new arterial and other roads suggested by the London Traffic Branch of the Board of Trade, and

considered in conference with the local authorities, the London Society, and others interested. The present time is a critical one in London development in view of the proposed establishment of a Ministry of Ways and Communications; and the London Society rightly feel that this plan will enable public authorities and others interested to see at a glance how the proposed roads and open spaces affect their areas and possible new town-planning and housing schemes.

No. 17, "Art and Industry," of the Reconstruction Problems pamphlets being published at twopence by the Ministry of Reconstruction, is the one most worth reading we have perused yet. Whoever the writer is he is on the right tack, and we hope has other influence which he can bring to bear on the State, which so far has done as much harm as—perhaps more than—good in all that it has attempted in the way of art education, as, year after year, we have pointed out. We are not so concerned as the writer of the pamphlet about the "boxes and bottles, tins, and the rest of the paraphernalia" of the providers of the thousand and one needless things people are beguiled into parting with their money for, and should like to see fewer sales of such facilitated by such "Art." But as we have urged again and again, regarded as a mere trade asset art pays, as the French found out long ago, and if all the miners and other strikers emigrated to-morrow England might possibly find self-supporting work for the craftsman, if we could train him in time to supplant the mere "hand." In some measure it may help, as it is proposed, to provide in London a permanent exhibition of modern British works of a high standard of design, craftsmanship, and manufacture, and to organise provincial or travelling exhibitions of a similar character. A Bureau of Information for manufacturers, distributors, and the general public is also to be established, and an Industrial Art Committee to promote the initiation and encouragement of research and other work.

Very appositely the writer quotes Wren in support of his contention that instruction in and by means of art should have a great place in education. Christ's Hospital Committee Book contains a record from which the following is extracted:—
"At a committee of the Schooles in Christ's Hospitall, the 30th November, 1692 . . . Mr. Treasurer acquainted the committee that he had two letters, one from Sir Christo. Wren and other from Esq. Pepys, declaring their opinions concerning the introducing the art of drawing among the Boyes." Wren's letter, which Mr. Nathaniel Hawes read aloud to the committee, is as follows:—

Nov. 24th, 1692.

Sir,

It was observed by somebody there present (at his house) that our English Artists are dull enough at invention but when once a foreigne patterne is sett they imitate so well that commonly they exceed the Originall. I confess the observation is generally true, but this shows that our natives want not a Genius but education in that which is the foundation of

all Mechanick Arts, a practice in designing or drawing, to which everybody in Italy, France and the Low Countries pretends more or less. I cannot imagine that next to good writing anything could be more usefully taught your children especially such as will naturally take to it, and many such you will find amongst your Numbers who will have a naturall genius to it, which it is a pity should be stilled . . . It is not Painters, Sculptors, Gravers, only that will find an advantage in such Boyes but many other Artificers too long to enumerate. Noe Art but will be mended and improved; by which not only your Charity of the House will be enlarged but the Nation advantaged . . .
Your affectionate friend and humble servant,
CHR. WREN.

So far the nation has not been so advantaged. More than two hundred years after we still fail to understand the meaning and place of art in education. Art instruction has been admitted to the curriculum, and in public elementary education is now an obligatory subject, but its full educational value has not yet been recognised, and it is insufficiently related to the rest of the curriculum. As a means of education it has been allowed to drift, and absence of a guiding principle has caused divergencies of aim which have resulted in contradiction and confusion.

A committee of senior officers, representative of British Expeditionary Forces, the Dominions, and India, has been constituted under the chairmanship of the Adjutant-General to consider claims made by units to erect on battlefields permanent memorials to their exploits. The committee will be known as the "Battle Exploit Memorials" Committee, and the chairman is Lt.-Gen. Sir G. M. W. Macdonogh, K.C.M.G., C.B., Adjutant-General to the Forces. Hitherto the erection of memorials on battlefields has only been permitted on the distinct understanding that they were temporary, and certain divisions have actually erected such memorials. The Governments of France and Belgium have, however, expressed their willingness to consider applications for units to erect on battlefields memorials of a permanent nature, but they have requested, at the same time, that applications should not be submitted except through one central authority, and with this in view the committee referred to above has been constituted. As the battlefields of France and Belgium have been fought over so often and by so many units, it will not be practicable, as a general rule, for each unit to have its own separate memorial. It is not, however, the intention to exclude from consideration the claim of any individual unit to erect its own memorial, but the committee hope that as a rule claims for the erection of memorials to divisions, or higher formations only, will be submitted. The exploits of smaller units can then be recorded on these memorials. Claims must be addressed direct by units to the secretary, Battle Exploit Memorials Committee, War Office, Whitehall, London, S.W.1, and must reach him not later than:—From France, Egypt, and Salonika, Canadian units, June 1, 1919. Australian, New Zealand, and Indian units, September 1, 1919. Claims must be accompanied by an accurate sketch plan of the ground, the exact map reference of the site on which the proposed memorial

is to be erected, a design of the memorial, if chosen, together with a note as to the area it will cover, and a full statement as to the historical facts in respect of which the memorial is to be erected. In submitting claims units should state the sum of money which they guarantee for the erection of their memorial, including the acquisition of any land that may be necessary for their purpose.

THE PROBLEM OF PRICES.

The great present need is a reduction generally, of prices. Mr. Austen Chamberlain admitted this last Wednesday in his replies on the general financial situation to Sir Frederick Banbury, Sir Donald Maclean, and Mr. Clynes. He also said that it was the object of the Government to get rid of control, and that it would be better for the Government to cut its own losses rather than keep up prices. Some who heard him tell us, indeed, that he gave the impression of being unable to persuade the Government to take the steps he desired, and as if he felt that any Chancellor and the Exchequer in these days was a figure of nine with its tail cut off, and practically under the screw of the Board of Trade and the newer "Ministries" and Departments which are adding millions yearly to the expenditure of the country on officialism.

We do not know how that may be, but we do know that the present inflation of prices in our own great group of industries, and in those which can be called the other constructive trades, is hindering the revival of work and adding daily to the dearth of orders and the consequent increasingly alarming growth of unemployment. Given a substantial decline all round in prices—and that necessarily implies a corresponding decline in wages—the future, even the early future, all round is hopeful. A prodigious volume of work is waiting to be done. It is certain that the pre-war efficiency of production can be, on the general average, improved on by 30 per cent. or so; and that means a busy, expanding industry with high real wages and satisfactory returns on capital. But it all turns on being able to bring down prices while safeguarding the interests of labour. The only other alternative is high prices and profits so swollen that the extra output involved by extensions and renewals can be recouped out of revenue before price falls.

There are secondary causes, of course, which are more immediately obvious to the superficial observer and the purveyors of political skin-plasters, but they all lead to the same conviction—namely, that our immediate concern is to speed up and synchronise our much interlinked and interdependent system of industry till it comes under the sole control of proper directors, able to ensure a demand for products at prices fair to all users and reasonably remunerative to producers. This is well pointed out in a pamphlet entitled "Reconstruction of Industry," by Mr. D. A. Bremner, O.B.E., the Director of the British Engineers' Association, in which are detailed some of the retarding factors which block the road to prosperity and content. They are, undoubtedly:—(1) Labour unrest. The continual menace of strikes and the ever-growing demand for more pay for less work. (2) Uncertainty as to the future fiscal policies of this country and of our Overseas Dominions. (3) Uncertainty as to the continuance of the Exchequer

Profits Duty, the rate at which it will be fixed if continued, and the future allowances in respect of writing down, increased output and new capital expenditure. (4) Uncertainty as to whether firms liable to Excess Profits Duty will be allowed to retain all or part of the amount now payable as a loan on fair terms of interest and repayment. (5) Uncertainty as to whether Governmental relief will be forthcoming in respect of pre-war and early war contracts, and, if so, the nature and extent of such relief. (6) The inadequacy of pre-war working capital to meet present-day requirements having regard to its reduced purchasing power. (7) The inability of many manufacturers and merchants, in the present circumstances, to make a reliable estimate of their financial position. (8) The lack of the reliable information available in pre-war days for the guidance and protection of those called upon to give credit. (9) The disquieting effect of the knowledge that the Government has to dispose of surplus stores to the value of about £1,000,000,000. (10) Uncertainty as to changes that may take place, even during a short future period, in the prices of raw materials and other constituents of production costs. (11) The lack of financial confidence due to the combined effect of the above causes and the restriction of credit at this very time when it is most needed. (12) The feeling of doubt and instability engendered by the rumours, sometimes officially voiced, of the impending nationalisation of land, mines, railways and certain other public services.

Labour unrest is the prime and dominant cause of industrial retardation. Uncertainty as to the labour costs that will be incurred, per unit of selling value produced in the execution of a contract, makes it impossible to estimate the cost of production and quote a competitive selling price without running an uncommercial risk. Furthermore, if the number of working hours per week and the workers' standard of performance per working hour are also uncertain, it is equally impossible to quote a competitive date of delivery. Mr. Bremner thinks we appear to be entering on a promising course of treatment of labour unrest, the main features of which are to be unreserved publicity, the education of the public mind in the relevant facts and circumstances undistorted by any biased medium, and full and frank conference between the Government, the employers, the organised employed, and the general public whose interests are so deeply concerned. Of these curative measures, the diffusion of true knowledge will be the most difficult and slowest of application; but, says Mr. Bremner—perhaps sarcastically—"We have, however, had war, peace, universal brotherhood and political propaganda, and are now well practised in the art."

As regards the uncertainty as to future prices, we quite agree with Mr. Bremner that in the present circumstances it is beyond the power of any authority to stabilise prices. They are determined by complex causes, many of which are external to this country and beyond our control. At the present time some of the causes operating even at home are beyond the Government's control. Stability can only be evolved more or less slowly out of the tangle of unbalanced forces left in the wake of the war. It is absolutely necessary, however, that everything possible should be done to accelerate the process of stabilisation.

But early reduction can be ensured by prompt release of fast damaging stores,

by the facilitation of transport, the encouragement of exports, and the encouragement by every possible means of the great schemes of reconstruction to which the Government stands—or stood—pledged. So far as it can help us, we wish all success to Mr. Bremner's "crying need of the moment—a scientifically conducted economic propaganda of a non-partisan character." We trust, however, that it will, to use Mr. Bremner's own words:—"Ignore 'war weariness,' 'work shyness,' and all the other physiological and psychical phenomena alleged to exist as a consequence of the war. For such diseases are apt to thrive on the ability to get something for nothing."

Our Illustrations.

THE "OLD ASHMOLEAN BUILDING," OXFORD.

Probably there is no finer example of the Renaissance architecture of the time of Wren in Oxford than this building, which was erected in 1682. The purpose for which it was designed was to receive the curiosities presented to the University by Elias Ashmole. These have the distinction of forming one of the most ancient treasuries in the kingdom. The assemblies, greatly amplified by the addition of the Fortnum collection and others, has for some years been transferred to larger rooms in the University galleries. The old Ashmolean building luckily remains unrestored, to the great satisfaction of artists and architects. Its fine entrance (rightly attributed to Sir Christopher Wren) is seen on the left of the drawing. On the right is an angle of the Sheldonian theatre, with a niche containing a statue of the sometime Dean of Christ Church, Dr. Fell, subject of the well-known rhyme. In the distance, between the solid and somewhat gloomy masses of these buildings, appears a cheerful glimpse into Broad Street bathed in sunshine. The water-colour drawing here reproduced has been lent us by Mr. S. S. Walter Tyrwhitt, M.A., R.B.A., of Oxford this excellent picture having been exhibited in the galleries of the Royal Academy by the Royal Society of British Artists during the late autumn (1918).

NEW PARLIAMENT BUILDING, WINNIPEG, MANITOBA.

We gave the plans of the two principal floors of this new building, and an elevation of the chief façade as executed, in last week's number of THE BUILDING NEWS. To-day we illustrate the west side elevation. These drawings are based upon the working details kindly lent us by the architect, Mr. Frank W. Simon, F.R.I.B.A., who won the work in competition a few years ago. We believe the Parliament Building is now nearly complete.

THE HOUSING SCHEME OF THE GRAHAME-WHITE COMPANY, HENDON, N.W.

This double page illustrates the co-operative housing scheme near the London Aerodrome and the works of this company. The houses are of three types: A, B, and C. The first two types are let for 19s. 6d. a week, and C for 23s. 6d. The cubicles are 10s. a week.

It has been the aim of the architect to break away from the evils of crowded, narrow street architecture, and to evolve more spacious housing. The houses are grouped round a large square, with a drive giving access to all house fronts, and a central roadway dividing the area

into two large spaces for recreation. This ensures a maximum of light and air, and gives a character of individuality. The style of architecture is typically a London style. Walls of London stock bricks, relieved by red quoins to the openings, are surmounted by sand-faced tiled roofs, with white wood dormer windows. The houses flanking the entrance to the square have colonnade fronts, carrying a rough-cast story above. The floors are of reinforced concrete, and the houses are practically fire-proof. Projecting hoods protect the doors and the heads of windows, and the frieze has simple cement enrichments. The planning of the houses is the outcome of recent reports of various authorities on improved housing conditions.

The front room on the ground floor has two sash windows and a fireplace with wood mantel in harmony with the room.

Behind this is a living-room with a combined open fire and cooking oven, also fitted with gas, with tiled recess above. This room is connected with a scullery fitted with gas-heated boiler and sink, out of which open the coal-place and larder.

The living-room has cupboard space and dresser with cupboard over, enclosed with glass doors.

On the upper floor are three, and in some cases four, bedrooms. In other instances a small room is connected by a doorway with the largest room. The bathroom is roomy and well-lighted. Hot water service from an independent boiler-house is connected to the bath, lavatory basin, and scullery sink in each house. Every room has electric lighting. There is a washhouse for the common use of householders, in addition to the boiler in each house. Each house has a private garden, reached from the scullery. The cubicles are on the second floor, approached by three separate fireproof staircases, and also have two iron emergency fire escapes. The rooms are well furnished with fittings built in, so as to avoid waste of floor space, and all are warmed from central boilers and ventilated by cross ventilation into a central corridor. Groups of bathrooms and lavatories, with tiled walls and sanitary composition flooring, are easy of access from all rooms.

Writing and billiard rooms are provided on this floor, and a tea room for residents and visitors is on the floor below. These rooms have open fireplaces, and the tea room has French windows opening on to a balcony. The first aid hospital, of which we give a view and plan, is provided for men and women in the company's works. The rooms are lofty, well ventilated and warmed, and walls are tiled, doors flush panelled, and all angles are rounded off. They are fitted with electrical equipment for massage and other treatments, and with up-to-date surgical appliances.

A rest room for winter, and an open verandah for summer use, for convalescent cases, face due south, with a cheerful view in the distance.

Mr. Herbert W. Matthews, M.S.A., is the architect.

As a temporary solution of the housing difficulty in their area, the Henley Rural District Council have decided to purchase Government huts for conversion into cottages if found suitable for the purpose.

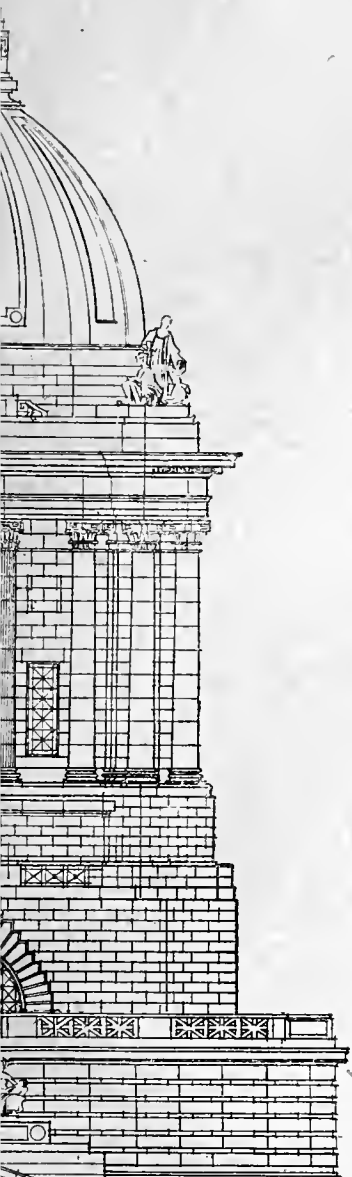
The council of the Royal Institute of Public Health are arranging for a conference in the Guildhall, London, on "Problems of Reconstruction in Relation to Public Health" from June 25 to June 28. The opening meeting will be held in the Mansion House on June 25, when the Lord Mayor will preside.

NEW PARLIAMENT BUILDING.

feet 10 20 30 40 50 60 70 80 90 feet
SCALE



WEST



WINNIPEG. MANITOBA.
FRANK W. SIMON F.R.I.B.A.
ARCHITECT.



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TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender: it adds to the value of the information

BUNHAM-ON-SEA.—For renovating the town hall and pavilion, for the urban district council:—
 Bellringer, A. (accepted) .. £107 3 0

CONSTANTINE (CORNWALL).—For structural alterations to be made previous to organ being fixed at the Constantine Wesleyan Church:—
 Howe Bros., Church Town, Constantine, Penryn .. £160 12 0
 Accepted. Only tender.

DINAS POWIS.—For erection of a bungalow at Dinas Powis. J. A. Owen, Pembroke Chambers, Barry Dock, architect:—
 Haines, R. and E. J., and Sons, Wyndham Road Works, Cardiff £1,125 0 0
 Davies, A., Dinas Powis .. 955 0 0
 Vickery Bros., Somerset Road, Barry .. 950 0 0
 Fisher, H., Crossway Street, Barry .. 903 0 0
 Britton, J., and Sons, Dinas Powis .. 888 0 0
 *Accepted.

LONDON.—For new entrance, including provision of new gates, at the Central Offices, for the Metropolitan Asylums Board:—

Wooden Gates.

Sykes and Son, Ltd., 10, Essex Street, Strand, W.C. .. £486 0 0
 Edgar, H. J., 3, Craven Terrace, Lancaster Gate .. 460 0 0
 Hollingsworth, H. H., High Street, Peckham .. 446 0 0
 Maddison, W. J., Clarkson Street, Canning Town .. 427 0 0
 Allman, J., 102, Bromley Road, Beckenham .. 400 0 0
 Manders, W., and Co., Leyton Green, Leyton .. 391 10 10
 Kazak, L., 12, Steele's Road, Hampstead .. 390 0 0
 Watt, A. B., 8-10, Great St. Helen's, E.C.* .. 246 0 0
 Engineer-in-chief's revised estimate, £400.

Iron Gates.

Sykes and Son, Ltd. .. £597 0 0
 Hollingsworth, H. H. .. 522 0 0
 Edgar, H. J. .. 520 0 0
 Maddison, W. J. .. 451 0 0
 Manders, W., and Co. .. 439 18 10
 Allman, J. .. 435 0 0
 Kazak, L. .. 420 0 0
 Watt, A. E. .. 266 0 0
 Engineer-in-chief's revised estimate, £430.
 *Recommended for acceptance.

PLYMOUTH.—For repairs to heating installation at Ford School, for the corporation:—
 Sale, D. (accepted) .. £144 0 0

LIST OF TENDERS OPEN.

COMPETITIONS.

March 31.—The Mayor of Lymington's Roll of Honour and Memorial Committee invite designs and estimates for an obelisk to be erected in the borough in memory of local men who were killed or died from wounds received in the war. Designs and estimates, with full particulars, to Herbert E. Tizard, town clerk, Town Hall, Lymington, Hants.

March 31.—The Burial Committee of the Carlisle Corporation invite designs and estimates for a suitable memorial to be erected in the Carlisle Cemetery in memory of the men who have given their lives in the defence of the Empire and who have been buried in Carlisle cemeteries. Applications for further particulars to H. C. Marks, M.I.C.E., city engineer and surveyor, 56, Fisher Street, Carlisle.

April 12.—Messrs. Robert Ingham Clark and Co., West Ham Abbey, Stratford, E.15. Hundred-guinea design for Trade Mark. We gave conditions on p. 112 of our issue of February 12.

April 14.—Daily Express Competitions for best plans of houses and homes. One thousand guineas in the Professional Section for Architects and Amateurs. Five hundred guineas in the Amateur Section for Amateurs only. Designs to be sent to the Daily Express Office, 8, Shoe Lane, E.C., by 6 p.m. on April 14 next.

April 30.—Bristol Housing Committee invite designs from architects practising in Somerset, Dorset, Wilts, and Gloucester, for 5,000 workmen's dwellings. Premiums offered of £250, £150, and £50. Particulars of the City Engineer, 63, Queen Square, Bristol, on receipt of £1 1s. (returnable). Designs to be sent to Edmund J. Taylor, town clerk, the Council House, Bristol.

May 5.—The Borough of Ipswich invite designs for a working class suburb. Three premiums offered of 50 guineas, 30 guineas, and 20 guineas. Conditions and plan from the town clerk on payment of half a guinea (returnable). Designs to Will Bantoft, town clerk, Town Hall, Ipswich

BUILDINGS.

March 31.—Addition to gentleman's residence at Shanagarry, co. Cork, according to plans prepared by Messrs. W. H. Hill and Son, architects, 28, South Mall, Cork, to whom tenders are to be sent.

April 5.—Extensions to the sanatorium at High Carley, near Ulverston.—For the Lancashire Tuberculosis Committee.—Plans may be seen at the sanatorium and bills of quantities obtained at the office of the county architect, H. Littler,

16, Ribblesdale Place, Preston, by payment of £2 (returnable). Tenders to Harcourt E. Clare, clerk, County Offices, Preston.

April 7.—Construction of a brick boat-shed and store at the Institution Storeyard, Poplar, E.—For the Committee of Management of the Royal National Life-Boat Institution.—Bills of quantities, form of tender, terms and conditions of contract and specification may be obtained from the engineers, Messrs. Douglass, Lewis and Douglass, 15, Victoria Street, Westminster, S.W.1, on payment of £1 (returnable). Copies of the drawing will be supplied by the engineers on payment of £1 (not returnable). Tenders to the Secretary, National Life-Boat Institution, 22, Charing Cross Road, London, W.C.

RAILWAYS.

April 1.—Deviation of a portion (about a mile in length) of the St. Dennis Branch Railway, Cornwall.—For the Great Western Railway Company.—Plans and specifications may be seen, forms of tender and bills of quantities obtained, at the offices of the engineer at Plymouth North Road Station, between 10 a.m. and 4 p.m. Tenders to A. E. Bolter, secretary, Paddington Station, London.

Mr. J. S. Munce, the architect, has informed the Antrim Board of Guardians that, having gone into the question of the cost of the building of a new infirmary, he estimates the expenditure at £6,750. The matter was referred to a committee for an early report.

The Society of Architects is informed that the misunderstanding between the Housing Committee of the Birmingham City Council and the representative Associations of Architects with regard to the terms of this competition has been satisfactorily removed, and that the Housing Committee has extended the date for sending in plans until noon on Thursday, April 17, in order that architects desirous of competing may be enabled to do so.

We regret to announce the death of Mr. Robert O'B. North, architect, who died suddenly on Friday, the 14th inst., after a sudden heart seizure, at Messrs. Crittall's works at Braintree, at the age of fifty-four. Mr. North was articled to Messrs. Goldie, Child, and Goldie, and for years served as their chief assistant before practising for himself. He was responsible for the Rugby town hall, in conjunction with Mr. W. Hawke, and carried out several private works, all of a scholarly character.

Mr. Raymond Unwin, appointed one of the chief architects under the Government Housing Scheme, was for many years an active member of the Society of Architects, and from time to time contributed papers on the subject, of which he has made a special study. Mr. H. T. A. Chidgey, M.B.E., the Chief Surveyor, is a member of the society of many years' standing, and Major J. Wightman Douglas, D.S.O., R.E., the Commissioner for Cambridgeshire, is also a member of the society. He served with distinction in the recent war, and in addition to the D.S.O. he received the Serbian Order of the White Eagle.

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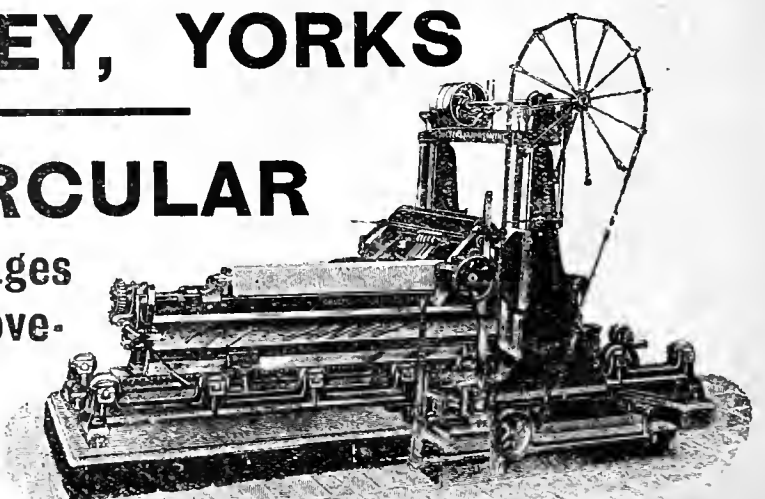
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THE INJECTION OF MORTAR UNDER PRESSURE.

A writer in the *Genie Civil* of February 19 last points out the necessity for rapid reconstruction of the structures destroyed by the enemy, and considers that apparatus for the injection of mortar should prove most useful. After a slight sketch of the history of the art, he describes the Greathead apparatus and then passes on to the recent French types, such as those by Perchot and by Baignet, which are well illustrated.

The Perchot apparatus can deal with eight tons of grout in ten hours, by means of a centrifugal pump of 40 m.m., running at 1,500 revs. per minute, and the pressure can easily be raised to 3.5 kg. The pump, however, rapidly wears out.

The Baignet apparatus comprises a reciprocating plunger pump, which itself works in pure water, but actuates a rubber membrane held between two concave perforated plates. The action of this membrane sucks and then forces the grout where required. About ten tons of grout can be injected in ten hours, and it requires about one kilowatt hour for power. It was found that considerable difficulty occurred when a grout of Seine sand and cement 1:1 were used, so a sand was procured from Clamart (Seine), which has served admirably. The article closes with a description of the Isambert apparatus, which employs compressed-air like the Greathead machine. The Isambert apparatus has done good service in repairing the damage done by the floods of 1910 to the pile foundations of the Passy viaduct upon the Paris Metropolitan Railway.

A few instances of costs per 1,000 k.g. of solid matter—sand and cement—ejected, neglecting the water, are given. With prices of Fr.72 per ton for Portland cement, Fr.60 for slag cement, and Fr.15 for Clamart sand, the cost with the Greathead apparatus was Fr.64; with the Baignet apparatus the cost was about Fr. 60; with the Isambert machine the cost varied from Fr.46 to Fr.53. Generally speaking, it may be said that the injection costs from Fr.50 to Fr.65 per ton of material injected.

THE HOUSING BILL.

The full text of the Housing Bill was published on Saturday last, and on the preceding day Dr. Addison gave a resume of its provisions to a meeting of Pressmen. He told the meeting that since the financial terms were announced early last month, local authorities have pushed forward their housing proposals, and the President of the Local Government Board was able to report the receipt to date of 460 applications for sites which will provide for some 80,000 or 90,000 houses. In addition, 104 schemes for laying out sites had been submitted, while ninety local authorities have sent in plans for houses. Progress since January is indicated by the fact that up to that date 343 local authorities had selected sites, 136 had acquired land, and fifty-two had prepared schemes in respect of houses. Dr. Addison professed his concern not as to any possible insufficiency of schemes but rather to shortage of men and material with which to execute those schemes.

Although there is enough with which to make a start, material is still a limiting factor. The question of skilled labour also causes anxiety, "We shall have schemes on hand for more houses than we shall have material and men for within the next twelve months," he said. While the need is far in excess of that figure, the President of the Local Government Board regards 300,000 houses as the limit of building possibilities within the near future. In the meantime, he has appointed Housing Commissioners in nine of the eleven areas into which England and Wales have been mapped out.

DUTY OF LOCAL AUTHORITIES.

The Housing Bill which the Government have in hand places on local authorities a definite obligation to survey the housing needs of their districts, and to carry out schemes for meeting those needs. Where the Local Government Board have any reason to suppose that a new scheme ought to be pre-

pared, they may give notice to the local authority to prepare one. If the authority fails to carry out its obligations, the Board may transfer its powers as regards housing to the county council, or the Board may act themselves. In either case the costs fall on the local authority. The same provision applies in the case of slum areas. Two or more local authorities may act jointly in the preparation of a housing scheme, and the Board may require a joint scheme where it is considered desirable.

In order to expedite the provision of new houses, local authorities will be given power to enter into possession of lands acquired for this purpose at fourteen days' notice after the compulsory purchase order has been made. The Bill will also meet difficulties caused by by-laws which would hamper the erection of houses on approved lines. It is proposed that any by-laws which are inconsistent with plans approved by the Board in a housing scheme shall not apply. As already announced, the Bill provides for the grant of financial assistance by the State for the erection of houses.

SLUM PROPERTY.

Dr. Addison says he attaches the utmost importance to the question of dealing with slum property and unsatisfactory houses. Hitherto, in thousands of cases closing orders have not been made for the reason that no other accommodation was available for the dispossessed occupants of insanitary dwellings. Furthermore, there have been considerable difficulties in the past, especially in London, as regards the cost of acquiring slum areas.

The new Bill contains special provisions as to the basis on which compensation is to be assessed. It is intended to secure that public authorities shall not be required to pay more than a fair price for the land and property to be acquired. The value will be the value of the land as acquired for housing purposes, and not as though it were purchased for the erection, say, of a factory. It does not follow that the same number of persons will be rehoused on the same site. Considerations of health will in many cases make this undesirable. In regard to slum property generally, procedure is to be simplified and financial aid given by the State.

WARNING TO LEASEHOLDERS.

Local authorities are to be given powers to acquire existing houses and to make such alterations as may be necessary in order to render them suitable as working-class dwellings. Nobody, said Dr. Addison last Friday, was enamoured of "slum-patching." At the same time, thousands of houses, especially in London, can be made suitable for occupation.

An important provision of the Bill relates to a leaseholder owning property in danger of degenerating into a slum, and who might not be disposed of or who might be too impatient to make the place habitable. In such a case the Bill empowered the superior landlord to re-enter and take possession. The idea was to arrest the decay of premises likely to become slums.

The Bill also provides for the conversion of houses into tenements. Power is to be given to a local authority to vary the terms of a lease which, while not preventing the conversion of a house into tenements, would render it impossible to effect the structural alterations necessary to secure proper sanitary arrangements for separate families.

PUBLIC UTILITY SOCIETIES.

The desire of many people to acquire their own houses will be encouraged, and the Local Government Board will welcome the formation of Public Utility Societies. Under the Bill financial aid will be given to such societies and to Housing Trusts. The Public Works Loan Commissioners will be empowered to grant loans to Utility Societies providing working-class houses up to 75 per cent. of the cost. Local authorities will also receive wider powers to assist Utility Societies.

As regards the purchase of dwellings by tenants, the recommendations of the Hob-house Committee have been adopted, and it

is proposed to amend the Small Dwellings Acquisition Act, 1899, so as to authorise local authorities to advance larger sums than at present to tenants who desire to purchase their houses.

SPEEDING UP TOWN PLANNING.

With a view to the orderly development of areas on the outskirts of towns, the Bill proposes to simplify procedure, and to enable local authorities on their own initiative to prepare town planning schemes without first obtaining the permission of the Central Authority. Coupled with this alteration, however, local authorities will be required to speed up their town planning schemes. Complaints are made that delay in the completion of schemes has held up the development of estates, and it is therefore proposed that the development of estates should be allowed to proceed meanwhile on lines which will not conflict with the main principles of the scheme.

NEW APPOINTMENTS.

In addition to the appointment of Sir James Carmichael, K.B.E., as Director-General of Housing, the following appointments have now been made:—

Deputy Director-General.—Mr. J. Walker Smith, M.Inst.C.E., F.S.I., formerly Housing Commissioner for Scotland.

Assistant Secretary.—Mr. E. R. Forber, C.B.E., of the Local Government Board.

Chief Architect.—Mr. Raymond Unwin, F.R.I.B.A., formerly Town Planning Inspector, Local Government Board.

Chief Surveyor.—Mr. T. A. Chidgey, M.B.E., Past President, Quantity Surveyors' Association, formerly Inspecting Surveyor, Ministry of Munitions, Quantity Surveyor to Metropolitan Police.

For the purpose of the schemes the country has been divided into eleven districts, to each of which a Housing Commissioner has been, or will at an early date be, appointed.

The following Commissioners have already been appointed:—

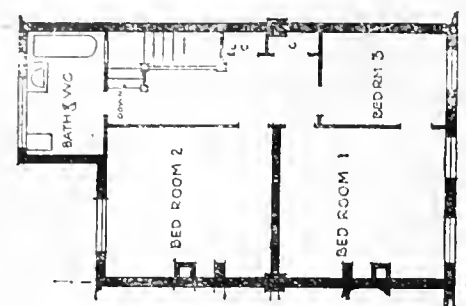
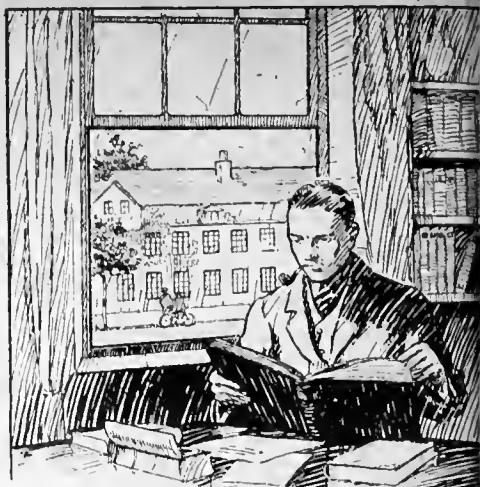
Region and Area.	Centre.	Commissioner.
1.—Cumberland, Northumberland, Westmorland and Durham	Newcastle	Major F. J. Edge, R.E., M.Inst.C.E. Was City Engineer of Newcastle-on-Tyne for four years
2.—Yorkshire (North, East and West Ridings)	Leeds	Mr. Tom Marr. Fourteen years on Manchester City Council
5.—Staffordshire, Shropshire, Warwickshire, Worcestershire, and Herefordshire	Birmingham	Mr. Henry E. Farmer, F.R.I.B.A. Was Resident Architect at Henbury for the Ministry of Munitions. For past two years has been Chief Architect to the Admiralty Control Board
6.—Parts of Holland, Kesteven and Lindsey (Lincolnshire), Nottinghamshire, Derbyshire, Leicestershire and Rutland	Nottingham	Mr. F. E. P. Edwards, F.R.I.B.A., F.S.I. City Architect of Sheffield for the past 10½ years, and previously City Architect of Bradford for eight years
7.—Gloucestershire, Dorsetshire, Somersetshire, Wiltshire, Devonshire, and Cornwall	Bristol	Lieut.-Col. E. N. Mozley, R.E. D.S.O.
8.—Hampshire, Isle of Wight, Southampton, Sussex East, Sussex West, and Surrey and Kent so far as not in the Metropolitan Police District	London	Mr. W. R. Davidge, F.S.I., A.R.I.B.A., A.M.Inst.C.E.
10.—Berkshire, Buckinghamshire, Oxfordshire, Northamptonshire, Bedfordshire, Huntingdonshire, & Hertfordshire so far as not in the Metropolitan Police District	London	Mr. F. M. Elgood, F.R.I.B.A., F.S.I. From 1904 to 1917 was a Member of the Ruislip-Northwood Urban District Council, on which he served as Chairman
11.—Cambridgeshire, Isle of Ely, Norfolk, Suffolk East, Suffolk West, and Essex so far as not in the Metropolitan Police District	London	Major J. Wightman Douglas, D.S.O., F.S.I., M.S.A. For 11 years was Lecturer on Building Construction at the Technical College, Newcastle-on-T.

The appointments to the other regions will be notified shortly.

THE GRAHAME-WHITE CO LTD HOUSING SCHEME.

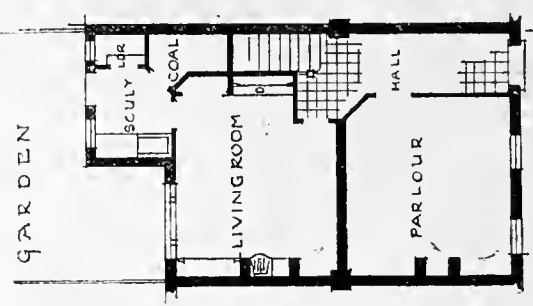


A CORNER OF THE QUADRANGLE.

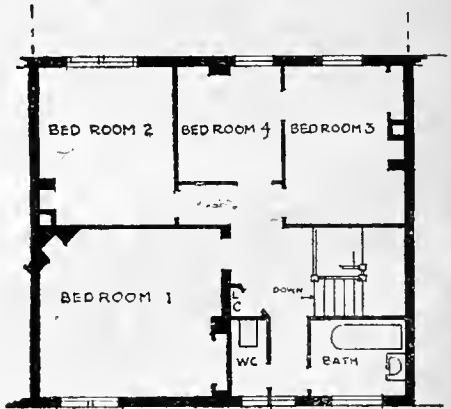
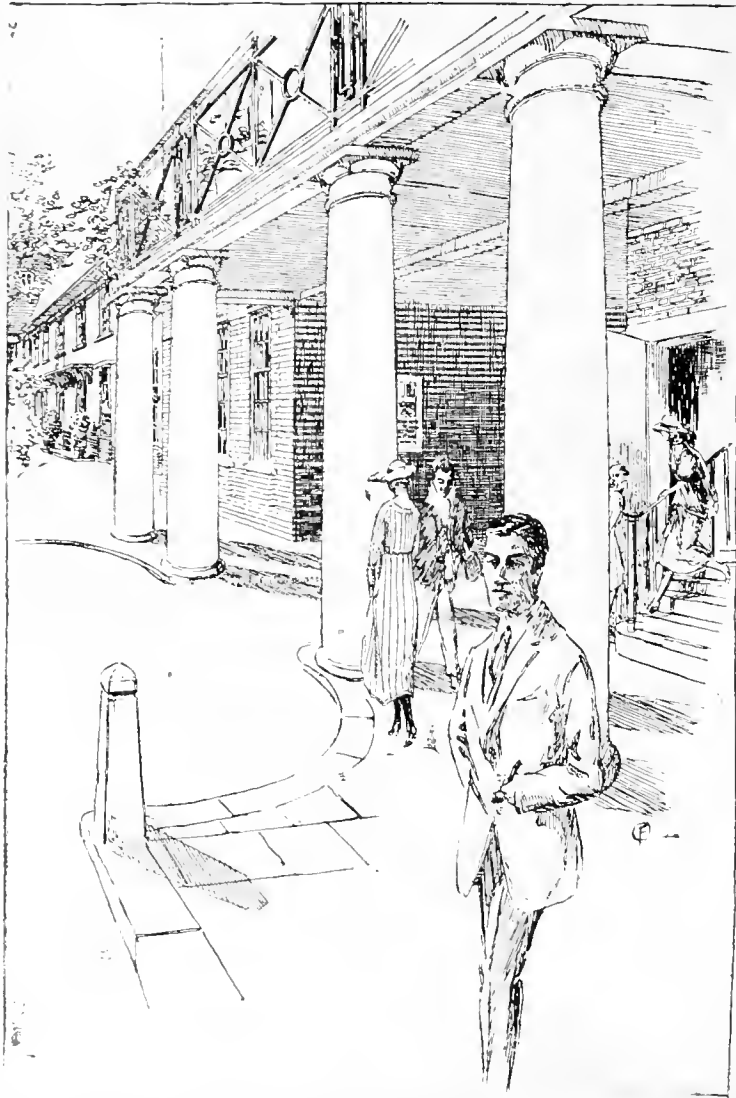


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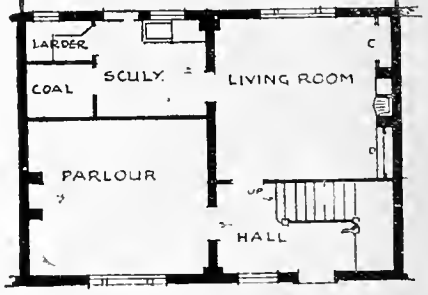


GROUND FLOOR



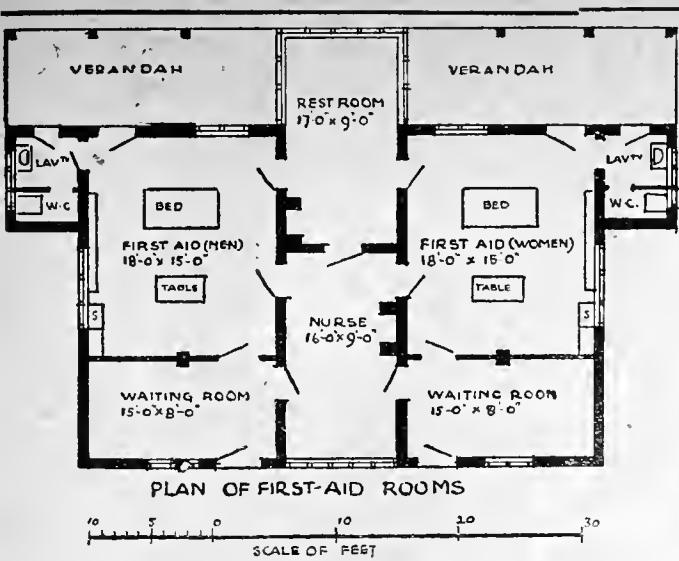
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GARDEN

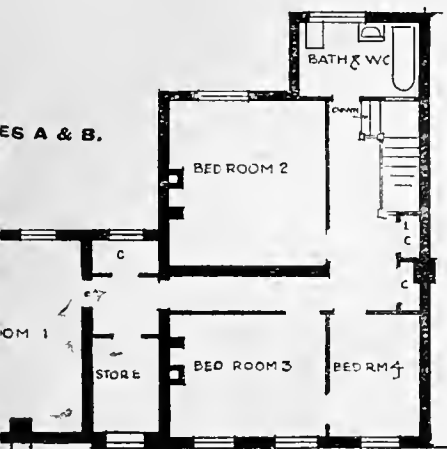


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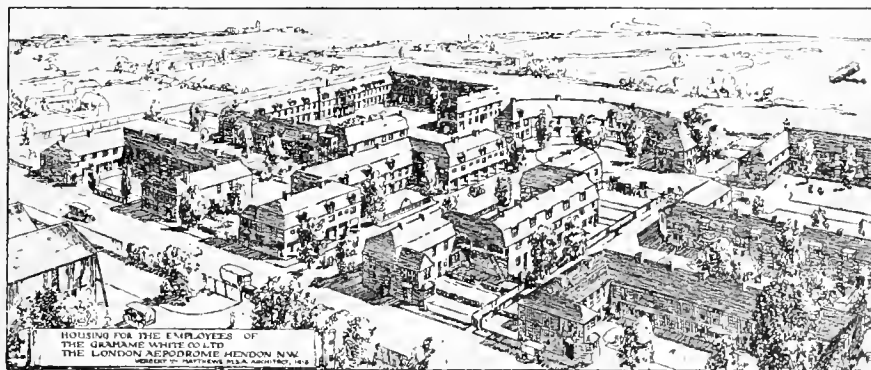


THE FIRST AID HOSPITAL.

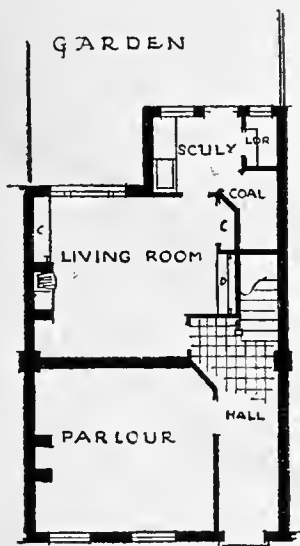


FIRST FLOOR

TYPE B.



A BIRD'S-EYE VIEW.



GROUND FLOOR



PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—The third meeting of the Association will be held in the Lecture Hall of the Edinburgh College of Arts, to-morrow (Thursday), at 7.50 o'clock p.m., Mr. T. P. Marwick, A.R.I.B.A., President, in the chair. A lecture will be given on "A Walk in Edinburgh with Ruskin" (illustrated by lantern slides), by Mr. W. Forbes Gray, F.R.S.E., F.S.A. (Scott.). Mr. Gray will deal with Ruskin's ancestral connection with Edinburgh, his debt to the city, his lectures on architecture and painting, Edinburgh as Ruskin saw it, and the practical bearing of his views on local aesthetic problems. A panegyric upon the castle rock will be followed and a protest against tampering with its contour. Other topics dealt with will be the New Town—Departed glory of Princes Street, and the fascination of George Street—Scathing comments on architecture of Edinburgh—"A wilderness of square-cut stone"—Lack of decorative art—Examples of Ruskinian perversity—Monstrosities of the Royal Institution—New College towers and the campanile of St. Mark's Venice—Ugliness of St. George's Parish Church—Our monuments—The "small vulgar Gothic steeple"—Where the Scott Monument ought to have been—and Ruskin's substitute for Kemp's design.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.—Enclosed within a large panel, surmounted by their decorations and surrounded by their regimental badges, the photographs of 38 members of the Nottingham and Derby Architectural Society who have been on active service during the war were unveiled on March 18 at the society's rooms in St. James's Street, Nottingham. Four of the number, Lieut. Kingsley Weston, Capt. Neville Pratt, Lieut. Wallace Smith, and Lieut. Eric Brown, have made the supreme sacrifice. Many have been decorated, amongst these being Mr. Claud Howitt, who gained the Italian Croix de Guerre, and Mr. T. C. Howitt, who, in addition to being made Lieut.-Colonel, was awarded the D.S.O. (with bar), and the Croix de Chevalier. No fewer than five others received the Military Cross. The printing of the names was executed by Lieut. H. P. Gill, while the Nottingham and Derby coats of arms were done in colours by Mr. H. W. Bagnall. Mr. F. M. Royle, the hon. secretary of the society, was the donor, and made an explanatory speech, after which Mrs. Gill, the wife of the president, Mr. Harry Gill, unveiled the memorial, the gift being accepted by Mr. Gill on behalf of the society. A series of lantern views of cathedral towns in France and Belgium, taken by Mr. A. E. Beilby, were afterwards shown, Mr. Gill supplying the verbal descriptions.

THE SURVEYORS' INSTITUTION.—Those interested are reminded that the Memorial Service to surveyors who have fallen in the war will be held at 3.15 p.m. on Monday, March 31, at St. Margaret's Church, Westminster. The council invite those who are not connected with the Institution, as well as members, to take this opportunity of showing their respect to those who have fallen. No tickets for the service are required. The Council of the Surveyors' Institution have been in correspondence with the Inland Revenue Commissioners as to the liability of surveyors to Excess Profits Duty. They have from the first taken up the attitude that surveyors were exempted from liability under Section 39 of the Finance (No. 2) Act, 1915, in which view they were supported by the opinion of eminent counsel. The position, however, was complicated by the circumstance that persons practising as surveyors not usually combine other forms of business, such as engineering, architecture, auctioneering, etc., with their more purely professional work, and the Inland Revenue Authorities claimed that commissions payable in respect of sales of property and the collection of rents were not exempted from liability. At a conference arranged with the Commissioners in which representatives of the Auctioneers and Estate Agents' Institute took part, it was pointed out that a large part of the remuneration in respect of the above descriptions of work was

payable for purely professional services, such as were covered by the exemption in the Act. While still holding the view that the Act was not intended to apply to any form of business commonly carried on by a surveyor, the representatives of the two bodies agreed that to secure a settlement of the question, in view of the temporary nature of the duty, and the difficulty of obtaining a decision in the Courts which would be generally applicable to all cases, it would be advisable to accept the compromise referred to in the following letter from the Board of Inland Revenue:—

EXCESS PROFITS DUTY.

Inland Revenue, Somerset House,
London, W.C.2, Jan. 21, 1919.

Sir, The Board of Inland Revenue have had under consideration your letter of November 20 last, on the subject of the apportionment of the remuneration derived from sales of land and the management of estates which might fairly be divided between professional and non-technical work for purposes of the computation of liability to Excess Profits Duty.

The proposal made by the Surveyors' Institution that a distinction should be made in connection with the remuneration for management of estates between urban and agricultural cases, is one which the Board do not feel able to accept.

They are prepared, however, to admit claims that in computing the liability to Excess Profits Duty of surveyors, auctioneers, etc., the receipts of the business, so far as derived from remuneration in respect of sales of land (including advice, etc., upon the sale and in respect of rent collection combined with estate management), should be regarded, except in cases where such a course is manifestly inequitable, as attributable equally to professional and non-professional work; and that the moiety of such receipts, which is attributable to work of a professional character, should be excluded from the computation of liability throughout, both in pre-war and accounting periods alike.

I am to inquire whether this proposal is agreeable to your Institution.—I am, Sir, your obedient servant,

(Signed) J. SNELLGROVE.

CHIPS.

The building and equipment of a library is to be the war memorial at Armstrong College, Newcastle-on-Tyne.

In connection with the proposed housing scheme for Helensburgh, Mr. George Paterson, architect, has been appointed advisor to the town council.

It is proposed to carry out extensions to the Tynemouth Infirmary at an estimated cost of £40,000. The architects are Messrs. Cachett and Burns Dick, Newcastle-on-Tyne.

The Bishops Castle Town Council is negotiating with the owners of various sites for a housing scheme. Mr. R. Parry has been engaged as architect to prepare the plans for submission to the Local Government Board.

It was stated at a meeting of Bermondsey Borough Council that the works of the clock in St. James's Church had been stolen. Councillor Dr. Richmond expressed pleasure at the announcement, adding that a public clock, if not properly looked after, was a delusion and a snare.

Hogarth House, No. 75, Dean Street, Soho, has been sold by Mr. Frank Newman. Sir James Thornhill, the painter, lived there for a considerable period, and some of the decorative work in the house is attributed to him and to Hogarth. Another artist, E. H. Baily, R.A., sculptor of "Eve at the Fountain," was living in the house in 1821.

The next ordinary general meeting of the Surveyors' Institution will be held in the lecture hall of the Institution on Monday, March 31, 1919, when a paper, entitled "Building Contracts Before and After the War, and the Functions of the Quantity Surveyor," will be read by Mr. John W. Hurrell (Fellow). The chair will be taken at 5 o'clock.

The Special Committee of Glasgow Corporation on Housing and General Town Improvement has approved plans by the City Engineer for houses proposed to be built at Coplawhill, Kennysill, Riddrie, and Blackhill. Mr. Nisbet was authorised to submit the plans to the Local Government Board, and meantime to proceed with the construction of the roads and sewers necessary.

Our Office Table.

Lecturing before the members of the Royal Geographical Society upon mapping from air photographs, Lieut.-Col. M. N. McLeod, D.S.O., R.E., said that owing to the experience gained in the war very little development was required to give us the power not only of preparing from air photographs complete and accurate large scale maps of civilised and highly developed regions, but also of obtaining reasonably accurate maps of unexplored regions at present untouched and inaccessible to any but the explorer. For accurate work we could not, of course, dispense with the surveyor altogether, and in hilly country, until we could devise some satisfactory form of stereo-plotter, the air photographs would not help us very much. There did not, however, seem to be anything to prevent us making such an instrument, and when this was done it should be possible to map steep, hilly regions, at present difficult to survey on account of the difficulty of getting about in them, very cheaply and quickly indeed. The aeroplane was already a valuable instrument for both exploration and accurate survey in flat country, and it should not be long before its application would be almost universal.

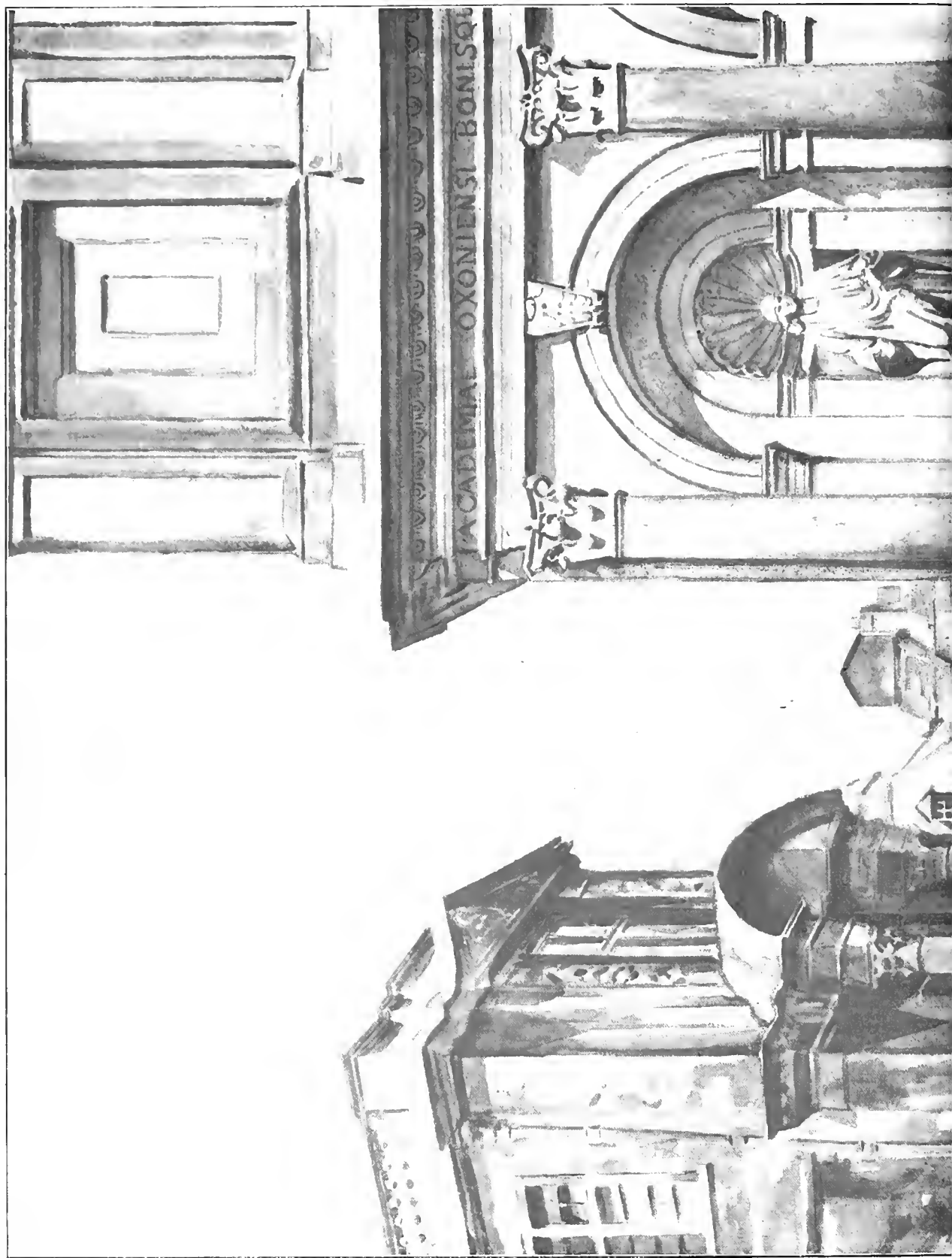
At Holy Trinity Church, Windsor, where the Guards attend when stationed in the borough, a committee has been formed to carry out a suitable memorial to all who fell in the war. Owing to the numbers it will be impossible to have each name written on the church walls as was done in the case of those Guardsmen who fell in the Crimean and Boer wars; but they are to be inscribed in two albums—one for the cavalry and one for the infantry. The main memorial, however, will be the provision of a new altar and reredos, and the beautifying of the chancel of Holy Trinity Church. For thus subscriptions are invited from all friends and relatives of fallen Guardsmen. They may be sent to the hon. treasurer, Colonel the Hon. G. Crichton, Castle Hill House, Windsor, or to the Rev. H. Tower, M.V.O., Holy Trinity Rectory, Windsor.

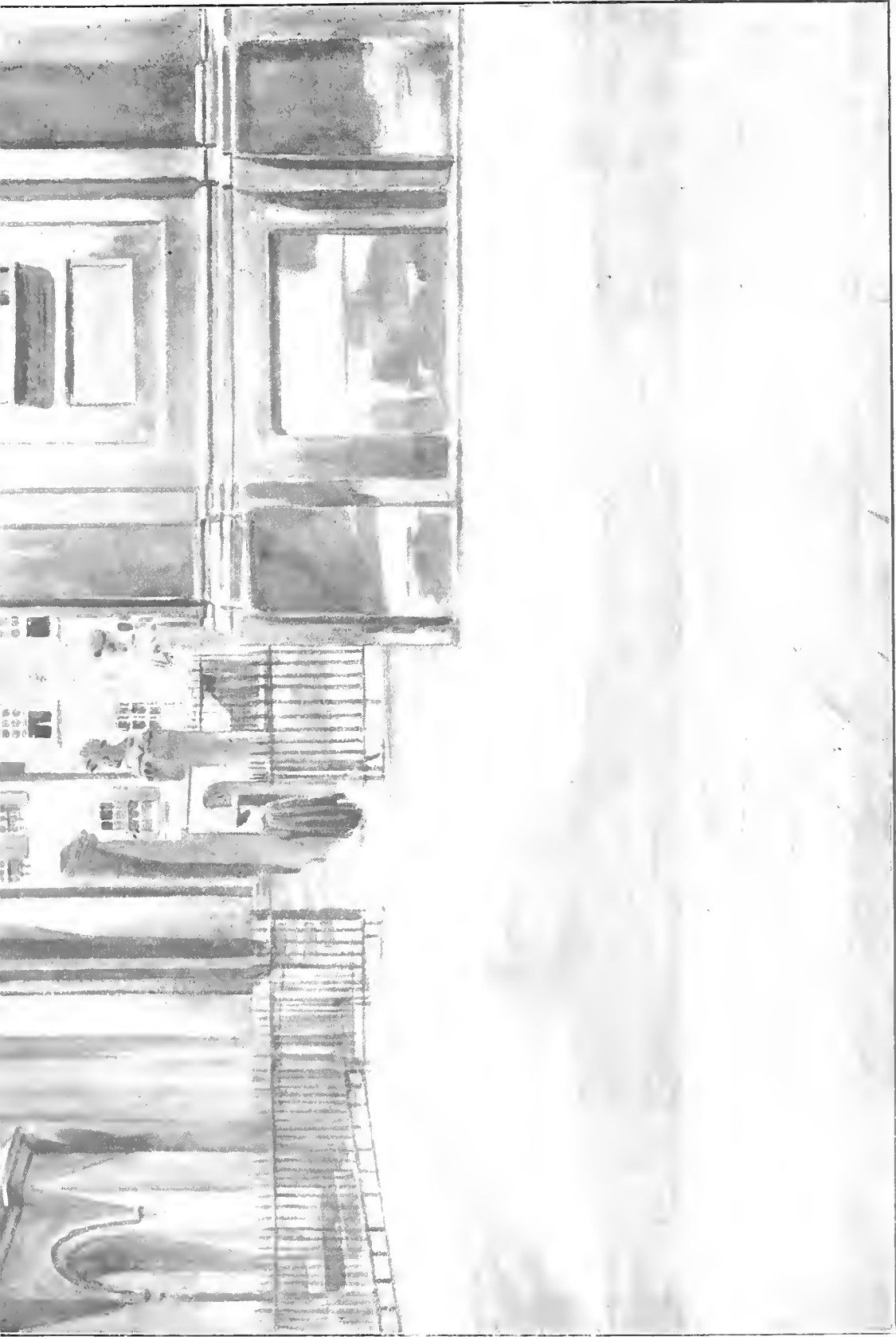
The Finance Committee presented a report to the London County Council at yesterday's meeting, in which reference was made to the restriction of capital expenditure. An intimation was received from the Treasury last November that the restrictions on capital expenditure which had operated during the war would have to be continued for some time. The various spending committees of the Council were requested by the Finance Committee to furnish statements of works which ought to be undertaken at once, and the estimated cost of the works proposed was about £2,850,000. The Treasury, when approached, replied that no objection would be raised to the insertion in the forthcoming Money Bill of the Council of the sum named, but directed that they must be consulted before commitments were actually entered into, and furnished with evidence of urgency. They were willing to except from this requirement the proposed expenditure on housing (£374,000) and the New County Hall (£350,000), and any main drainage expenditure which the London County Council were satisfied was urgently required on grounds of public health.

Replying to Lieutenant-Colonel Sir J. Hope (Co. U., Midlothian and Peebles), Mr. Kellaway (Joint Parliamentary Secretary and Deputy Minister of Munitions) said last Thursday that it was proposed, within the next few days, to lay on the table of the House a list of the firms that have been guilty of misconduct in connection with contracts for war material during the war.

It was decided at a meeting of the Kent War Memorial Fund Committee, last Saturday, that the memorial to the men of the county shall be erected at Canterbury. The site chosen is the bowling green facing the east end of Canterbury Cathedral. The proposal is to erect a monumental cross in the centre of the green, and, if funds permit, cloisters at the sides to connect with the two ancient walls. Fifty thousand pounds is being appealed for; £3,580 has already been subscribed.

THE BUILDING NEWS, MARCH 26, 1919.





THE OLD ASHMOLJEAN BUILDING, OXFORD, A.D. 1682.
Water Colour Drawing from the Exhibition of the Royal British Artists by Mr. S. S. WALTER TYRWHITT, M.A., R.E.A.



THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

Wells Cathedral. View of the Undercroft or "Crypt." Water-colour drawing by Mr. Walter S. S. Tyrwhitt, M.A., R.B.A., from Royal Society

Strand, W.C.2

of British Artists' Exhibition, E. Van Alstyne Galleries.

New Parliament Building, Winnipeg, Manitoba. Working drawing section as executed. Mr. Frank Simon, F.R.I.B.A., Architect.

An American Civic War Memorial, City of Boston. Views of the exterior and of the auditorium, with plan. Mr. Frank Chouteau Brown, Architect.

Currente Calamo.

Contractors and builders are interested in the legal question as to what amounts to "extraordinary traffic" upon roads, because of the liability they may incur to contribute to their repair by the local authorities. There have been many decisions under the Act of 1878, which are not always enlightening. But the judgment of the Court of Appeal in the recent case of "Weston-Super-Mare Urban District Council v. Henry Butt and Co. (Ltd.)," does give some little guidance on a practical point. The council had claimed £1,750 from the defendants as extraordinary expenses incurred by them in repairing roads by reason of the damage done through the excessive weight passing over the highway through the haulage of stone from defendant's quarries. Mr. Justice Eve had found in favour of the plaintiffs, and had given them £280 in regard to the twelve months before action. The Court of Appeal now held that, although the council was bound to provide and repair roads for ordinary traffic, it was not obliged to do so for what was really extraordinary. The facts showed that the defendants had of later years changed their methods of haulage. Formerly they had carried material in horse-drawn carts, which, when loaded, weighed about three tons. Then they used steam waggons and trailers, which, when loaded, gave a total of 20 tons. This new mode of transport damaged the roads, and the Court now held that the defendant's traffic had so become "extraordinary" within the meaning of the Act. Therefore defendant's appeal was dismissed. But it would seem from the judgment that, when the use of such tractors becomes common on similar roads for heavy transport in the way of trade, it will cease to be "extraordinary" in this legal sense!

A series of observations and recommendations on war memorials has been prepared by the Advisory Committee appointed under the auspices of the Royal Scottish Academy with the object of affording advice and assistance to local bodies in Scotland who have such memorials under consideration. The Advisory Committee urges upon all who have memorial projects in hand to avoid anything like haste and pressure in order to secure

immediate fulfilment of their wishes. When a committee has secured the services of an artist he should receive full consideration in the matter of the time for delivery of the work entrusted to him. Such work is to last for centuries, and it would be unfortunate if, through undue pressure, the artist were unable to do justice to his design. It is desirable that the monuments, like the songs of a country, should be expressive of the life of the people. Therefore, wherever it is reasonably possible, Scottish war memorials should be entrusted to native artists and executed in Scotland. In designing a memorial respect should be paid to local traditions, characteristics, and materials when these are of a satisfactory quality. Provided that these considerations be kept in view, the utmost catholicity of expression should be permitted to the artist, and so long as the spirit evoked expresses the purpose of the memorial no limitation need be imposed on his freedom. The committee make definite and specific suggestions on various classes of memorial, including simple monuments of the pillar type, which might take the shape of the unhewn upright stone, such as those with early Christian inscriptions in Galloway; "the doorway motive," which may include architectural monuments ranging from a colossal arch of triumph to the simple lych-gate of a country churchyard; the fountain; the stone seat, which offers opportunities to the designer who knows how to combine architectural dignity with simplicity; the chapel, undoubtedly the noblest form the architectural monument can assume; mural painting; mosaic work; and stained glass. Lists of artists and architects in various departments are given for the guidance of the local committees.

The revised scheme for a City War Memorial was placed before a town's meeting at the Council House by the Lord Mayor of Birmingham last Thursday and unanimously adopted. The scheme provides for the erection of two buildings—a Hall of Memory, a building symbolising sacrifice and service, and near it a City Hall, to fulfil the purpose of a centre of civic life and social intercourse. The estimated cost of the buildings is £300,000, and this sum it is proposed to raise by public appeal, while the Corporation will provide a suitable central site. The Hall

of Memory is intended to commemorate the great events through which we have passed, and to symbolise the achievements of the men and women of Birmingham during the war, especially of those who have made the great sacrifice. It is believed that the object in view will be best accomplished by the erection of a well-proportioned and beautifully decorated chamber, not necessarily of great size, in which the Roll of Honour would be suitably enshrined. The whole is to be in a suitable open space, and the memorial, while taking its place in front of the larger civic building, will in no way compete with the latter, but on the contrary add greatly to the significance and beauty of both. It is estimated that the Hall of Memory would cost not less than £85,000, and the lay-out and provision for statuary £15,000. It is proposed that the seating accommodation in the City Hall should be for 3,600 people (50 per cent. more than the present Town Hall), including provision for an orchestra of at least 100 and a chorus of 350, with suitable crush halls, saloons, promenades, platform assembly hall, retiring rooms, and grand organ. On the basis of current prices, the cost of this hall would be £200,000, making a total of £300,000 for the buildings.

At last we are glad to see the authorities are taking in hand seriously the work of removing the unsightly remains of the war posters which still disfigure London. Even the City of London has divested Sir Robert Peel of his fore and aft adornments, and cleaned down the Griffin, which for some Sundays was fly-posted with the posters about the boxing matches. May we hope that the Government will not find it necessary to continue the system of poster advertisement, and not outrage good taste after the fashion of some of the things we have had thrust on us during the last four years. Presently a collection of war posters will make an interesting exhibit in the National War Museum, and appeal, sometimes pathetically, sometimes ludicrously, sometimes amazingly to our descendants, but their tattered and soiled appearance on our walls is certainly not edifying.

The la-di-da ladies and gentlemen who swarm in the snug offices in White-

hall and other congested central London districts are said not to welcome the "official" announcement of their intended removal "some miles distant," to some such eligible neighbourhood as Tooting, Fulham, or Walthamstow, where they are to be housed in "semi-permanent" edifices, fit for habitation "for the next fifty years or more." The first emigrants are understood to be the staffs of the Pensions Ministry and the War Office, and other Departments are to follow suit. Then, perhaps, the "palaces and piles stupendous" at Whitehall in which the lordly inmates dirt and fozzle will be left to crumble into decay, "of which the very ruins are stupendous," till the last specimens of official do-littles have become extinct in the happy days to come when Slough has become a dim memory, and Chepstow a forgotten freeze-out, and the picturesque "semi-permanents" have been utilised as rabbit-hutches, usefully tenanted by sleek habitans reminiscent of their prehistoric predecessors, whose admirable imitations of the bunny-lug have atoned for their unprofitable hunger and uselessness.

Those of us who have been "saving daylight" this week at one end of the day and missing its diminution at the other in the return to the dim mornings of a month ago will have consoled themselves with the news that the Canadian Dominion has decided, in response to the objections raised by members of all classes, to discontinue the maddest craze of modern times. Invented by the late Mr. Willett, not impossibly as an ingenious self-advertisement, and sponsored by that feather-brained politician, Mr. Churchill, it found favour with the feeble faddists of all sorts, and was forced down our throats by a Parliament which posterity will rank with the most futile with which our annals are burdened. The suffering majority of sane people will be encouraged in their tacit opposition to this piece of foolishness, and, we trust, will redouble their efforts to bring about its abrogation. The sooner the better for all of us who have suffered in health and pocket, and who will ever be grateful that Canada has led the way back to a regard for natural time and the benefits attached to its observance.

Good anti-corrosive paint is not dear, but if the sanitary authorities of St. Pancras, or whoever else is responsible, can only afford tar, they might at least white-wash out for a while the usual notice to "adjust your dress before leaving" and substitute "Tar your trousers while you wet." One disreputable urchin in Ossulston Street, N.W., outside the Midland goods station, is at present best avoided till the plentifully dandied iron basins are dry.

The Edinburgh Town Council have decided to give an increase of 82½ per cent. to the builders in connection with the building of the electricity station at Portobello. In 1916 the accepted tenders for the building work, amounting to £19,400, were Messrs. James Millar and Sons; steelwork, Messrs. Redpath, Brown and Co., £11,170.

TESTS OF THE WEARING RESISTANCE OF CONCRETE.

The neglect to arrive at more than a rule of thumb estimate of the wearing resistance of concrete, especially when used for floors, platforms, and other surfaces demanding high resistance to impact and abrasive stresses too frequently is followed by speedy decay, for which the cement maker gets blamed when the fault is really the result of the ignorance or carelessness of the contractor, and the necessity for more complete information concerning the factors which affect the wearing resistance of the material is too often apparent. Some careful experiments have been made for some time under the direction of Professor Duff A. Abrams, the director in charge of the Structural Materials Research Laboratory of the Lewis Institute, Chicago, a short résumé of which can hardly fail to be useful.

With cement meeting standard specifications and high-grade aggregate mixed in definite proportions, the maximum resistance to wear can be secured by the following methods:—

(1) Reduce the mixing water to the smallest quantity which will produce a workable concrete;

(2) Provide proper curing conditions so that concrete will not dry out too soon or be injured by traffic before thoroughly hardened;

(3) Thoroughly mix the concrete.

Too much emphasis cannot be placed on the fundamental importance of proper control of mixing water. In many instances a large proportion of the cement is simply wasted, due to the use of too much water in the concrete. The tests made have shown that in a 1-sack batch each pint of water more than necessary lowers the strength of the concrete and its resistance to wear, the same as if we should omit 2 or 3 pounds of cement. The "sloppy" mixes frequently seen in floor and road construction may give concrete of less than one-half the strength and resistance to wear that should be secured at the same cost if proper care were given to proportioning the water.

It is impracticable to state in general terms the exact quantity of mixing water which should be used, since this depends on several factors, such as quantity of cement, kind, size and grading of aggregate, moisture contained in aggregate, etc. For the mix generally recommended for use in road construction, that is, 1 volume of cement to about 4 volumes of mixed aggregate (aggregate graded up to 1½ or 2 inches), the water necessary to produce a workable mix will vary from 5½ to 6 gallons for each sack of cement. Other factors being the same, the full utilisation of the cement in the concrete depends entirely on the use of the smallest quantity of mixing water which will produce a concrete of satisfactory plasticity.

Increasing the quantity of cement in the concrete or improving the grading of aggregates is effective in increasing the resistance to wear only so far as we are enabled thereby to reduce the quantity of water as compared with the cement in the mix.

Ample moisture during the curing period is second in importance only to the use of a proper quantity of mixing water. The tests show that unfavourable curing conditions produce exactly the same effect as too much mixing water. However, the former factor is not at present subject to the same abuse as the latter. Many floor jobs are ruined, due to failure to supply moisture for a few days after placing the concrete. A good rule to follow is to mix with the smallest quantity of water that

will produce a plastic concrete, then supply as much water as possible for curing.

The concrete should be mixed in a batch mixer for a full minute after all materials are in the drum. The resistance to wear is materially lowered by undermixing. There is no danger that concrete will be mixed too long. However, it has been clearly shown that no reasonable increase in the mixing period will counteract the ill effects of too much mixing water.

Wear tests of concrete were made in the Talbot-Jones rattler. The test pieces consist of blocks 8 inches square and 5 inches thick. The blocks are arranged around the perimeter of the drum of the rattler; the ten-side polygon formed by the test blocks presents a nearly continuous surface. The outside diameter of the polygon is 36 inches and the inside diameter is 26 inches. During the test the front of the chamber is closed by means of a steel plate. The abrasive charge consists of 200 pounds of cast-iron balls (about 133 1½ inches and 10 3¼ inches in diameter).

The test consists of exposing the inner face of the concrete blocks to the wearing action of the abrasive charge for 1,800 revolutions of the drum at the rate of 30 r.p.m. The machine is run for 900 revolutions in one direction, then reversed. Duplicate rattler heads enable a test of two sets of blocks at the same time. For research work in studying the effects of varying proportions and consistency of the concrete, each block is made from a small batch of hand-mixed concrete. The specimens are moulded in metal forms and finished with a wood float. Each block is weighed immediately before and after testing. The loss in weight is used as a measure of the wear. This loss is reduced to an equivalent depth of wear in inches.

Tests are now under way which are expected to bring out the relative merits of different aggregates for use in the construction of concrete floors, walks and roads.

Our Illustrations.

THE UNDERCROFT, OR "CRYPT," WELLS CATHEDRAL.

This beautiful and interesting octagonal building, though often spoken of as the Wells Crypt, is perhaps more correctly described as the Undercroft of the Chapter House. Its most marked feature is the great central column that supports the middle pier and vaulting, as well as the floor of the Chapter House immediately above it. The crypt is also often called the "Treasury." Until recently it was, however, used as a coal cellar. It now is in good order and fairly well cared for. It contains a curious collection of fragments of architectural detail such as often accumulate and gather around so large and ancient a cathedral as that of Wells. Of these is the statue, indistinctly seen through the gloom, set against the wall on the right of the doorway. This is a detached figure, possibly taken from a niche during some restoration—probably when the statues of the west front were revised. Its present position is of the greatest value to the picture. The doorway in the centre of the view leads through a vaulted chamber into the cathedral. We are indebted to Mr. S. S. Walter Tyrwhitt, M.A., R.B.A., for the loan of this watercolour, which was shown recently by the Royal Society of British Architects during their autumn exhibition, held in the galleries of the Royal Academy.

NEW PARLIAMENT BUILDING, WINNIPEG, MANITOBA.

During the past two weeks we have given the plans and working drawings of this national work, now nearing completion, from the designs of Mr. Frank Simon, F.R.I.B.A., of Winnipeg. To-day we conclude the series of our illustrations by publishing the main longitudinal section showing the entrance hall, central hall under the cupola, and the assembly chamber beyond. Behind the great portico on the north is the grand reception room immediately over the front entrance hall, the Treasury Department being to the left and the Attorney-General's Department to the right.

AN AMERICAN CIVIL WAR MEMORIAL, CITY OF BOSTON.

The proposed "Liberty Memorial" at Boston is designed to amplify the "Community Centre" idea on metropolitan proportions. The plan here given shows as the main feature a great auditorium 230 ft. by 140 ft. The floor space is 150 ft. by 80 ft. This great hall opens on to the communicating cross "Corridor of the Allies," terminating at one end in the "Hall of the Army" and at the other with the "Hall of the Navy." Opening from this same corridor is a series of top-lit galleries, each being allotted to a racial group of foreign-born Americans within the community and their individual halls are to be used by them as a distinct meeting place. These rooms are, however, to be open at all times to the public as an educational feature, because separate and distinctive exhibitions of their national art are intended in each section. The Massachusetts Hall (150 ft. by 65 ft.) is provided for banquets, military dances, and for convention purposes, as well as for gatherings of war veterans. A Memorial Pantheon is approached through the portico of the principal facade. The Music Theatre on the left is entered from the rear street, and is intended for chamber music, Greek plays, and graduation exercises. This circular Pantheon is actually intended for a "State Memorial" and a "Hall of Flags," free, therefore, from superfluous sculpture and decoration. The "Hall of Nations" is devised to symbolise the "League of Nations." It is not contemplated or even desirable to complete this great scheme at one time, and therefore space for extensions is reserved, as outlined by the plan. Mr. Frank Chouteau Brown is the architect. [We are indebted to the *American Architect* for these views and plan.]

COMPETITIONS.

BOROUGH OF IPSWICH COMPETITION FOR MODEL DWELLINGS.—CITY AND COUNTY OF NEWCASTLE-UPON-TYNE LAY-OUT SCHEME FOR HOUSING.—The Competitions Committee of the Royal Institute of British Architects request members and licentiates of the Institute not to take part in the above competitions until a further announcement is made that the conditions have been brought into conformity with the Institute regulations for the conduct of architectural competitions. Members of the Society of Architects are also requested not to take part in these competitions without first ascertaining from the secretary of the Society whether the conditions have been approved by the Council.

At the last meeting of the Barnstaple R.D.C. the clerk reported that Mr. J. C. Southcombe, architect, had prepared three plans of suggested houses to be built under the new housing scheme. The council appointed a committee to confer with the architect and with the Housing Commissioner for the district when appointed.

TESTS FOR HOLLOW BUILDING TILES.

By BERNARD D. HATHCOCK and EDWARD SKILLMAN.

Originally hollow building tile was used mostly for its fire-resisting properties, but, as its other advantages have become more generally recognised, its range of usefulness has been greatly broadened until to-day it is an important structural material. And, as a consequence of the rapid growth of its use and the relative lack of definite and reliable information of its strength, these tests have been made by the U.S. Bureau of Standards.

Tiles are moulded of clays which are quite diversified in their properties, and, after drying, are burned in downdraft kilns at a temperature well beyond initial vitrification of the clay, but rarely high enough to complete vitrification. These methods introduce variables, especially of colour and porosity, which are of great importance because of their relation to the strength properties of the tiles, and have been given consideration in the classification of the tiles of these tests. It is a well-known fact that in a downdraft kiln the upper courses of the tiles are heated to a higher temperature than the lower ones. This gives the top tile a higher degree of burning, those near mid-height a medium degree of burning, those near the bottom a low degree of burning. In general, the high burned tiles are dark in colour, the medium burned of medium shade, and the low burned light. However, this is not always true, for the natural colour of some clays or the presence of colouring matter will cause a variation.

The tests are limited to those of compression and absorption. The total number of those performed is approximately 250, of which the majority were upon tiles in compression. Stress-strain readings were taken upon 114 of these for modulus of elasticity determinations. About 70 absorption tests were made upon samples taken from tiles previously tested in compression. All the tiles were graded according to their colour, as dark, medium, or light corresponding to the variations produced as described above. The tiles tested were made with few exceptions from clay of the buff-burning variety, and the colours given indicate variations in the buff colour.

Previous to testing the tiles, their sectional areas and weights were determined. The former was done by measuring the walls and partitions with calipers and computing the sectional area from these measurements. Then they were capped with plaster of paris to insure a uniform bearing in the testing machine. Small brass plugs were also set in some of the tiles for compressometer readings. The type of compressometer used was the 3-inch Berry strain gauge, and readings were taken with it near the four corners of every tile upon which stress-strain relations were desired. The testing machines used were of the Olsen universal type.

The absorption tests were made upon three samples selected from each tile upon which the absorption determination was desired. The tiles from which these samples were taken had been previously tested in compression.

The results of the compression tests with moduli determinations show that the strain produced by loading a tile is approximately a linear function of the applied load until failure is approached, or, in other words, the modulus of elasticity of a tile is practically constant until failure. This indicates also that there is no definite proportional limit for tile; that is, the proportional limit is coincident with failure.

Tiles were tested on end, on edge and flat, and the results show that in general a tile develops both the greatest unit strength and greatest total strength when it is laid on end. The relation between the moduli of elasticity of tiles and their compressive strengths is somewhat variable, or the tile having the highest modulus of elasticity may not have the greatest strength, but in general if the modulus is high, it is to be expected that the compressive strength will also be relatively high.

There was found to be no definite relation between the loads at the incipient failure and the maximum loads sustained by the tiles. In some cases the incipient failure occurred early

in the tests, but in other tests no notice of failure was observed until the maximum loads were reached.

There is shown to be a relationship existing between the colours of the tiles and their compressive strengths and the moduli of elasticity. The dark and medium burned tiles have about the same relative compressive strengths and moduli of elasticity, while the same properties of light burned tiles are on an average much lower.

From the results of the absorption tests it was found that the maximum compressive strengths vary approximately inversely with the percentages of absorption. Also the percentage of absorption of the tiles vary with their colours. In general, the darker the tiles the lower the percentages of absorption are likely to be, but this is not always true because either the material or the artificial colour of the tiles may often be deceptive in this respect.

HOUSING: GOVERNMENT ASSISTANCE TO PUBLIC UTILITY SOCIETIES.

A memorandum has been issued by the Local Government Board which gives in detail the terms of financial assistance offered by the Government to public utility societies for housing purposes.

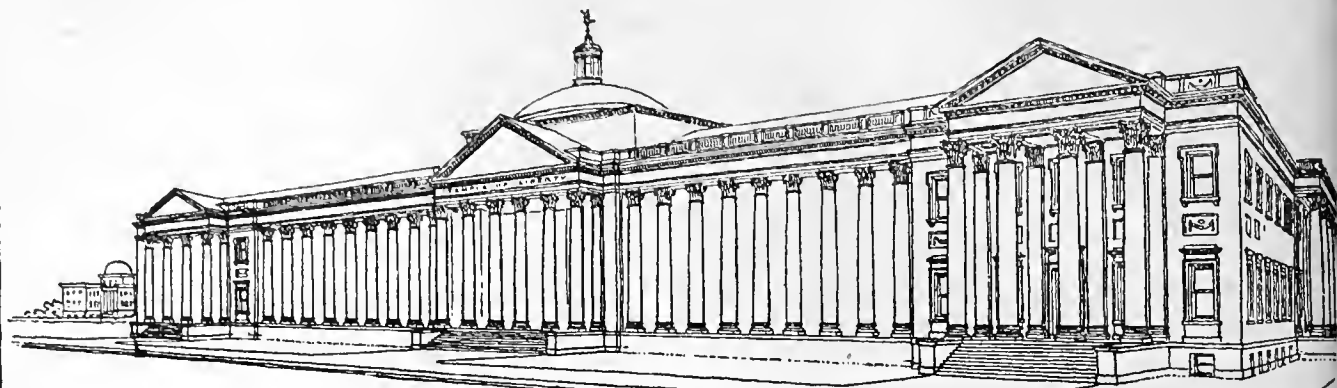
Any bona fide public utility society whose objects include the provision of houses for the working classes, and which complies with the conditions laid down, may receive the Government assistance in respect of approved housing schemes. A public utility society for housing may be formed by any seven or more persons. It must be registered under the Industrial and Provident Societies Act, 1893; and the holding of any one member in shares must not exceed £200 (but this limit does not apply to loan stock). At present the rate of interest or dividend payable by a society must not exceed 5 per cent.; in view of the increase in the general rate of interest, it is proposed in the Housing Bill to raise the limit to 6 per cent.

The assistance which is offered falls under two heads—loans and subsidies. Many societies may be able to raise a large part of their capital from private sources as cheaply, or perhaps more cheaply, than they can borrow from the State. Where this is not so, State loans (repayable in fifty years) will be advanced up to a maximum of three-quarters of the total cost of the society's housing scheme. Whether the money is borrowed from the State or raised privately, a subsidy will be granted of an amount equal to 40 per cent. of the charges for interest and repayment of principal of three-quarters of the total capital. Suppose the capital cost of an approved scheme is £40,000, and that the society has borrowed the maximum (that is, three-fourths of the capital, £30,000) from the Government. Taking the rate of interest at 5½ per cent., and allowing for the repayment of capital, the annual payment for loan charges to be made by the society will be approximately £1,770 per annum. The Government subsidy will then be 40 per cent. of this—that is, £708 a year—leaving the balance and the charges on the privately subscribed capital to be met out of the rents.

The Memorandum is issued as a Parliamentary Paper, price one penny, and can be had through any bookseller and the Government Stationery offices.

Captain Stanley J. Hellyer, Royal Engineers, has been appointed assistant surveyor to the Aberavon Town Council.

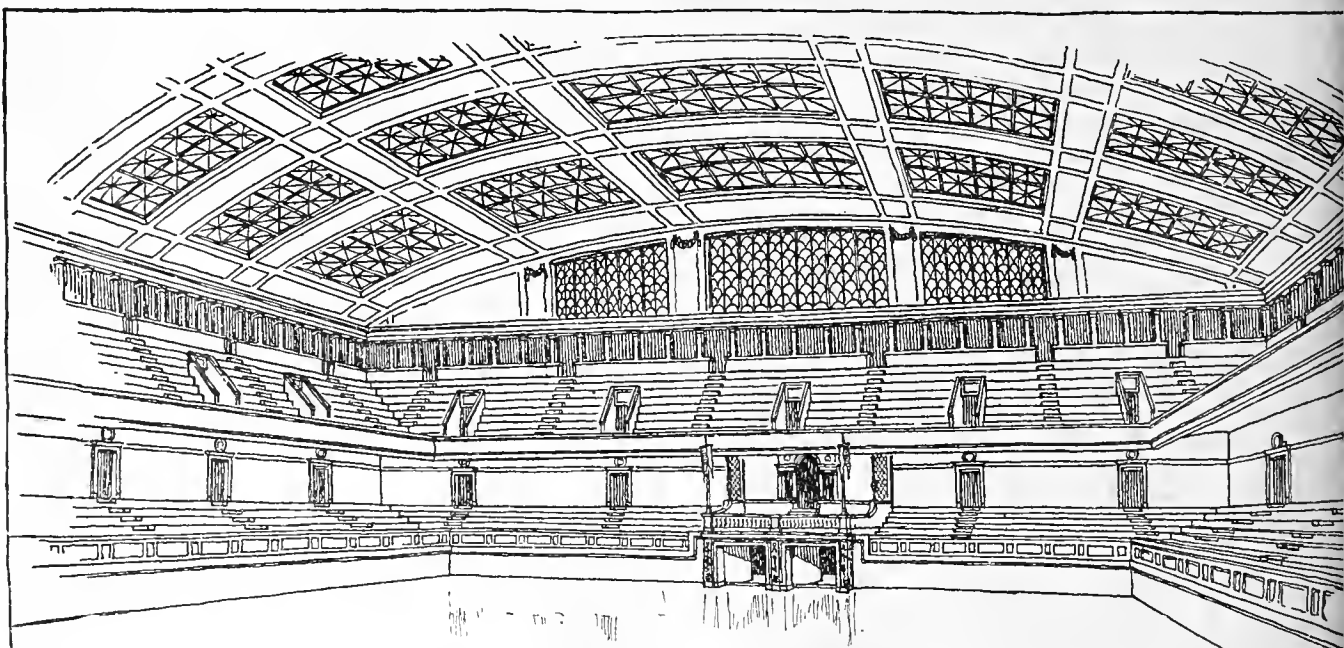
Heywood is considering the form of its town's memorial to the local men who have fallen in the war. Suggestions are for the provision of a cottage hospital; to acquire the buildings on what is known as the town hall site—where the weekly market is held—and to erect thereon a town hall and memorial to the fallen at a cost of £25,000 or £30,000; and that a cross be erected in the centre of the town and that the names of the fallen be inscribed on it. A further proposal was to lay out the town hall site as public gardens in order to beautify the centre of the town. A committee has been appointed to consider the suggestions made and to report.



COLONNADE OF THE NATIONS

FRANK CHOUTEAU BROWN ARCHT

PROPOSED LIBERTY MEMORIAL FOR THE CITY OF BOSTON



CIVIC AUDITORIUM END TOWARD PRESIDENTS BOX FRANK CHOUTEAU BROWN ARCHT

BUILDING CONTRACTS BEFORE AND AFTER THE WAR. AND THE FUNCTIONS OF THE QUANTITY SURVEYOR.*

By JOHN W. HURRELL (Fellow).

A hundred years ago there were few, if any, surveyors practising exclusively as quantity surveyors precisely as that branch of the profession is understood to-day in the building world, but it is both interesting and instructive to have records left us of surveyors in practice about that period who appear to have devoted themselves largely, if not altogether, to the adjusting and settlement of building accounts. In the library of our institution there is at least one such record in a volume dated 1822, entitled "Skyring's Builders' Prices," the inscription on the title-page of which is worthy of adoption by the quantity surveyor of the present day; it runs thus:—

"SKYRING'S
BUILDERS' PRICES
COLLECTED FROM THE
PRIME COST OF MATERIALS AND
LABOUR
TO THE PRESENT TIME
AND
CALCULATED TO DO JUSTICE
TO THE
EMPLOYER, MASTER BUILDER, AND THEIR
WORKMEN."

In an illustration at the front of this volume Mr. Skyring has depicted the surveyor by a figure of blindfold Justice holding the scales in balance standing upon a pedestal with the inscription thereon:—

"BUILDERS' DISPUTED ACCOUNTS EQUITABLY
ADJUSTED."

This very interesting record suggests that disputes frequently arose at that time by reason of imperfectly defined terms of contract entered into between the parties. At that period there were probably two forms of contract adopted, one by which the architect supplied the drawings and specification upon which the builder prepared his own more or less detailed estimate and undertook to execute the work for a lump sum, and the other method by which the work was measured up, valued, and agreed by the parties.

Even at the present day there are some architects who consider the former of these two methods a satisfactory one, as it would appear to secure to the employer the completion of the building for a fixed sum such as he may only be in a position to expend. There are, however, in my opinion, several serious objections to this form of contract; firstly, the builder who contracts on this basis naturally includes beyond his approximate detailed ascertainment such a sum as he may consider will cover any deficiency in his calculations and also the responsibility of the risks he takes in the different interpretations of the drawings and specification which may be placed upon them by the employer or his architect; secondly, the employer thus pays something in excess of the value of the work if no miscalculations have been made and no responsibilities have arisen in the manner stated; thirdly, it unreasonably puts the builder or builders tendering to a considerable amount of expense in the employment of his estimating staff or of an independent surveyor, for which he receives no return should he not secure the contract.

In the United States also, I believe, this form of contract was very largely adopted until recently in works even of great importance, but I was informed years ago by the works manager of an American contractor of large experience that it invariably led to serious and expensive disputes, as only seldom is a building executed without alterations of the plans, thus leading to divergence of opinion between the parties as to their value. The contractor referred to executed some twelve years ago, in the North of England, a contract of over £250,000, for which my firm had prepared the quantities, which were at first considered by him more or less

unnecessary, but as considerable variations occurred during the progress of the work, it was acknowledged when the measuring took place that the method of contracting, based upon accurate bills of quantities was far more equitable than the American form of lump sum contract.

The numerous important building and engineering works which have been executed during the last seventy or eighty years in this country have doubtless led to the adoption of a more accurate method of ascertaining the cost of proposed building works before entering into contracts for their execution, and so has arisen the specialised profession of the quantity surveyor; and I think it may be truly said that up to the time of the commencement of the Great War very few contracts of importance were entered into except on the basis of bills of quantities prepared by the quantity surveyor. This, in my opinion, is by far the most satisfactory form of contract, resulting in an equitable adjustment of the interests of all parties, inasmuch as the work is thus paid for at its proper value, and if a surveyor of experience has been employed, few, if any, extras occur.

During the war the Government found it necessary to erect many extensive buildings with the utmost possible speed, and it was found impossible to enter into the previously established form of contract based upon bills of quantities. The alternative was therefore frequently adopted of selecting a builder capable of executing important works quickly, and paying him by prime costs, plus a profit. The objection to this form of contract is that it provides no incentive to the builder to use the utmost vigilance in the conduct of the work, either in organisation or in alertness in purchasing in the best markets, and even when a builder of known integrity is employed there are the elements of his staff and workmen to be considered. Knowing the nature of the contract, the staff would probably not take the same keen interest in economy of expenditure; and as to the workmen, some might take advantage of the position, knowing that whatever the cost of the work, their employer would be paid for it, and in fact receive profit upon any excessive costs. In this form of contract it is essential that the most complete power of scrutiny should be vested in the quantity surveyor appointed by the contract; and in several contracts of this nature, entered into since the date of the armistice November 11, 1918, for which my firm have been appointed surveyors, we have inserted in the contract agreement the following conditions:—

"Prime costs to be the actual disbursements of the contractor for materials and labour in accordance with the current market prices of materials and labour as they may vary from time to time as required during the period of the contract work, together with travelling and other incidental expenses. The contractor's prime cost books of account, all invoices for material used and supplied, workmen's original daysheets, material sheets for materials for shop work and those delivered at the site, together with all transit charges to be open at all times for inspection, approval, or correction by the surveyor."

"Establishment charges to include clerks' salaries, rent, rates and taxes of the contractor's general builder's establishment, excepting any portion employed (if any) for other than building purposes, all insurances, repairs only to plant and machinery caused by usage upon the contract works, depreciation of fixed plant, machinery, and building aforesaid, all to be charged in proportion to the contractor's general turnover as builders upon the average of five years, but exclusive of directors' fees, whose expenses only shall be charged. These establishment charges to be certified by the contractor's auditors, the full details of which shall be subject to the inspection, approval, or correction by the surveyor."

Other forms of contract were sometimes adopted by the Government, as explained in the Report of the Treasury Standing Committee on Co-ordination of Departmental Action in regard to Contracts, of which Lord Selwyn was chairman, which probably many of the

members present have had opportunity of reading. After receiving evidence from all the Government Departments, the Committee arrived at the conclusion—

"that in principle lump sum or schedule of rates contracts are very desirable where still able to be negotiated, and the Committee strongly recommends that immediately normal conditions are re-established lump sum contracts should again be adopted."

The Report proceeds:—

"That as a preliminary to placing any contract the most complete plans and specifications are invariably worked out, the contractor being furnished with such details (presumably bills of quantities) as to enable him to calculate with accuracy the commitment he is assuming," thus confirming my own views previously expressed in this Paper.

The Treasury Standing Committee referred to suggested an alternative form of contract in their Report, viz:—

"Contractor's profit to be fixed on estimated cost at time contract is placed, the contractor to be recouped his actual expenditure properly incurred in the works, his profit to be a fixed sum based upon percentage of the estimated cost of the works, this estimate being prepared after the plans and quantities have been worked out with some degree of accuracy. By this means the profit will be fixed when the contract is placed, and will not vary with the actual expenditure."

It is difficult to see what advantage would accrue to the employer from this form of contract, excepting only the possibility of the contractor receiving less profit by reason of it being a fixed sum upon a deficiently estimated sum based upon "quantities worked out with some degree of accuracy."

On the other hand, it might result in loss to the employer by the possibility of the fixed profit being based upon an excessively estimated sum based upon the same imperfect quantities.

Moreover, to ascertain the probable prospective cost with any reasonable approximation to accuracy, it would be necessary to prepare the quantities in very considerable detail, and in my opinion it would, therefore, be better to have accurate quantities prepared, and to receive firm competitive tenders, in which the builders would fix their own profit. Personally, I should never recommend this suggested form of contract.

When time is of extreme importance in the letting of a contract, and there is no time for the preparation of detailed quantities, I am of opinion that a fairly satisfactory form of contract would be obtainable by the quantity surveyor preparing a schedule of approximate measurements of the principal items of work, and submitting the document to builders for tendering, the work to be measured up on completion and adjusted with the schedule of prices thus obtained.

It is now generally stated by builders that they have found, by accumulated experience during the war period, that the building artisan has not on the average been performing more than two-thirds of the work per unit of time that he was doing before the war. Whether this arises from the workmen available being generally of older type, and so not capable of doing the same quantity of work as the younger men absent in the war, or whether it is a mandate of the trades unions in order to avoid unemployment later, it is impossible to ascertain, but this state of things obviously increases cost of building, and undoubtedly contributes to the prevention of building contracts being entered into where the employer cannot afford commercially to build at the present extremely high rates of cost.

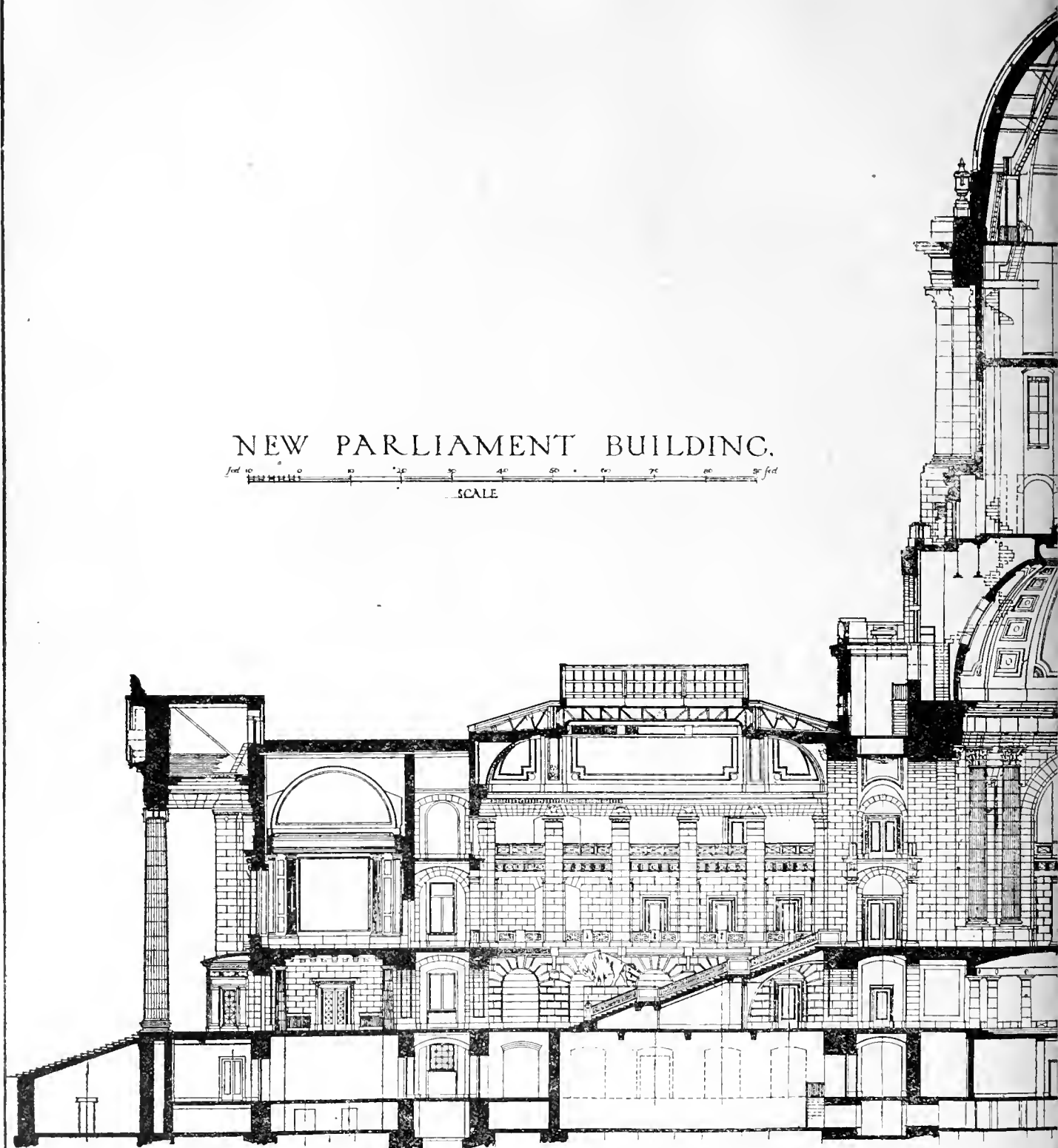
It is therefore of importance to discover, if possible, some remedy of this state of labour, and with this object Mr. Henry Vale, of Wolverhampton, has been associated with a scheme of bonus payment to workmen which was adopted in the erection of a munition factory in the Midlands, and which is said to have worked satisfactorily. The principle of the scheme was to set up constants of labour based upon a reasonable output of work, and to pay the workmen for work executed beyond the constants as a bonus. This appears to be

(Continued on page 208.)

* Read at the Ordinary General Meeting of The Surveyors' Institution, held on Monday, March 31st, 1919.

NEW PARLIAMENT BUILDING.

10 20 30 40 50 60 70 80 feet
SCALE



SECTION
LOOK

ILLUSTRATING THE BUILDING AS EXECUTED



WINNIPEG. MANITOBA.

FRANK W. SIMON F.R.I.B.A.
ARCHITECT.

VEAA
T

REPRODUCED FROM THE WORKING DRAWINGS.

(Continued from page 201.)

a reasonable and equitable proposition, but it will at once be seen that it would necessitate a great amount of intricate work by the surveyors employed in setting out and marking off at the works certain sections to be executed in the particular trade concerned, and by the contractor in arranging a probable adequate number of workmen to be employed upon each section. Moreover, it might frequently occur that the workmen would over-run the section and overlap others, thus creating complications. Also, all workmen employed upon a section might not each be doing the same amount of work, and thus dissatisfaction would arise amongst them.

Mr. Vale states that—

"Although only part of the work carried on at this factory was being measured, the extra staff required to look after the scheme included one supervising surveyor, nine surveying assistants, and five clerks."

He adds, however, that this surveying cost, during the latter part of the time, was under five per cent.

One can readily conceive that intricate complications would arise were such a system applied to certain trades, for instance, reinforced concrete, joinery, or plumbing; in fact, it seems to me that its application to such work would be altogether impracticable.

Mr. Vale attended the Quantity Surveyors' committee meeting at the Institution in May last to explain his scheme, but some of its difficulties were at once apparent, and the committee regretted that they could not immediately give it favourable consideration, stating that a similar scheme had been tried by the London and North Western Railway Company, and had proved a failure. Also that the number of surveyors employed on the work showed its cost to be excessive for the result obtained.

The mind of the workman in all industries has become so obsessed with the idea that his labour is unjustly used by the employer in realising excessive profits that the time has undoubtedly arrived for a just and reasonable treatment of his claims, and, in my opinion, a certain amount of co-partnership between employer and employee is the only means that will satisfy the situation and lead the workman to execute a fair and proper output of work. This would result in the building trade in considerable reduction in cost, and so encourage building operations to the advantage of all concerned in this important industry. Such a co-partnership should be capable of arrangement, and when capital, plus the directing brain, has been adequately compensated out of profit, it appears reasonable that labour should share in any further profit accruing.

In the present abnormal state of building costs which will no doubt continue in a more or less degree during what may be called the transition period of reorganisation of the building trade, it will probably not be possible to arrange fixed contract sums placing the responsibility of the fluctuations of the market on the contractor, although in my opinion he would suffer no loss in accepting that responsibility, as in all probability decreases in the prices of materials, if not of labour, will take place during that period. Already in the north builders attach to their tenders a note to the effect that their tenders are based upon the then existing costs of materials and labour, and are subject to readjustment in the event of fluctuations of the market.

I have always held that in normal times a limit should be agreed as to additions to or omissions from a contract—it may be either in the interests of the employer or the builder—a percentage, say, of ten or twenty per cent. of the contract sum in variations to stand upon the contract basis, and beyond that percentage variations to be subject, up or down, to the fluctuations of the market.

After the transition period has terminated, I am of opinion that, notwithstanding the experience that has been acquired through the war period, all parties concerned in building contracts will be best served by returning to the pre-war system of contract, which embraces the following equitable conditions:—

(1) Accurate bills of quantities based upon complete drawings and specifications; and when no separate specification is written, the

quantities to contain complete general conditions with full specification descriptions of the necessary materials and labour in the preamble of each trade; and where necessary the localities in the work to be fully stated in the measurement items relating thereto, thus making a combined document of the bills of quantities and specification, which is a much more convenient document for reference than the two separated.

(2) The quantities to form part of the contract, any inaccuracies therein, either in excess or deficiency, to be rectified, and variations resulting in additions or omissions to be adjusted in accordance with the schedule prices of the contracts. In order that the schedules may be properly applicable to the work, they should be submitted to the quantity surveyor for examination, and, if necessary, correction, before the signing of the contract. Where this has not been done, serious errors have sometimes subsequently been discovered, resulting in serious loss to one or other of the contracting parties.

(3) In recourse to arbitration the disputes between the parties frequently refer to claims by the contractor, arising out of variations in the contract plans from which the quantity surveyor has prepared his quantities, and it would therefore appear that in such disputes the latter is the best qualified to act as arbitrator, both as relating to measurements and prices, and I understand an amended arbitration clause is in course of preparation by the National Federation of Building Trades Employers suggesting that in such disputes a quantity surveyor should be appointed.

This brings me to the consideration of the important and responsible position held today by the quantity surveyor, about whose professional training so much has already been written that I propose at once to consider his position as a thoroughly qualified practitioner whose qualifications are probably as numerous and varied as those of any other profession. I think no more accurate description could be found of what his position should be than that previously mentioned in this Paper relating to Mr. Skyring's calling of a surveyor as "Calculated to do justice to the employer, master builder, and their workmen," by holding the scales of justice in balance between all parties.

This has always been my own conception of the true position of the quantity surveyor, whose duty in the preparation of his quantities should be to represent, in the fullest and most complete form, every requisite in both materials and labour for the execution of the building. In order to do this, he must have spent many years in close observation of the practical working methods of every building tradesman, from the excavator, through all the building operations, to the decorator.

In the performance of this work the most careful and detailed methods are necessary to ensure that everything actually set forth by the drawings and specification, or even incidental to the proper execution of the work, is included, the surveyor's mind being thus continuously occupied in the consideration of the financial interests of all parties concerned. This results in a judicial state of mind which he is frequently called upon to exercise in making decisions upon the numerous matters that invariably arise during the progress of the contract.

Not infrequently the sites of proposed buildings are surrounded by many difficulties or obstructions, and the quantity surveyor may be called upon to deal with deep foundations where faults of strata may occur, often resulting in water in large quantity being met with, the underpinning of important adjoining buildings—possibly a large electric generating station with severe vibration; or it may be a canal or river where coffer-damming is necessary; or again important public thoroughfares with tramways; all of which require great experience in bringing them into the contract in such a way that the employer may be properly relieved of the responsibilities accruing therefrom, which should be clearly placed before the contractor by clauses stating in the fullest possible way the difficulties of dealing securely with these various important matters. Also rights of light, party-walls,

encroachments and easements often occur, in connection with all of which the quantity surveyor should possess legal knowledge.

It will thus be seen with what varied experience he should be equipped in order to prepare adequate general conditions, and to deal with the many important considerations essential to a complete and equitable contract agreement, in which he is generally consulted by the solicitor in important contracts. Where this experience does not exist it often occurs that clauses are inserted in bills of quantities which do injustice to the contractor and discredit to the surveyor, a few of which I subjoin.

1. I have seen it stated in quantities that the builder before signing the contract must satisfy himself that the quantities are correct, stating that so many days will be allowed for the purpose, and that he must accept the responsibility for their accuracy. Surely it is most unreasonable to expect the builder—who may not secure the contract—even if he had time to do it, to go to the trouble and expense, without payment, of doing work for which the quantity surveyor has been specially employed, and for which he probably received a considerable sum in payment. Such a clause is truly iniquitous.

2. It is frequently stated in quantities that—

"The builder must ascertain for himself the nature of the ground to be excavated, and no allowance beyond the contract sum will be made for any alleged ignorance in this respect."

In small building operations this is not of much moment, but in important building schemes it should be possible for the employer or his architect to take steps to ascertain the nature of the ground whilst the drawings are being prepared; and, in fact, in many instances the drawings cannot be accurately prepared in the absence of this knowledge, and so probably a certain amount of concrete or other foundation is shown to provide for the contingency of bad ground being met with, this being deducted in the final accounts if the ground proves good. Where it is not possible to make trial holes or take borings of the site, it is generally possible to ascertain from local authorities the geological nature of the ground in the neighbourhood.

3. A clause is often inserted to the effect that—

"The builder must give notice in writing to the architect before executing any extras, in default of which they will not be paid for."

It is generally quite impossible for the builder to do this, as he is frequently not in a position to know, as the work proceeds, that portions of it are variations forming extras over the contract, and it seems to me that it should be made the duty of the architect and quantity surveyor to give notice to the builder of extras occurring, as they are the only persons who possess the complete knowledge of all the particulars upon which the contract is based.

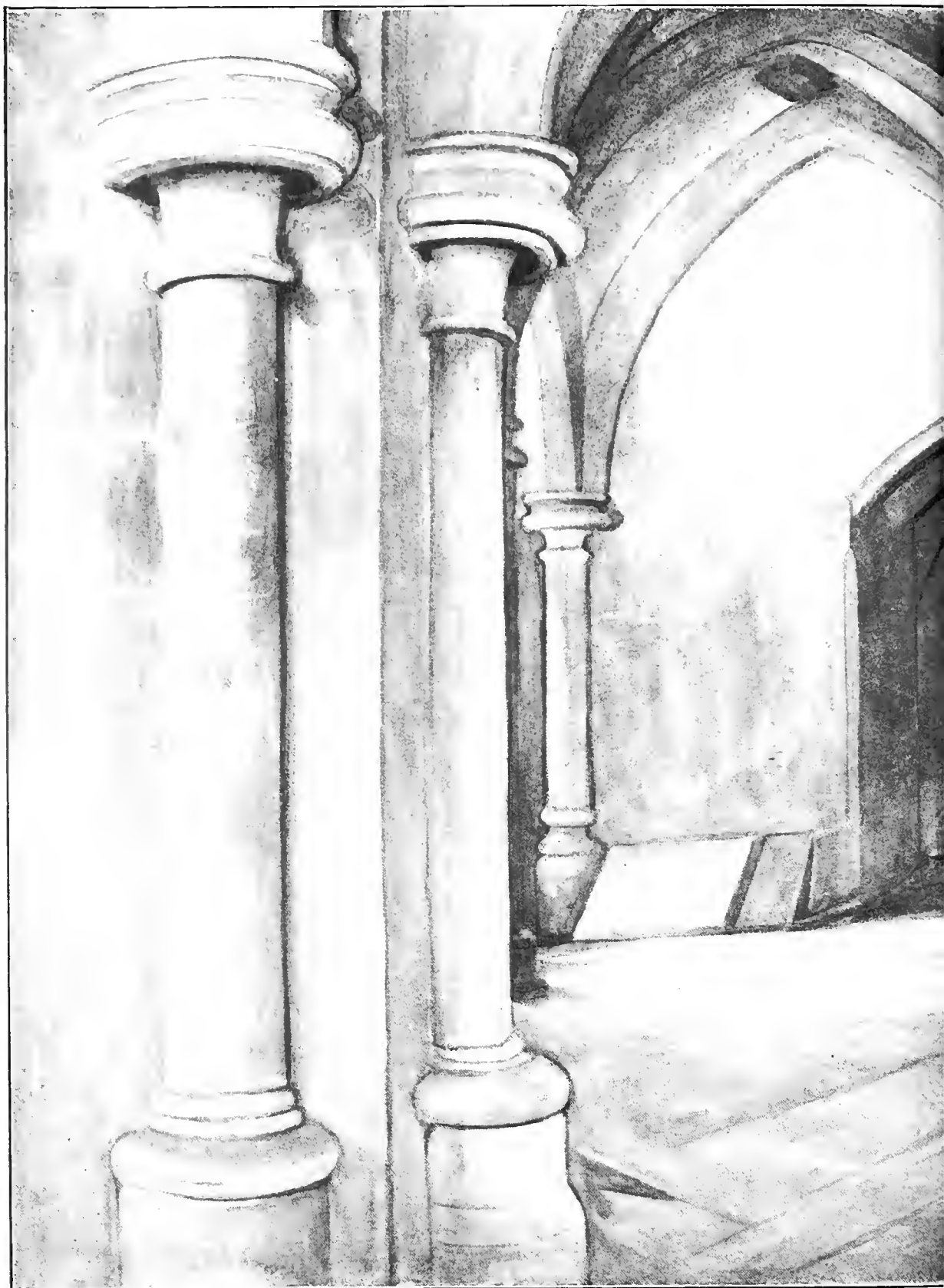
4. The clause is often inserted:—

"Provide all necessary artificial lighting and watching and pay all charges for same."

This places the builder tendering in the position of guessing what may possibly be the cost of this work. It will probably be said that an experienced builder can estimate this cost in proportion to actual costs which have occurred in his experience. In small contracts this is of small account, but in very large contracts, where there are numerous separate buildings, such as asylums, work-houses and hospitals, it is an item of magnitude, and would be more equitably treated if a provisional sum for it were included in the quantities, to be expended in full or otherwise by day work charges checked by the clerk of works and adjusted in the final accounts.

5. In some cases, even in large contracts where important heating and ventilating schemes are required, but for which no detailed plans have been prepared, a clause is inserted that—

"The builder must attend upon, cut all holes for, and make good after the heating and ventilating engineer."



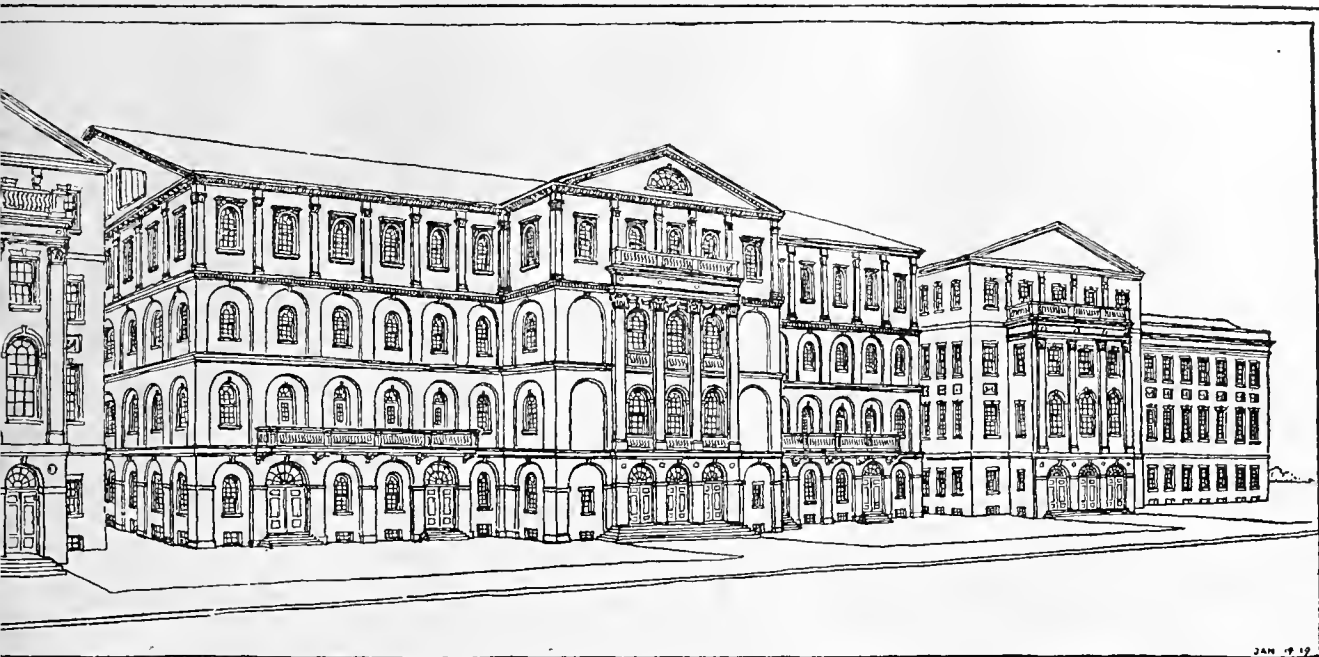
WELLS CATHEDRAL: VIEW OF THE UNDER CROFT
Royal Society of British Artists' Ex

APRIL 2, 1919.

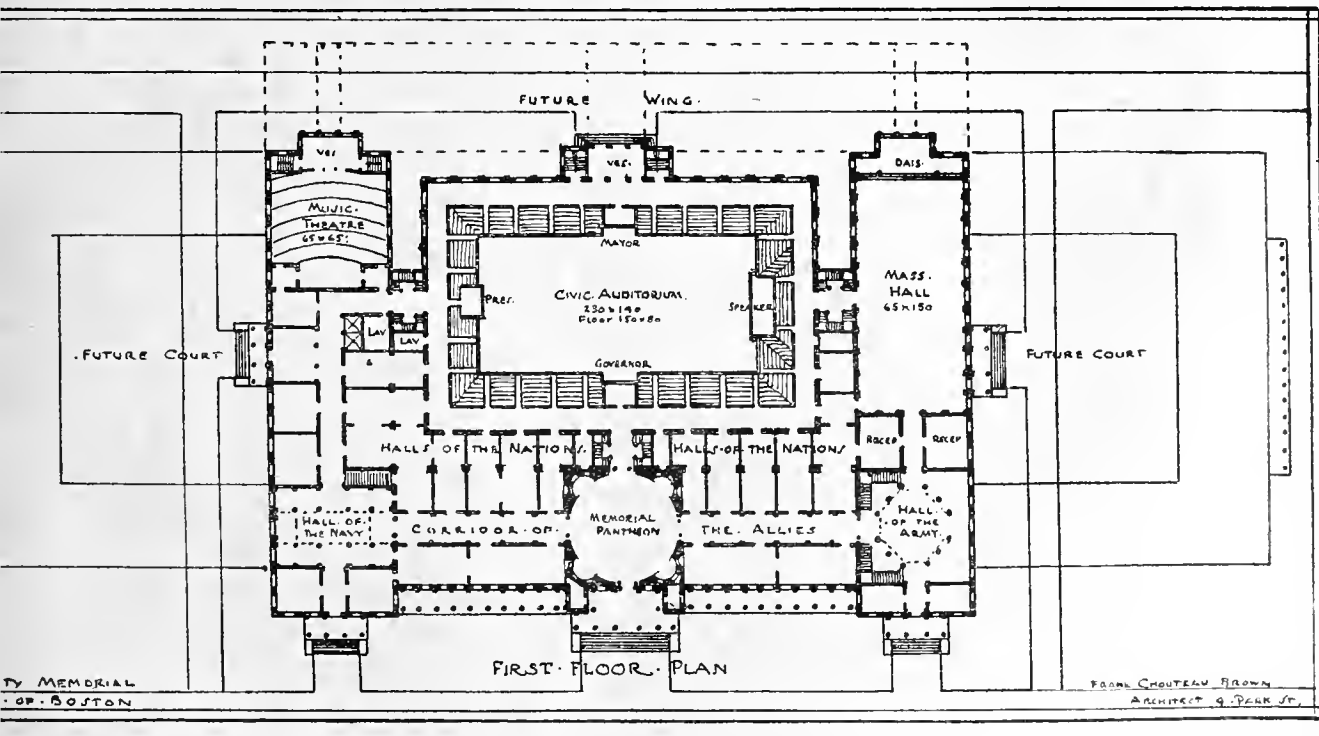


"CRYPT."—By Mr. WALTER S. S. TYRWHITT, M.A., R.B.A.
Royal Academy Galleries, 1918.





JAN. 1919



BY MEMORIAL OF BOSTON

FRANK CHOUTEAU BROWN ARCHITECT & PLANK CO.

BOSTON.—Mr. FRANK CHOUTEAU BROWN, Architect.

again placing the builder in the position of having to estimate roughly the possible cost, whereas a provisional sum, to be adjusted as described above would be a just treatment of the matter.

I suggest these as a few instances which it is the duty of the quantity surveyor to deal with in an equitable manner in the bills of quantities; and though by the inexperienced in these matters it might be construed as looking after the interests of the builder, it really results in the protection of the interests of the employer, as builders are generally astute business men, and when they have before them a document such as a thoroughly detailed and equitably prepared bill of quantities, it enables them to estimate accurately and closely, without adding sums of money, which may prove to be excessive, to cover the responsibility of this or that indefinite item of work.

During the progress of the work it is the duty of the quantity surveyor, upon receiving intimation of variations from the architect or contractor, to visit the building from time to time and take the necessary measurements in preparation for the final statement of account, and this work is greatly facilitated when a carefully prepared bill of quantities is available, accurate values being thus obtained. In this work the detailed contract schedule of prices is applied to the items of variation, but frequently items occur to which the schedule is not applicable, and the contract usually provides that they shall be valued by the quantity surveyor. In order to perform this duty he must have accurate knowledge of the current prime cost values of both materials and labour, and know the proportionate values of each. This is one of the most important qualifications of the quantity surveyor, who by many years of study and experience only can be sufficiently efficient to argue successfully in the interests of the employer in reduction of claims brought before him by the contractor, supported by his surveyor and estimating clerk, the latter probably having spent the whole of his career in this branch of the contractor's business. Truly the qualifications of the quantity surveyor are many.

I now propose to deal with the suggested unification of the different methods of preparing quantities which at present exist in various parts of the country, for the purpose of which a joint committee has been set up consisting of members of our own institution, the Quantity Surveyors' Association, and the National Federation of Building Trades Employers. I believe it is somewhat generally supposed in the building world that the methods adopted in London and the South are in many respects more detailed and complete than those of the North of England, but with all due respect to my friends in the South, I do not concur in this; indeed, I propose to show that in some respects the Northern methods are better than those of the South.

(To be continued.)

The Shoreditch Borough Health Committee has accepted an offer by the Carnegie United Kingdom Trust to allocate a sum not exceeding £25,000 for the provision of a model welfare centre in Shoreditch.

Mr. Bonar Law informed Sir E. Carson last Thursday that it was proposed to introduce a separate Housing Bill for Ireland, and he hoped it would be possible to present it at an early date.

The election to fill two vacant seats in the Denbigh Town Council caused by the resignation of Messrs. Robt. Owen and F. B. Clough, resulted in the return of Messrs. Gronwy Griffith, architect, and John Ellis Jones, hair-dresser.

Mr. Bonar Law has informed Mr. Stanton that the Government is not prepared to introduce a Bill granting the freeholds of all workmen's houses and others up to a rental of £50 per annum, in order to encourage workmen to build their own houses.

Queen Anne is dead—and, what is more, forgotten! A Sunday contemporary, remarks the *City Press*, gave in its last but one issue a picture of the scene round "Queen Victoria's Statue at St. Paul's Cathedral" during the march past of the Guards on Saturday week!

Our Office Table.

The area of the undeveloped portions of the London County Council's housing estates approximates to 5½ acres on the Old Oak Estate, Hammersmith, 11 acres on the Norbury Estate, and 11½ acres on the White Hart Lane Estate, Tottenham and Wood Green—a total of 155 acres. A scheme has been prepared for the development of a part of the White Hart Lane Estate on Garden suburb lines, and this is at present before the Local Government Board for approval. The approved schemes for the laying-out of the other estates provide for the erection of cottages with 2,860 rooms on the Old Oak Estate, and 941 rooms on the Norbury Estate. Plans have been prepared for the provision of 682 rooms on the Old Oak Estate and 449 rooms on the Norbury Estate. There is no vacant accommodation on the housing estates of the Council. There are long waiting lists for accommodation at all the estates.

Lord Blyth entertained Sir Aston Webb, the newly-elected President of the Royal Academy, at dinner at the Athenæum last week. To meet the President were Sir Edward Poynter, the Past President; Mr. Reginald Blomfield, R.A., Sir Thomas Brock, R.A., Mr. G. Clausen, R.A., Sir Arthur Cope, R.A., Mr. Frank Dicksee, R.A., Sir Luke Fildes, R.A., Sir George Frampton, R.A., Mr. Andrew Gow, R.A., Mr. Arthur Hacker, R.A., Sir William John, R.A., Mr. J. S. Lucas, R.A., Sir David Murray, R.A., Mr. Alfred Parsons, R.A., Mr. J. S. Sargent, R.A., Sir Frank Short, R.A., Sir Hame Thornycroft, R.A., Sir Ernest Waterlow, R.A., Mr. Henry Woods, R.A., and Mr. W. R. M. Lamb, secretary. There were also present the American Ambassador, the Marquess of Crewe, the Earl of Crawford and Balcarres, the Earl of Cromer, and Lord Stamfordham.

At a meeting of the Senate of the University of London held last Wednesday, a communication was received from the University College Committee announcing that the friend who, in 1911, anonymously presented to the University £50,000 for the erection of a School of Architecture, a Department of Eugenics, and Sculpture Studios at the College, had agreed to the publication of the fact that he is Sir Herbert H. Bartlett. The School of Architecture and the Department of Eugenics have been completed, and the Sculpture Studios, towards the cost of which Sir Herbert Bartlett has presented an additional sum of £1,000, will be put in hand immediately. A resolution was adopted conveying to Sir Herbert the thanks of the Senate.

Mr. Bottomley asked the First Lord of the Admiralty last Wednesday whether the first ferro-concrete ship, built at a cost of £20,000 at Barnstaple, under Admiralty orders, failed to be successfully launched, ultimately breaking her back and becoming a total wreck; whether the second of such boats, a 100-ton barge, had not yet been launched, owing to the fact that no insurance company would cover the risk of the operation; and whether he would take steps to cancel the remaining contracts for vessels of this description.—Colonel Wilson said the first of the concrete barges broke her back in the process of being towed down the Channel after the launch, and became a total loss. The second barge would be launched immediately the work of removing the wreck was completed. It was not the intention of the Government to build any more concrete vessels.—A Member: They would break the back of the ratepayer.

For some time the Scottish Divisional Council for Civil Demobilisation and Resettlement has interested itself in the question of the re-opening of the Ballachulish slate quarries. Pressure has been brought to bear in various directions in order that these quarries might be re-opened, and the slate industry in Scotland resuscitated with a view to finding employment and easing the labour market. It was intimated at the last meeting of the Council by the secretary that as a result of the efforts that had been made the Government had arranged to take over these quar-

ries on lease for a term of years, and is to run them as a national undertaking. It is expected that this step will give employment to considerable numbers of men, and that it will assist in no small way in placing this industry, so far as Scotland is concerned, on a flourishing basis.

The Council of the Eton War Memorial have issued a statement of their reasons for the rejection of both the alternative schemes submitted to the Memorial Committee by the Rev. T. B. Carter and his fellow-designers. The first scheme, consisting of a monumental entrance to Weston's Yard, surmounted by a memorial chapel and flanked by a tower 140 ft. high, occupying the angle between Upper School and Long Chamber, would entail the removal of the ancient N.W. angle-tower of college. A modification would place the tower on the north of the entrance to Weston's Yard with the chapel, and entail the removal of modern buildings only. The beauty of the designs is admitted, but both general and particular objections are advanced. More particularly the removal is deprecated of any part of the original college buildings, the diversion of services commemorative of the fallen from the college chapel to another, and any change in the outline and balance of the central group of buildings or in the silhouette of Eton. A plurality of memorials is therefore preferred by the Council.

A perhaps useful hint, in view of too probable coming events, may be found in a letter from "Bedford Row" to the *Times* of Saturday last. He refers to a case of a retired lawyer and his wife, whose joint income averaged a little under £1,000 a year. "Smartering under the unfair joint assessment of income-tax, they settled upon each of their five children an amount up to the free limit of those days. He made himself sole trustee, and the trusts were for the maintenance and education of the children (which, of course, he would have paid out of the same money had it not been settled), and the fund itself went to cash on the last child attaining 21. When this occurred he merely tere up the settlement, and nobody was any the wiser. But it reduced the joint income-tax to almost nothing. No doubt it was a fraud on the revenue, but that is exactly what inequitable taxation attracts."

In a special report on the proposed development of the Southport foreshore, Mr. A. E. Jackson, the borough engineer, states that there are now about 3,000 acres built up, about 5,000 acres awaiting development, and 1,500 acres of low-lying land which can be developed. The plans prepared on the instruction of the corporation for the foreshore developments include the extension of the bathing lake, which was patronised by 55,000 people last year, the laying out of the lagoon site into a park and open space of fifty acres devoted to a children's playground and cricket and athletic sports, the extension of the fair-ground, and a carriage drive reaching from the Marine Drive, passing under the pier, and eventually joining the Esplanade. Another part of the scheme is the construction of an outer promenade.

Notice has been received from the War Office that Lieutenant E. B. Newton, late borough engineer and surveyor of Paddington, who had been missing since April last, was presumed killed in action near Armentières.

With an address on "Belgian and Dutch Mediaeval Architecture," Mr. Sheriff Banister Fletcher, F.R.I.B.A., C.C., will bring to a close to-morrow (Thursday) his delightful course of lectures at the L.C.C. Central School of Arts and Crafts.

The Hford Urban District Council have passed a resolution asking the Home Office to bestow some official recognition upon five councillors who were successively chairmen during the war period. Five ex-chairmen refrained from voting.

Southwark Borough Council are about to make an experiment with rubber blocks, from which road-makers expect great things. The borough has already experimented for some years with rubber for roads. About 400 square yards of roadway will be treated by the new process.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

Tewkesbury Abbey Church, looking East. From a water-colour drawing by Mr. T. M. Rooke, R.W.S. (Birmingham Museum and Art Gallery).	
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Strand, W.C.2

A House at Cambridge. Mr. Arnold Mitchell, F.R.I.B.A., Architect.	
Scottish Housing Competitions. First Prize Design by Mr. John Arthur, I.A., Licentiate R.I.B.A., Architect; also Second Prize Design by Messrs. Alex. Cullen, Lockhead and Brown, Architects. Plans, elevations, and sections.	

Currente Calamo.

Dr. Addison and the House of Commons again delayed the Housing Bill last week. The Bill is, by common consent, the most urgent measure of the Session, and there has been a great deal of public impatience at the delay of the Government in introducing it. At last the second reading debate had been fixed for yesterday week. Yet Dr. Addison allowed himself to be persuaded that half-past 5 o'clock was too late an hour for him to do justice to the far-reaching provisions of the Bill, and actually agreed to a further postponement until Monday last. The House was counted out at 8 o'clock, three hours before its usual time. Dr. Addison's speech on Monday was a dull and half-hearted one. His information, as he confessed, was incomplete, and his little joke about "not looking the part of an Oriental Potentate" feeble. His late in the day admission that nineteen-twentieths of the houses for the working classes had been built by private enterprise was true enough, but we should hardly think he really believes it any more than Lord Downham did, or than Colonel Thorne does, who venomously interjected that "we" are out to kill private enterprise. Colonel Wedgwood quite truly said the Bill was only another attempt to exercise bureaucratic powers to put the housing of the working classes right. Since he had been a member of the House eight housing schemes had been introduced, and this was the worst of the lot. The Prime Minister, thinking of election promises, said we must have a Housing Bill; the Local Government Board searched their pigeon-holes for a scheme, and the "gingering up" of the local authorities began. All the previous schemes had failed because of the expense; so now the Government thought that by shouldering the cost on to the taxpayer they could get the local authorities to move. The rest of the discussion was poor. The debate was continued yesterday after we went to press, and we shall say more about it next week.

The 167th exhibition of the Royal Society of Painters in Water Colours comprises 216 exhibits, mostly of respectably level interest. Princess Louise contributes two, the first a very pleasant rendering of "Spring in the Italian Tyrol"

(22) and the second "An Emblem" (115), showing three female figures, the centre one of which, representing "Justice," is trampling on the serpent of evil. On a tablet held in front of her by her companions, presumably Faith and Hope, is inscribed "God is our Strength." The President, Mr. Alfred Parsons, R.A., as usual, sends several of his flower and plant sketches, "Flower Beds" (6) perhaps the best. Mr. J. C. Dollman is well placed with "Nightingale" (2); of his other three, the "Standean Valley from Ditching Beacon" (77) excellently realises a prospect familiar to most of us, but never better reproduced. "Juno's Birds" (100) include a seldom as well displayed view of its feathered glories by the proud peacock, and "January Morning from the West Pier, Brighton" (113) will recall to many the winter charms of London-by-the-Sea. Mr. Arthur Rackham's clever parodies of some of our nursery rhymes are quite a feature of the exhibition, and not one of the nine will fail to interest and amuse. "The Bearskin" (51), "The Crooked Man" (57), and the "Owl and the Birds" (58) are perhaps the most comical. Mr. T. M. Rooke sends three of his always welcome architectural subjects; the best, we think, is "St. Bartholomew's" (65); the others are "Tewkesbury Tower" (97) and "Florence" (174). Another satisfactory subject of kindred interest is "San Francisco Assisi" (130), by Mr. R. W. Allan, R.S.W. Among others worth record are "The House of Circe," by Mr. Albert Goodwin (7); "Light in the Harbour" (11), by Mr. J. H. Lorimer; "The Steersman" (31), by Mr. H. S. Tuke, R.A.; "Her Daughter's Legacy" (38), by Mr. Henry Henshall; "Scheherazade" (84), by Mr. F. Cadogan Cowper, A.R.A.; "The German Fleet after Surrender" (90), by Mr. James Paterson, R.S.A.; and "The Star of Eve" (204), and a "Nude Study" (210), by Mr. William T. Wood.

At the best, army huts will evidently make poor substitutes for suitable workmen's dwellings, as the Guildford local authorities have found. The Guildford Borough Council has had proposals for the purchase of huts, but in view of its building schemes, which are now being advanced, it decided not to incur this expenditure. Its officials, however, got into touch with Colonel Cole, the Con-

troller, and were informed that the cost of a hut, 40 ft. by 15 ft., was about £50, and that, according to circumstances, the fittings, conversion to a dwelling, and removal would, in addition, range from £100 to £150. Each of these transformed huts would therefore cost something like £200. This amount, however, does not include the provision of water supply, nor of sanitary arrangements. Except for very temporary occupation, therefore, the army hut can only be regarded as a makeshift, and a costly one.

The Architectural Association Sketch Book for 1914-1917 has just been issued under the joint editors, the late Cecil Brewer and Messrs. F. C. Eden, S. K. Greenstade, and A. Gilbert Scott. In normal times quarterly parts appeared, but the war, of course, intervened. The opening series of studies by Mr. Cecil Young of the N. Porch of St. Peter's, Fordham, Cambridgeshire, are excellent. The Pugin drawings by Mr. J. R. Leathart, including the S.W. Transept of Ely Cathedral, merit mention. The details of Belgian architecture by Mr. F. A. Eschanzier, of the Meat Market, Haarlem, etc., and the late Renaissance work shown by Mr. A. S. C. Butler, will be welcomed by those who emulate French evolution in classic design. Sir Charles A. Nicholson contributes vigorous and artistic sketches from Normandy. His "Bishop's Palace, Eyreux," is specially characteristic. The double page Italian Gothic study by John Ruskin, from Venetia, graphically represents some of the exquisite carving from St Mark's. The special feature of this volume is furnished by reproductions of drawings by members who fell in the war, and notably the powerful sketches by Lieut. Alick Horsnell and Lieut. Philip Webb, whose refined, measured studies leave nothing to be desired. The pencil sketches from Ravenna are masterly and true. Lieut. D. J. Gordon's Wymondham Church, Norfolk, and Capt. Noel Hadwin's Stalls from Coventry, including the interior of St. Michael's Church, are all welcome to those who appreciate good work and fine drawing. The title page is from an etching by Mr. W. Walcot, dashingly delineated, representing "Le Lion de Belfort" in sculptural form.

"War Memorials and the Barochan Cross," by Ludovic Maclellan Mann (Edinburgh and London, William Hodge

and Co.), is an appeal to "our almost forgotten Celticism" to consider the adoption of the Barochan Cross, Renfrewshire, as the *motif* in the design of memorials of the self-sacrifice of the heroes of the war. Not uninterestingly, Mr. Mann devotes many pages to the history of the Barochan Cross, with the illustration thereof. This cross was probably erected some time between 800 and 950. Its key patterns are the same as on a Devonshire cross referred to as a boundary mark in a grant of land dated 974. There has been considerable speculation as to the significance of the carvings on the Renfrewshire cross. Mr. Mann thinks the subject is Daniel and his lions, but the Rev. A. M. McLeod, of Bridge of Weir, favours the idea that the man represents Moses, the dwarf, the Israelite, and the man threatening the latter the Egyptian. Certainly, says Mr. Mann, it served to herald some tidings which the creator of the monument was anxious to promulgate—moral teachings relative to good conduct, faith, and the victory of righteousness over evil. Undoubtedly it did not offend the aesthetic instincts of the beholder, as so often do similar modern proclamations. A real and lasting work of art, through a millennium of years, testifying to the genius of the men of the early centuries of their era, and the great height of the moral platform on which they stood.

"New Town" (London: J. M. Dent and Sons, Ltd., 2s.) is "a proposal in agricultural, industrial, educational, civic, and social reconstruction," edited for the New Town Council by W. R. Hughes, M.A., who is the Chairman of the "Pioneer Trust, Limited," incorporated with a subscribed capital of £12,515, and with a total proposed capital of £75,000, to prospect for a suitable site of about 3,000 acres on to which to found a "New Town," under a direction of a company with a capital of not less than £250,000, under the management of a Board of Directors, and with a population of from ten to twenty thousand. The only architect on the Pioneer Trust Board of Directors is Mr. T. Alwyn Lloyd, L.R.I.B.A., of 32, Park Place, Cardiff, who is also a member of the "New Town Council," together with Mr. H. Clapham Lander, F.R.I.B.A. The ultimate aim of the endeavour is not merely to develop a housing scheme, but "to provide the right conditions of life for the full development of human personality." With this view an appeal for help is made to all sorts of reformers and idealists. Hitherto the responses to appeals of the kind have been failures, because the individuals or sections co-operating have thought their own ideals paramount. No scheme of the kind has yet given evidence of permanency and in the one or two which are often quoted as successful experiments the seeds of declension and decay are already perceptible enough. We wish "New Town" a better fate, and have read the book with interest.

A PLIMSOLL LINE FOR WAREHOUSES.

The somewhat impatient eagerness for a full investigation into all the circumstances connected with the very serious warehouse disaster at Liverpool last Monday week is not surprising. At the City Council meeting last Wednesday some of the councillors spoke with considerable heat, but the Lord Mayor, on the ground that the matter is *sib judice*, ruled a discussion upon it out of place, and after a number of questions and the withdrawal by Sir A. Salvidge of a motion to adjourn the council for half-an-hour, had been

put, the council passed on to its monthly business.

It is, we are glad to think, no part of our duty to comment on the alleged apparent unwisdom of, and suggested responsibility attaching to, whoever gave the order to cease the work of rescue at nightfall, which it is alleged left the unrescued victims of the catastrophe to endure a night of torture, but it is only right to say that the suggestion that responsibility for any such order attached to the City Building Surveyor seems wholly unwarranted. The special reporter of the *Liverpool Daily Post* writes that Mr. J. T. Alexander, the Building Surveyor, has told him that not only was it not upon his advice that the work was stopped, but he was actually unaware of the stoppage until afterwards.

The prompt need, not only in Liverpool but in other places, for some better system of inspection of dangerous and overloaded warehouses has once again been made painfully manifest. It appears that the overloading of such structures is a matter for local control, and the powers of the Liverpool Corporation in the matter depend on a private Improvement Act of 1882. But they seem very much the same as in other cities. A warehouse is not a factory within the meaning of the Factory Acts, which apply only to buildings where goods are manufactured or prepared for sale. It is not, therefore, visited by the Home Office inspectors. The local building surveyor has very far-reaching powers to act when he has reason to believe that "danger to any person exists or is likely to arise by reason of the excessive quantity or weight . . . placed on any floor in any warehouse." He can order the weight to be reduced or the floor to be strengthened within forty-eight hours, and in cases of greater urgency he can himself employ a contractor to make the alteration at the expense of the tenant. But he acts only upon "representations being made to him." The general responsibility is on the tenant, and it is only shared by the building surveyor when he has been informed of the danger. He has a staff of some ten district surveyors, who are concerned solely with buildings, but very largely with the supervision and inspection of new buildings. It is a part of their duty, however, to make periodic inspections and to report on the state of old buildings. They are men of trained ability, but are so few in number as to make frequent inspections impossible. And they have a further difficulty to face where loading questions are concerned, in that a tenant whose building appears safe enough at the time of inspection may afterwards increase the weights that it is carrying. There appears to be no definite scale applied by which a tenant could be warned at the inspection of the top weight which his floors may carry.

In the case of the warehouse which has now fallen down it is stated that an inspection was made less than two years ago, and it was then favourably reported on by the district surveyor. At that time it was very lightly loaded, different parts of the building being sub-let to firms which for the most part kept samples there. It is only recently that it has been used for the storage of grain, held by a contractor under the Loaded Grain Committee. The weight appears to have been enormously increased without the surveyor's department knowing anything about it.

It is pointed out by Mr. Alexander that in the case of the great majority of ware-

houses the inevitable deficiencies of his own system of inspection are very largely made up by the activities of the Salvage Corps, whose inspectors, acting on behalf of the insurance companies, take a keen interest in the safety of goods which have been insured. Where they find overloading they are usually quick to give the surveyor the information, without which he cannot act. But in this case the goods do not appear to have been insured, so that the surveyor had no later knowledge of the state of the building than that furnished in his district surveyor's report, based on the totally different conditions of 1917.

It is right to remember that the circumstances of the time were exceptional, and the accident does not perhaps give ground for increasing surveyors' staffs and the number of inspections they make. But, as the *Manchester Guardian* asks, is it not feasible to licence buildings, and especially old buildings, as ships are licensed, to carry only a certain weight of contents to the cubic yard? Is not a Plimsoll line for warehouses practicable? Under such a system the party responsible for packing a warehouse beyond its licensed capacity would be liable, if injury to life resulted, to criminal proceedings. We hope with our Liverpool and Manchester contemporaries that the projected Home Office inquiry will recommend some such plan for preventing its recurrence as well as means for co-ordinating rescue work where it is necessary.

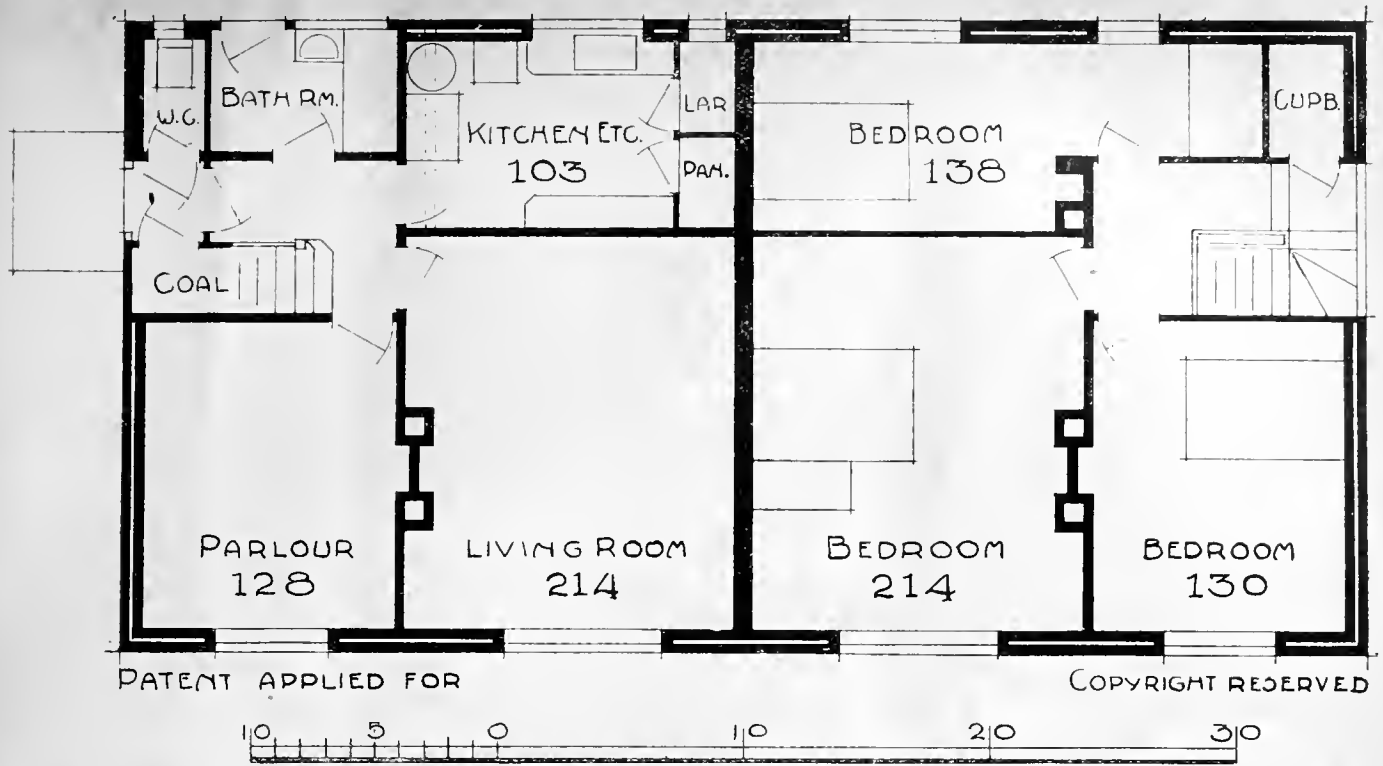
We should like to add that circumstances within our own knowledge induce the conviction that, whatever plan is adopted, it would be well if it could be made generally applicable throughout the kingdom in places where no reasonable guarantee of safety from such disasters exists. For example, in London, in our own trade, during the last three years, and thanks to Paper Control, many stocks of paper have been accumulated by those who had the good fortune to procure them, and some of us have been familiar with printers' premises and warehouses where every available inch of storage has been utilised, even the staircases being piled with paper to an extent that rendered free passage up and down them difficult, and ingress to and egress from the rooms on the many stories next to impossible. That we have had no disasters is perhaps due to the vigilance of the Factory Inspectors, and to that of other officials to whom adequate powers of control have been delegated by other authority. That these should be given everywhere goes, we think, without saying. But that care should be taken that they are only entrusted to men with real architectural knowledge is not, we fear, so generally realised as it ought to be.

THE PERFECT DOUBLE-FLATTED COTTAGE DWELLING.

By ROBERT THOMSON.

Among the unique features of this new class of double-flatted cottage dwelling are the novel location and structural arrangement of the offices which house the water-using appliances and the combination of these offices with the entrance lobby, whereby each of them is rendered directly and independently accessible therefrom. By this means the water-using appliances are made more widely useful, and the offices containing them are themselves made available for purposes additional to those which they usually serve in cottage dwellings as at present constructed.

The bathroom, for example—because of its convenient location to the entrance—in addition to serving as a bathroom may be used as a cloakroom and lavatory besides.



This plan, by Mr. Robert Thomson, 52, Chancery Lane, W.C., shows approximately the maximum economic value which the six-apartment double flatted type of cottage dwelling is capable of giving with the materials employed. It is given in comparison with the Tudor Walters Committee's plan, on which it is based, and, although requiring less material, gives over 15 per cent. greater area in its habitable apartments; and, in addition, offers important advantages, which neither that nor any other of their plans can give. But that is merely the end of the first stage of economical planning. There are three other stages, each of which marks a substantial advance over its predecessor.

and may also accommodate the perambulator, while by constructing a doorway in its outer wall a garden entrance is provided which enables the family to remove their dirty footgear, don their slippers, and make themselves tidy before entering the dwelling, thereby helping to keep down dust, which is the great enemy to health and the cause of much labour in every dwelling.

One vitally important advantage which results from the transference of the bathroom from the upper to the lower floor of the dwelling consists in the space which it sets free to provide a much needed increase in the size of the bedrooms. In the plan shown above the bedroom floor area is fully 18 per cent. greater than that of those in the Walters model plan No. 40.

Another important hygienic advantage which results from having the bathroom on the ground floor, in the position shown, is the greatly increased efficiency which is obtainable in the hot water supply and the greater inducement which this offers for the use of the bath.

A bath without an efficient supply of hot water is usually very inadequately utilised, and as the ordinary hot water supply generated by the small bath boiler behind the kitchen fire is invariably insufficient to meet ordinary requirements, unless much fuel is wasted, the upstairs bathroom is very often neglected as an aid to cleanliness, and consequently its value as an aid to health is very greatly impaired.

By locating the bathroom on the same floor as the kitchen, and so disposing of the bath and the kitchen range that they abut against opposite sides of the same partition, the utmost possible efficiency of the hot water supply is obtainable, and that, too, at the least possible cost both for their installation and their maintenance.

The compact grouping and relative arrangement of the water-using appliances enables the simplest and most economical drainage connections to be employed.

It is notorious that parlours in cottage

dwelling are inadequately utilised. This is in part due to lack of warmth in winter. To maintain a fire is costly, and entails much extra labour in cleaning up the fireplace. In order to overcome this drawback, the parlour and living-room in the accompanying plan are so disposed relatively to each other that a simple arrangement of the living-room fireplace enables the parlour to be maintained at a correspondingly comfortable temperature without extra labour or the cost of an extra fire.

By introducing two steps in the entrance lobby, as in the Tudor Walters plan, the two winders in the stair would be dispensed with.

The contained area of each dwelling is an exact square on plan, thereby securing the maximum accommodation with the minimum amount of material and at the lowest possible cost.

The dwellings are so arranged with the two living-rooms and the two principal bedrooms all on the same front, and the entrance doorway is so disposed that it enables these apartments to be so faced as to avoid an undesirable aspect, thereby rendering the dwelling suitable for any site, no matter what its aspect may be.

Both a larder and a pantry are provided opening out of the kitchen. As these need not extend down to the floor level, the space underneath them can be divided off from the kitchen and utilised as a cycle store, which, while within the building, is accessible from without through a doorway in the outer wall.

The large bathroom provides convenient accommodation for a perambulator when required.

Every apartment has its fireplace, and these are all located, not against party walls, where much heat is lost, but in the interior of the dwelling, and so arranged that the whole of the flues in five, six, and seven-apartment dwellings can be advantageously gathered into one chimney head, which emerges at the ridge

of the roof, thereby minimising the length of the external heads.

It will be noted that three of the rooms have the advantage of being free from chimney breasts, and that a unique arrangement of fireplaces and chimney flues is provided for, which experience has proved to be satisfactory and advantageous. The fireplace in the living-room is in the one position which secures the greatest possible comfort for the occupants of the apartment.

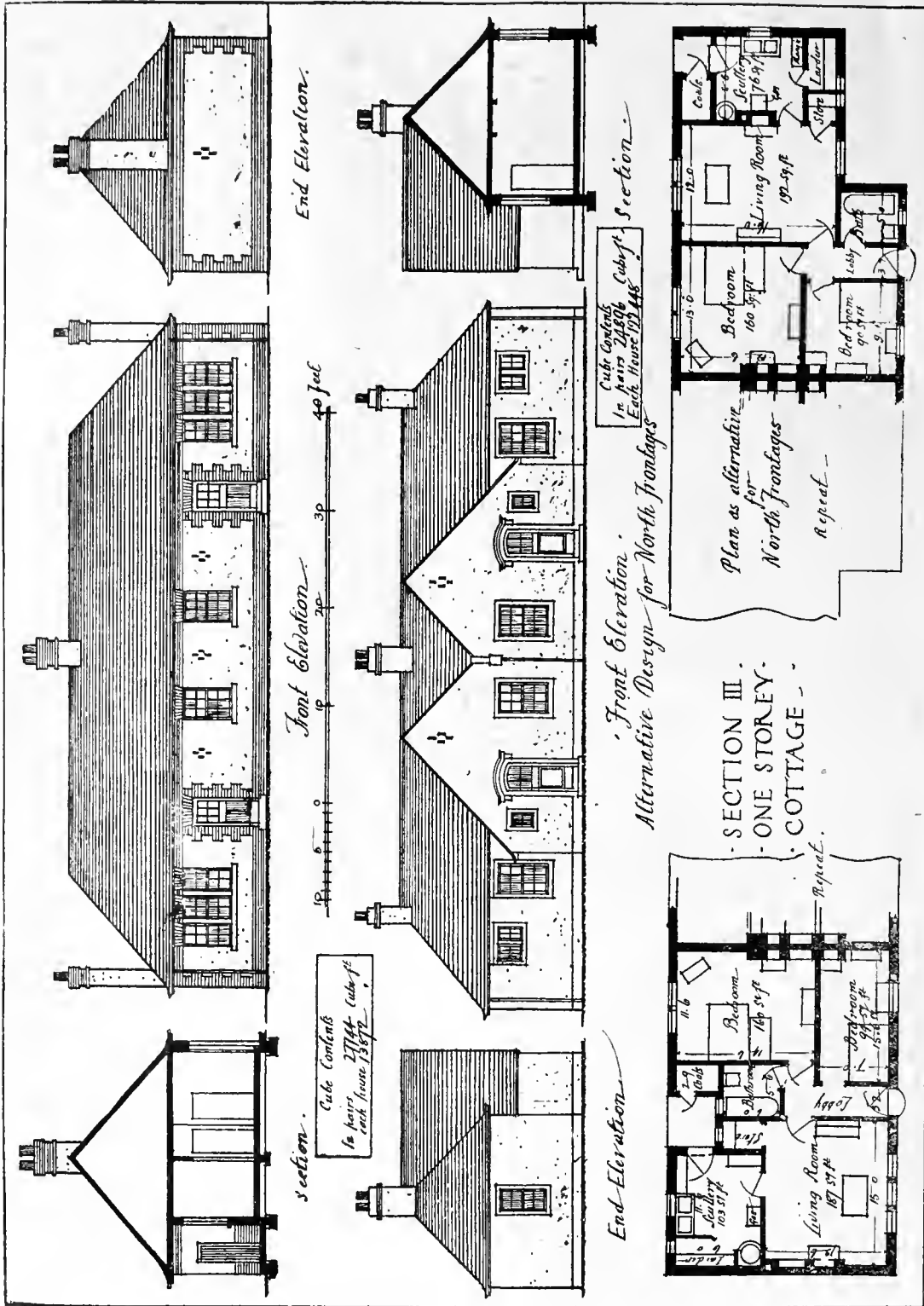
The w.c. and the coal store are both accessible from the entrance lobby, and are so located that a cheaply formed vestibule enables both of them to be entered under cover either from within or from without the dwelling, so that the coalman delivers the coal without requiring to enter the dwelling, and the housewife obtains it without having to pass beyond the vestibule. The vestibule is specially well ventilated, and by serving the purpose of a porch prevents the air of the w.c from entering the dwelling.

It is important to note that not one of the six apartments in this new class of double-flatted dwelling is a thoroughfare. Indeed, not one of them has more than one pass door. This is an advantage which is in striking contrast to the corresponding drawbacks in the model plans in the Tudor Walters report.

In these model plans either the living room or the scullery is a thoroughfare, and in sixteen of the twenty-four both the living-room and the scullery are thoroughfares, which have to be traversed in order to reach the w.c. from the bedroom.

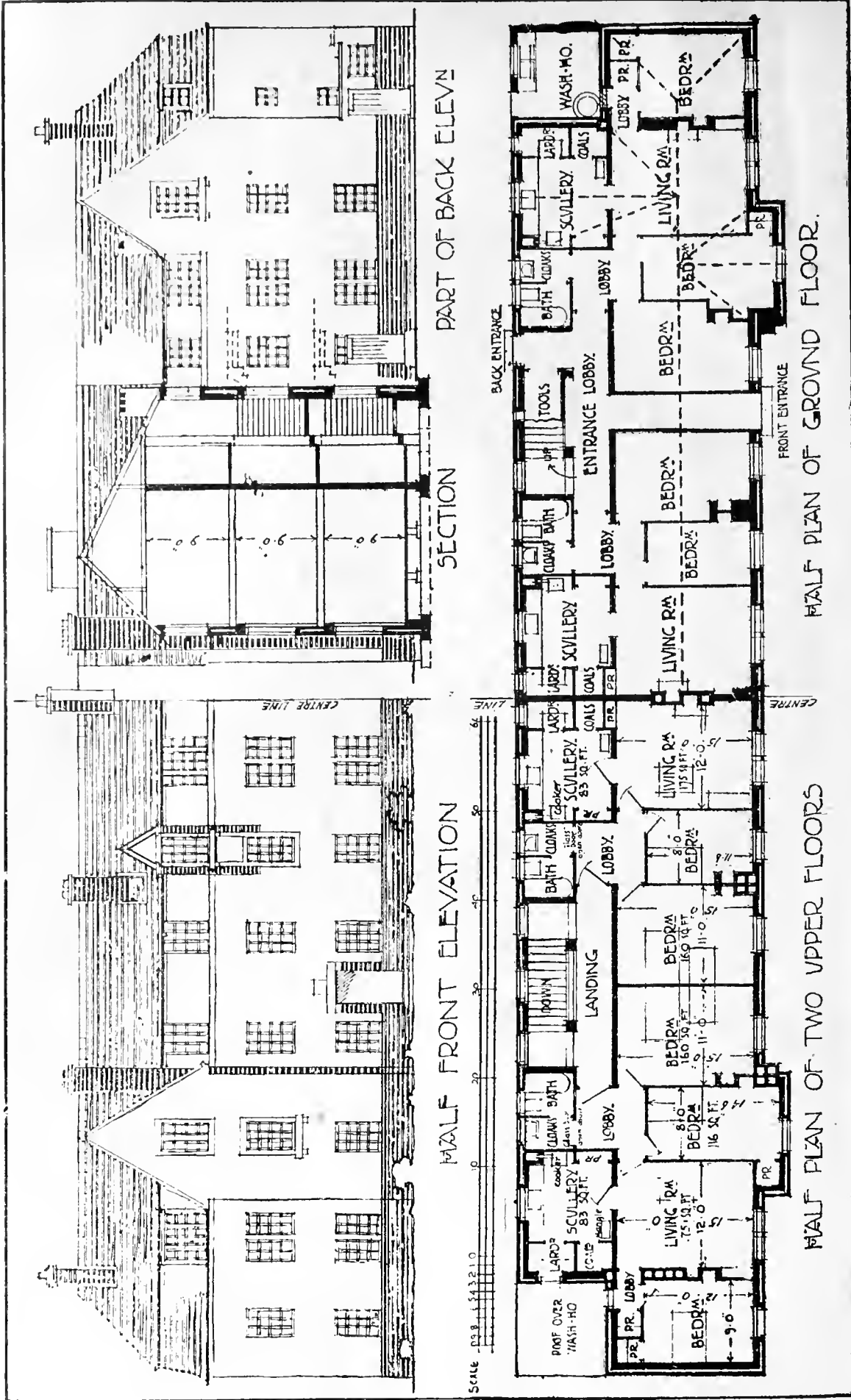
Designed four years ago, but kept secret pending the near approach of peace, the novel and distinctive arrangement of cottage dwelling just described goes so very far ahead of anything yet done that it creates an entirely new class of dwelling of the double-flatted type.

The new building programme of the Education Committee of the London County Council includes fifteen new schools.

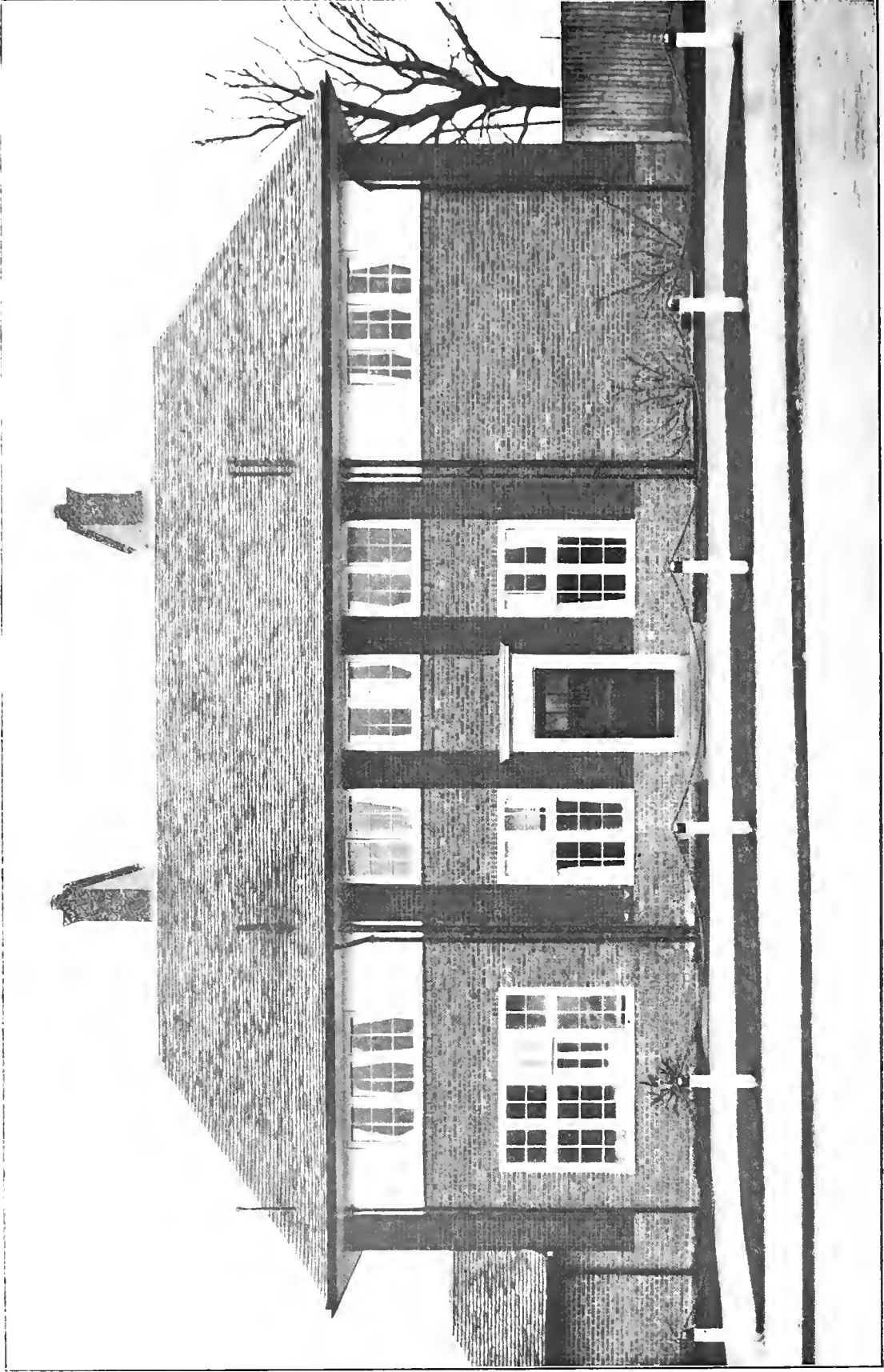


SCOTTISH HOUSING SCHEME COMPETITIONS: SECOND PRIZE DESIGN, THIRD SECTION.
 MESSRS. ALEX. CULLEN, LOCHHEAD and BROWN, Architects.

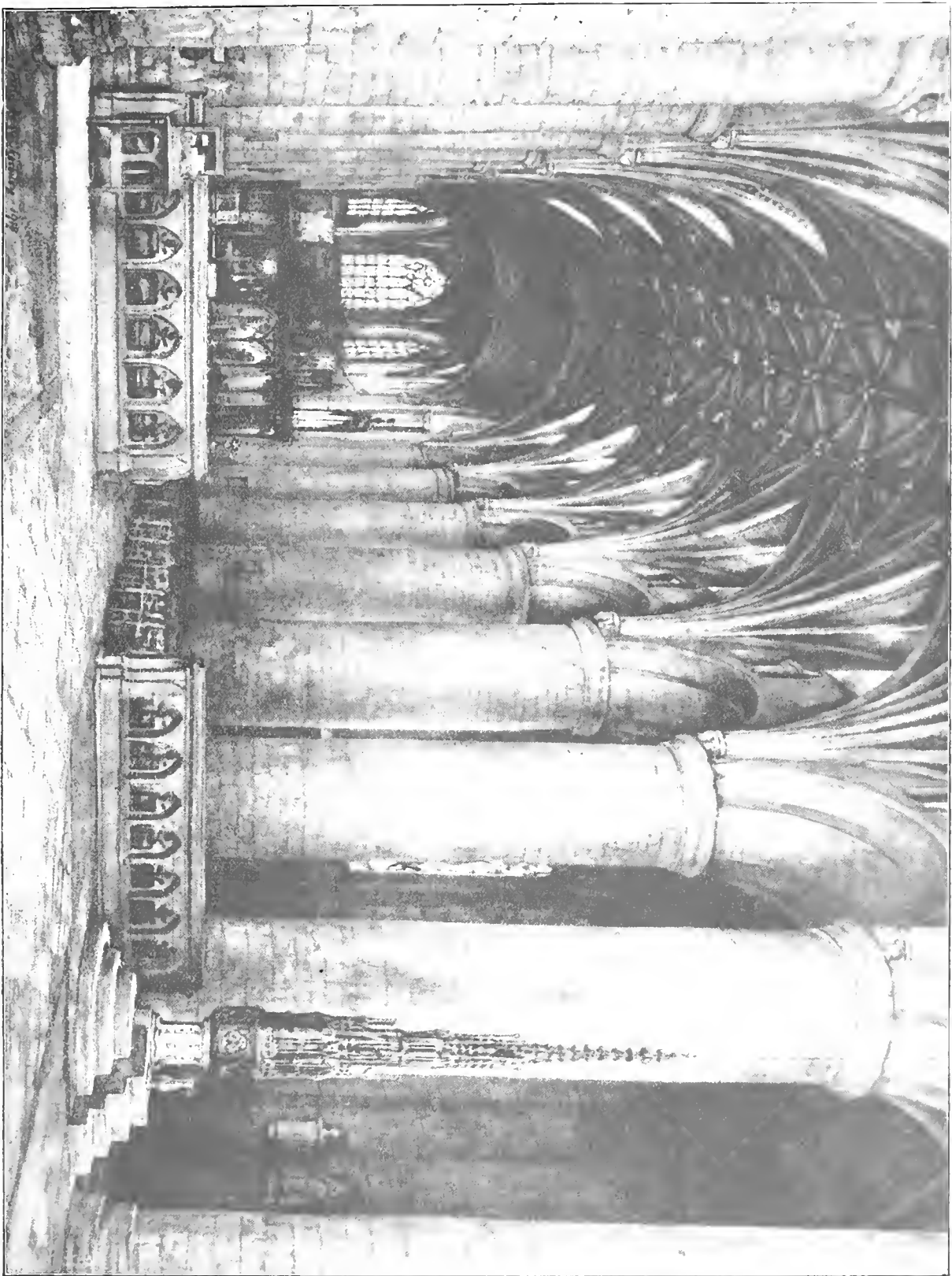




SCOTTISH HOUSING COMPETITIONS: FIRST PRIZE TENEMENTS, SECOND SECTION.
 Mr. JOHN ARTHUR, I.A., Licentiate R.I.B.A., Architect.



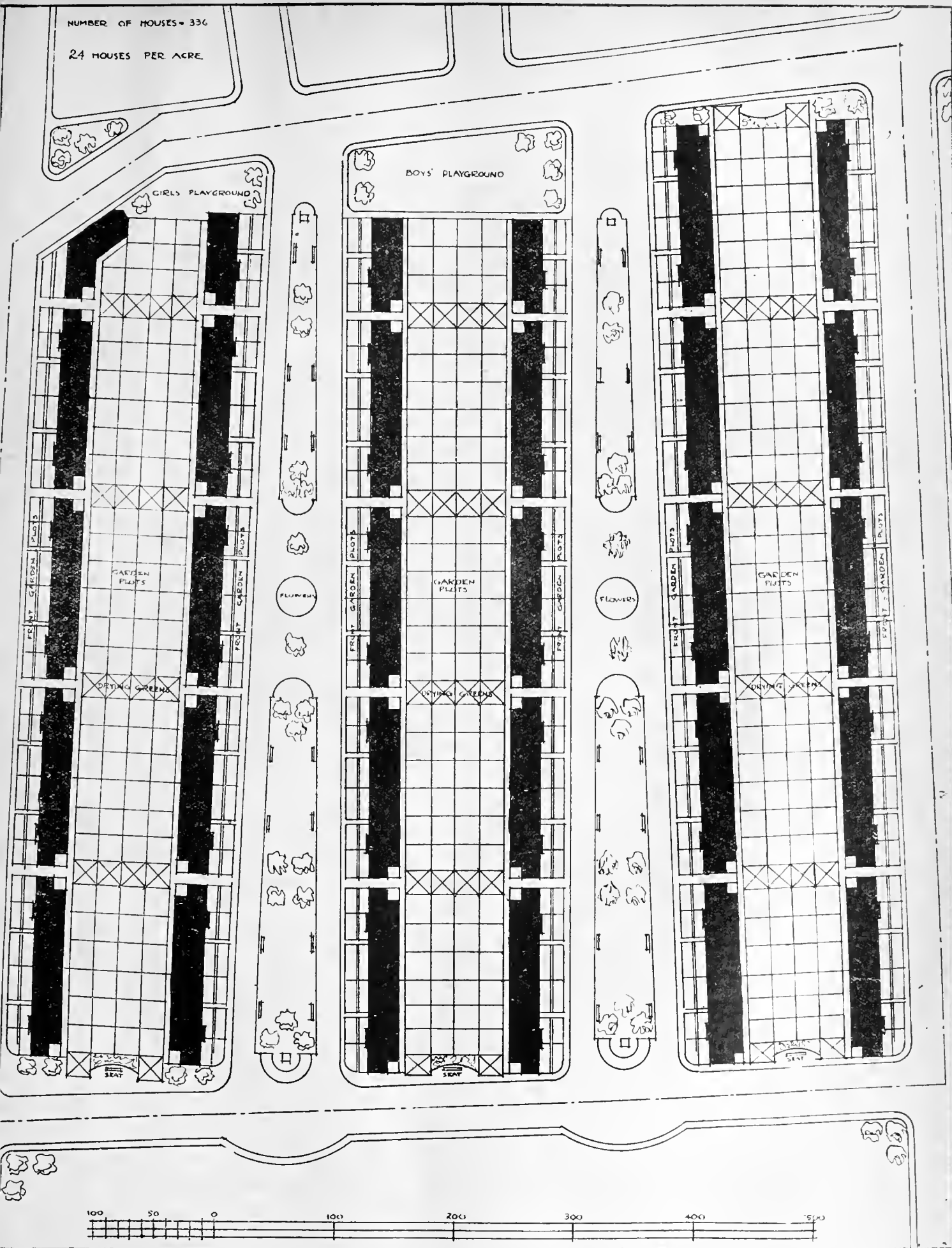
A HOUSE AT CAMBRIDGE.—Mr. ARNOLD MITCHELL, F.R.I.B.A., Architect.



TEWKESBURY ABBEY, LOOKING EAST From a Water-Colour by Mr. T. M. ROSE, R.W.S.

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SCOTTISH HOUSING COMPETITIONS: FIRST PRIZE TENEMENTS, SECOND SECTION, SITE PLAN LAY-OUT.—Mr. JOHN ARTHUR, I.A., Licentiate R.I.B.A., Architect.

Our Illustrations.

TEWKESBURY ABBEY: FROM A WATER-COLOUR DRAWING BY MR. T. M. ROOKE, R.W.S.

Mr. Tom Rooke's water-colour is a very large drawing, and realises truthfully the colouring and architectural design of this famous abbey. The picture is now reproduced by permission of the Birmingham Museum and Art Gallery Committee. The drawing forms part of the fine collection of Mr. Rooke's works, some twenty-eight in number, which have been from time to time presented to the city of Birmingham through the subscribers for the Preservation of Pictorial Records of Ancient Works of Art. We are indebted to Sir Whitworth Wallis, F.S.A., the keeper of the Museum and Art Gallery, for the photograph specially taken for the original painting for the purpose of this illustration.

A HOUSE AT CAMBRIDGE.

This wayside house at Cambridge was erected by Mr. W. Sindall, of Mill Lane, in red brick, with rubbed brick pilasters. Old Cambridgeshire tiles cover the roofs. Mr. Arnold Mitchell, F.R.I.B.A., of Hanover Square, London, W., is the architect.

SCOTTISH HOUSING COMPETITIONS.

FIRST PRIZE DESIGN.

The two single pages giving the lay-out of the site, and the plan, section and elevations of the tenement dwellings in the second section, show the first prize design, of which Mr. John Arthur, I.A., Licentiate R.I.B.A., of 137, West Regent Street, Glasgow, is the architect. The cubic contents, with 16-in. hollow brick walls, rough-casted, are stated at 138,912 cubic feet. The ground floor to be of reinforced concrete and sawdust, covered in rooms, with $\frac{7}{8}$ -in. flooring, and in sculleries the flooring is cemented. The upper floors of wood joisting and $\frac{7}{8}$ -in. flooring in rooms. Reinforced concrete and cement floor in sculleries. Roofs, home timber, covered with slates. The several rooms are all carefully figured. We also give the scale.

The one-story cottage for rural districts is shown by our third single page. Mr. John Arthur also won the first prize for this design in Section 5. A note on the drawing gives the cubic contents and particulars as to the materials to be employed in its erection.

SECOND PRIZE DESIGN.

The authors of this one-story cottage, awarded the second prize in Section 3, are Messrs. Alex. Cullen, Lochhead and Brown, of Brandon Chambers, Hamilton, N.B. The drawing is self-explanatory, and the cubic contents are stated on the sheet. The point aimed at was to get a cottage in which no living-room formed a through passage to another. The authors submitted a design applicable to a north frontage. The illustration has the figured dimensions fully set out, also the way in which the doors are hung. We reviewed the competition plans submitted to the Local Government Board for Scotland at Edinburgh in THE BUILDING NEWS for March 5 last.

It has been decided to carry out structural alterations and improvements at Balliol College, Oxford. The cost is estimated at £8,000.

At a public meeting held at Norwich a resolution was passed in support of a scheme for the provision of a college of science and other branches of learning as a central memorial to the men of Norfolk and Norwich who have fallen in the war. Sums amounting to £60,000 are promised, but it is not proposed to proceed with the building until at least £100,000 is forthcoming.

BUILDING CONTRACTS BEFORE AND AFTER THE WAR, AND THE FUNCTIONS OF THE QUANTITY SURVEYOR.

By JOHN W. HUBRELL (Fellow).

(Continued from page 210.)

In any case, the methods of the North are based upon customs which have arisen out of long experience, and are so thoroughly understood by the local builders that they are better able to prepare close estimates by those methods than by any other means, until, at any rate, they should become accustomed to any newly-established methods. The same can, of course, be said of the Southern system, and it seems to me, therefore, that no useful purpose could be effected by the proposed unification.

In Scotland in 1915 a "National Code for Building Works" was established, but any differences which existed in various districts prior to this date were probably of little importance, and, in consequence, readily adjusted, more particularly as the two chief building centres of Glasgow and Edinburgh are so near to each other, and consequently the quantity surveyor and builder have been accustomed to deal frequently with contracts under both conditions. Moreover, the value in the aggregate of building operations in Scotland is, as compared to those in England, I believe, about as 1 to 6, the latter being spread over a much larger area, with somewhat numerous important building centres, the various methods of which would be more difficult of adjustment.

We are doubtless all agreed that it is the quantity surveyor's duty fully and accurately to represent in bills of quantities the work to be contracted for, so that builders tendering may be able to prepare their estimates without further information, and the following instances illustrate a few of the differences of method adopted in the North and South:—

1. In the North a labour item in brickwork is given for building door and window or other openings in walls, given in superficial measure or by lineal measure of forming reveals, it being obvious that considerable labour is caused in the setting out of positions, arranging the bond, and in cutting and waste of the closers.

In the South this labour item is, I believe, omitted, and the builder is expected to inspect the drawings, and either measure for himself this labour, or by experience to judge approximately what he thinks may be its value and add it to his price of brickwork.

2. In the North, labour is given for forming and plumbing angles to piers in brick wallings, as here, also, labours occur in the setting out, bond and closers.

In the South this labour is, I believe, omitted, the builder being informed that he must inspect the drawings and deal with it as explained above with regard to openings.

In the case of a long shed wall, with piers at, say, 15 feet centres, and window openings between, the cost per superficial yard, including the above-mentioned labours, would obviously be much greater than the same measurement of reduced brickwork in a plain solid wall, but in the South the builder is asked to approximate the difference in estimating.

3. In the North all labours are measured on masonry in elevations, the cube of stone being first given for stone hoisting and setting only, and items given afterwards for every kind of labour required to complete the design, including preparatory and all finished labours, in fact, following the mason's chisel in the execution of the work. In the case of running moulded plinths, strings, architraves, and cornices, lineal measure with scantlings and full description of labours is given as in the South.

In the South cube stone and separate labours are not always given, and I have seen quantities prepared by London surveyors dealing with elaborate masonry of important buildings giving the cube stone, including all labours, in one item, with sketches illustrating very expensive work, to arrive at the true cost of which the builder would him-

self have to take out measurements of all the labours.

4. In the North carpentry is generally given in lineal measure of various scantlings, as the cost price per standard varies with the scantlings, whereas in the South carpentry is measured in cube feet without description as to scantlings.

5. In the North the work is billed in such a manner as to describe as far as possible its locality in the proposed building, being set out in parcels of work with descriptive headings, everything necessary to the completion of each being given, and thus forming a convenient document of reference at the workshop, the site, and at the final measurement and adjustment of accounts. Whereas in the South all work of the same description is usually abstracted together into a total, causing much unnecessary inquiry by the contractor whilst the building operations are in progress, and to all parties at completion.

The preceding illustrations are, as far as I know, the only important differences between the Northern and Southern methods, as a uniform measurement of slating and plastering has already been agreed, that adopted for slating having been used by my firm for thirty years.

The subjects of my paper are of such varied detail and importance that their consideration is almost inexhaustible, but I have contented myself by dealing with them in a general way in the hope that it may lead to useful discussion and results.

Our Office Table.

Widenings in Wood Street, London, will affect a house which was the property of Sir Richard Whittington, Lord Mayor of London in 1397, 1406, and 1419. At present it is occupied by some wine merchants. The present building, No. 9, is about 200 years old, and contains the arms of the Mercers' Company carved in stone and set in the brickwork, which will be replaced in the new front. Whittington left the freehold to the Mercers' Company amongst his other charitable gifts, and they have reaped the benefit of his gift in the 500 years that have elapsed. The vaults under the building at the rear formed part of the old Wood Street Compter or Debtors' Prison, opened in 1555, and of the old Mitre Tavern, Wood Street. It was a noted house for good wine, as Pepys records in his diary under date July 31, 1665, when he writes: "Procter, the vintner, of the Mitre in Wood Street, and his son, are dead this morning of the Plague; he laid out abundance of money there, and was the greatest vintner for some time in London for great entertainments." Five years before Pepys had visited the Mitre with his friends, when "some of us fell to handycapp, a sport that I never knew before." The compter and the tavern were both burnt down in the Great Fire of 1666, but the vaults escaped.

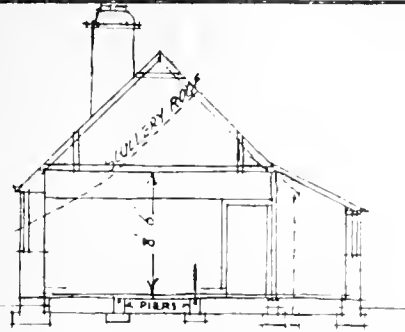
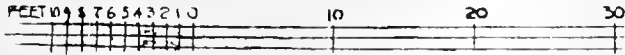
In answer to Mr. Lynn, who asked what was the total amount of revenue derived under the land clauses of the Finance (1909-10) Act, 1910, and the total cost of collecting it, the Chancellor of the Exchequer says:—The total amount of revenue derived from the land values duties up to March 31, 1919, was £4,113,906. The total expenditure incurred in connection with the work of the Valuation Office and with the collection of the duties on land values up to March 31, 1919, is estimated at approximately £4,600,000. It is impossible to distinguish the cost of collection.

The Local Government Board last Thursday vetoed a proposal of the Banbury Rural District Council to appoint its surveyor and inspector of nuisances as clerk of works to a housing scheme involving the expenditure of £100,000, on the ground that the work under his other appointments would necessarily suffer. It was agreed to advertise for a new clerk of works. A minority of the council had petitioned the Department against the appointment.

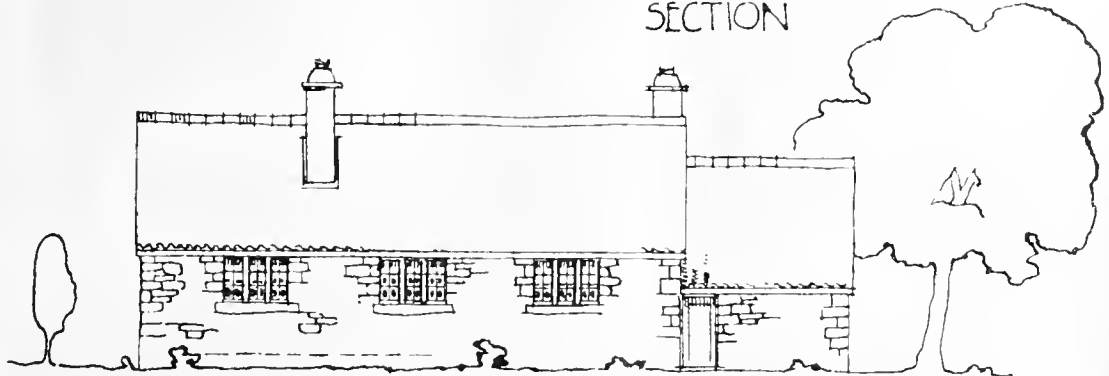
REFERENCE NOTES :-

LOCAL MATERIALS TO BE USED
COMMON RUBBLE WALLS, POINTED OR
12 INCH HOLLOW BRICK WALLS POUCECASTED.
ROOF COVERED WITH TILES OR SLATES

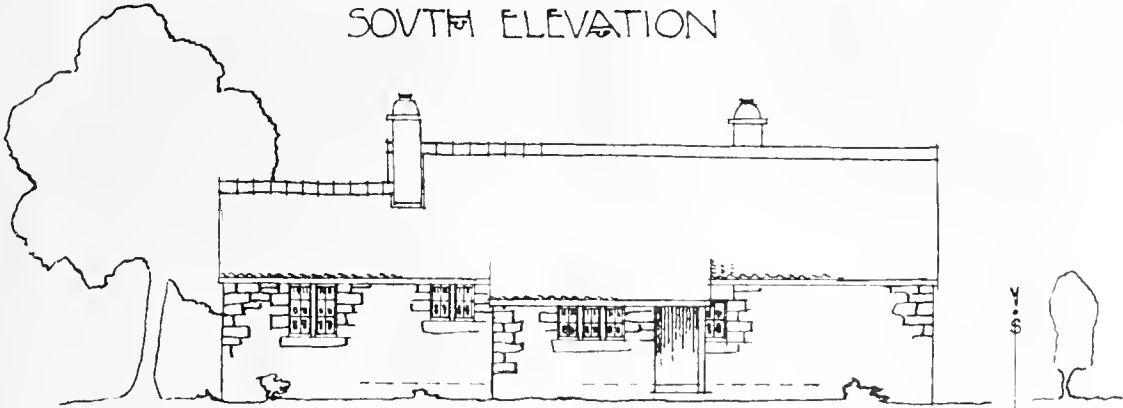
CUBIC CONTENTS :-
WITH 12 INCH HOLLOW WALLS -
12710 CUBIC FEET



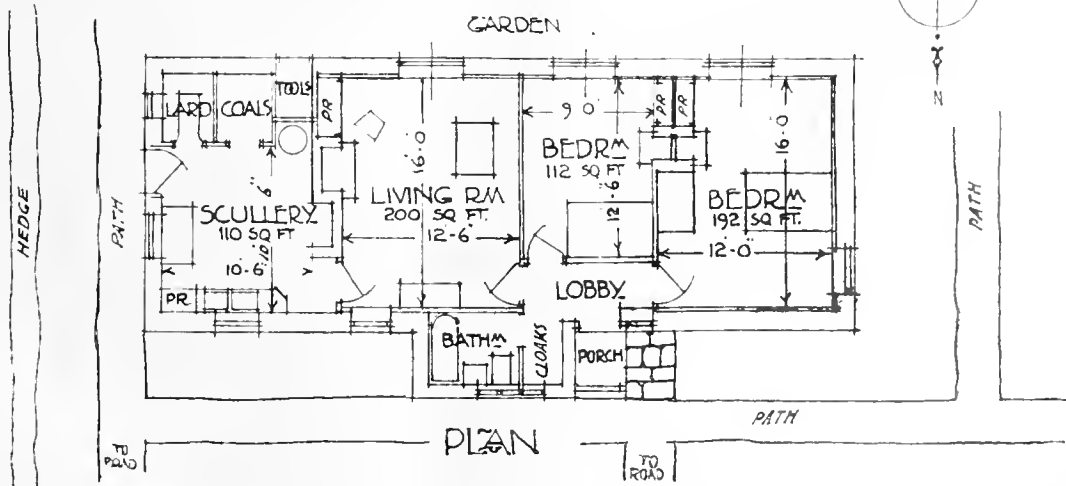
SECTION



SOUTH ELEVATION



NORTH ELEVATION



SCOTTISH HOUSING COMPETITIONS : FIRST PRIZE, THIRD SECTION.

Mr. JOHN ARTHUR, I.A., Licentiate R.I.B.A., Architect.

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 Duty £283 0 0
 Accepted

CHELTEMHAM.—For work at Naunton Park Schools, for the Education Committee:—
 Saunders, E., and Son £1,099 0 0
 Accepted

CHELTEMHAM.—For painting and duresco work at Pitville pumproom, for the Corporation. J. S. Parker, borough surveyor:—

Billings, A. C., and Sons, Ltd.,
 Cheltenham £549 0 0
 Collins and Godfrey, Cheltenham 517 0 0
 Channon, W. C., Cheltenham* 395 0 0
 *Accepted.

LONDON, E.—For supply of boilers, etc., for the Stepney Electricity Committee:—
 Two new boilers to replace two of those supplied by the Howden Boiler Co.:—

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Hopkinson, J., and Co. £175 0 0
 Twelve feeder and 25 disconnecting boxes:—
 W. T. Henley's Telegraph Works Co., Ltd. £375 0 0
 Universal Electric Manufacturing Co. 300 0 0
 British Insulated and Helsby Cables, Ltd. 241 0 0
 Lucy, W., and Co.* 217 0 0
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LONDON, E.C.—For executing repairs, etc., at 60, Anwell Street, Clerkenwell, for the Metropolitan Water Board:—

Webb, J., and Son, Clerkenwell £59 10 0
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LONDON, W.C.—For repairs to pavement lights at public conveniences, for the Westminster City Council:—

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LIST OF TENDERS OPEN.

COMPETITIONS.

April 12.—Messrs. Robert Ingham Clark and Co., West Ham Abbey, Stratford, E.15. Hundred-guinea design for Trade Mark. We gave conditions on p. 112 of our issue of February 12.

April 14.—Daily Express Competitions for best plans of houses and homes. One thousand guineas in the Professional Section for Architects and Amateurs. Five hundred guineas in the Amateur Section for Amateurs only. Designs to be sent to the Daily Express Office, 8, Shoe Lane, E.C., by 6 p.m. on April 14 next.

April 30.—Bristol Housing Committee invite designs from architects practising in Somerset, Dorset, Wilts, and Gloucester, for 5,000 workmen's dwellings. Premiums offered of £250, £150, and £50. Particulars of the City Engineer, 63, Queen Square, Bristol, on receipt of £1 is. (returnable). Designs to be sent to Edmund J. Taylor, town clerk, the Council House, Bristol.

May 5.—The Borough of Ipswich invite designs for a working class suburb. Three premiums offered of 50 guineas, 30 guineas, and 20 guineas. Conditions and plan from the town clerk on payment of half a guinea (returnable). Designs to Will Bantoff, town clerk, Town Hall, Ipswich.

No Date.—Designs are invited by the Corporation of Glasgow for the laying out of various areas in connection with the city's housing schemes, and for plans of houses to be erected thereon. Various premiums, varying from £25 to £400, are offered. Particulars from Mr. J. Lindsay, town clerk, City Chambers, Glasgow. See advt. on another page.

April 30.—Designs wanted for war memorial clock tower at Brixham, to cost £1,000. No premiums offered. Designs to H. M. Smardon, Hon. Sec., The Bolton Cross, Brixham. See advt.

BUILDINGS.

April 10.—Repair and redecoration externally of (1) the Tate Central Library, Brixton Oval; (2) the Tate Library, South Lambeth Road; and (3) the Carnegie Library, Berne Hill Road.—For the Lambeth Borough Council.—B. Penny, town clerk, Town Hall, Brixton Hill.

April 12.—Reconstruction, etc., after fire, of Drumma House, Skewen, Glam.—For the Glamorgan-shire Joint Poor-law Establishment Committee.—Plans and specifications at the office of T. Roderick, architect, Asbroke House, Aberdare. Tenders to the Secretary, W. Spickett, Station Square, Pontypridd.

April 14.—Whole or separate tenders are invited by the West Riding Education Committee for the erection of additional classrooms at Adwick-le-street Central Council Schools. Plans and specifications with quantities on application to the Education Architect, County Hall, Wakefield. Tenders to the Clerk of the County Council, County Hall, Wakefield.

April 14.—Reconstruction of the farm buildings at the Union Farm, Dearnley.—For the guardians of Rochdale Union.—Plans, specifications, and conditions of contract at the offices of H. H. Clough, M.S.A., architect, 32, Lord Street, Rochdale. Tenders to R. A. Leach, clerk, Union Offices, Townhead, Rochdale.

April 23.—Roofing with slate the caretaker's residence at the smallpox hospital, Binchester Whins, Durham.—For the Auckland, Shildon, and Willington Joint Hospital Board.—Tenders to S. Adams, clerk, Union Offices, Bishop Auckland.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

RECEIVED.—L. A. A.—C. S.—P. C. B. and Co.—P. A. Co.—J. D. R.—C. L. and Son—B. L. and Son—B. of S.—N. C.—W. E. W.—H. A. C.—W. and Co.—J. H. and Co.—G. C. C.—W. and Son—J. W. V.—G. M. C. C.—S. J. Co.—M. Co., Ltd.

P. B.—No.

T. R. S.—Please send.

H. St. J.—Very doubtful people.

Mr. Henry Edward Stilgoe, the city engineer and surveyor of Birmingham, has been appointed chief engineer to the Metropolitan Water Board, at £2,500 a year.

Mr. P. C. Smith, Dunfermline, has been appointed superintending architect of the housing scheme of the District Committee of the Middle Ward of Lanarkshire.

Fulham Borough Council have authorised their engineer to proceed with the manufacture of bricks from clinker and lime. It is estimated that such bricks can be made for 30s. per 1,000.

In our issue of March 26 we omitted the name of Mr. S. B. Russell, F.R.I.B.A., who has been appointed as Chief Architect, House Planning Branch, as distinguished from Mr. Raymond Unwin's appointment as Chief Architect, Town Planning.

Sir A. Kay Muir, of Blair Drummond, Doune, has informed the town council of his intention to provide a town hall for the burgh. The monetary value of the gift is £4,000. The only stipulation is that the plans and site of the building be submitted to Sir A. K. Muir for his approval.

A service in memory of members of the Surveyors' Institution who fell in the war was held on the 31st ult. at St. Margaret's, Westminster. A short address was delivered by Canon Carnegie, who said the Surveyors' Institution numbered some 5,000 men, and of these more than half had given their services to their country during the war.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

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Red Triangle Institute and Club, constructed with salvage war hut materials. Plan, elevations, and	

Strand, W.C.2

sections. Mr. S. Phillips Dale, M.S.A., Architect.	
Military Decorations on The Mall, Buckingham Palace. Pylons and Obelisks. Mr. A. I. Pitcher, H.M. Office of Works, Architect.	
New Master's House, Leighton Park School, Reading. Plans and view. Messrs. Fred Rowntree and Son, and Ralph W. Thorp, Architects.	
A Roadside Cottage, Hertford. View and plan. Mr. Andrew Gray, M.S.A., Architect.	

Currente Calamo.

When a builder is asked for an estimate as to some proposed work, and he gets out plans and specifications as if he had secured the job, can the person inquiring be made to pay? That is the sort of question that often arises, and the answer must depend upon what happened—i.e., upon the evidence brought before a Court. For there is no custom affecting such a state of facts which would be binding on the parties in the absence of a clear contract. The recent case of "J. Newton and Sons v. Goddard" is instructive as to the legal view of the matter. The plaintiffs sued the defendant for two guineas in a county court as their charge for "services rendered, and work done." The defendant said he had only invited the plaintiffs to send him an estimate as to an outbuilding. Admittedly the plaintiffs then prepared plans and specifications for the work, which were sent to defendant, but were not used. The county court judge had held that the work was done, and, as he inferred, at the request of the defendant, and therefore there was an implied promise by him to pay, which meant judgment for the plaintiffs. On defendant's appeal to the High Court Justices A. T. Lawrence and Shearman held, on the evidence, that the plans, etc., were prepared by the builders with a view to their getting a good job. But there was no proof of a request for them by the defendant, nor of any custom making him liable to pay. So the appeal was allowed and plaintiffs' judgment set aside. These things are sometimes done to rush an inquirer into becoming a client, when he is only asking for an estimate!

The week before last over a million people received out-of-work pay, and only 300,000 of these are men discharged from the Army. The out-of-work donation is being shamefully abused in various parts of the country, and the ease with which out-of-work pay is to be obtained is the main cause. A strong protest was made at a meeting of the Southwark Board of Guardians last Thursday against the abuse encouraged by the Government. Mr. Charles Way stated that a woman presented herself for relief. She was given £1 in money and 10s. in kind for eight weeks. It was subsequently discovered that she had been working for her father.

She then went to the labour exchange and was told to fill in a form and was then granted £2 3s. as unemployment pay. This, as Mr. Way said, was a clear case for prosecution. There are, we believe, hundreds of others. In some parts the street corners are rendered dangerous by the assemblage of these paupers of the worst sort for gambling and till the public-houses open, who ought to be found the only labour best suited to their needs in gaol.

As a step toward increasing building activities throughout the country, which is the one immediate hope of reducing unemployment, the United States Railroad Administration has cut down the freight rates on building materials of all descriptions from the present high level to the pre-war standard. The proposal, put forward by some of the leading economists in the country, met the approval of Mr. Walter D. Hines, Director-General of Railroads. The cut will apply not only to material for general construction of buildings, but material for roads as well, in the hope that private interests will seize the opportunity with the opening of spring to let contracts generally. Such a cut here would, of course, reduce the price of lumber, bricks, cement and structural steel, and would be an invitation to those who are contemplating building to go ahead with the work. That, in turn, would give employment to a very large number of mechanics. But our railway controllers are not built that way, and the Government prefers to subsidise "unemployed," and let those who get it gamble with it in the streets!

THE HOUSING BILL.

The second day's debate last week was, in reality, as poor as the first, the one pertinent and practical speech being that of Colonel Roysds, the Unionist member for Grantham, whose simple remedy for the housing difficulty—namely, to give the builder a free hand, remove the great impediment of the land taxes of the Finance Act of ten years ago, and there would soon be houses enough for everybody wanting them—has, of course, been so often insisted on in these pages. No Government of the sort we get in these days, of course, is ever likely to admit that, not even when—so that great financier Mr. Horatio Bottomley says—Mr. Lloyd George comes home bringing ten thousand millions of money from Germany! When the big split between Mr. Lloyd George and the Conservatives comes, and the next

General Election soon after (and a good many people say neither event is very far off) we shall probably hear a good many more speeches like that of Colonel Roysds; but for the moment very few members of Parliament care a hang about housing, except so far as it affords the opportunity of making pretty speeches—to their constituents—about the slums and town planning, with which their private secretaries can easily cram them when a debate like that of yesterday week is coming on.

The pith of the matter at the moment is, Will Dr. Addison be allowed by the Treasury to commit the Government to the expenditure over and above the penny rate the local authorities are to be forced into giving? We doubt it. If Dr. Addison himself believed he would get it he would have armed himself last week with figures showing the probable amount the State is expected to find. He has no such figures, because yet awhile it is impossible to get them. On that ground alone the Treasury may decline to stump up.

This is so evident that it is actually checking even the most speculative builder's desire to build on his own account—now. If the Treasury is really inclined to plank down enough money, and the local authorities build at no profit—much more likely at a loss—it is evidently all up for the time with private building. Moreover, if the new municipally-built houses are really the models of plan and construction we are promised, the owners of other houses will soon find them empty, or only tenanted by the contented slum-dweller. We seem therefore on the road to the housing of the working classes—nine-tenths of the nation—in some such houses as the local authorities think good enough for them. What sort of houses are the workers likely to get from the State or the municipality as builders? The history of the "Woolwich Bungalows" supplies the answer to that question. They are more or less in a bad condition, but the Department for some time refused to do anything. After much unnecessary friction and irritation among the people living in the houses the Government now gives way, reduces rent, and promises repairs. Had a private owner behaved thus what denunciations of his selfishness and neglect we should have heard! Why and how did these houses become unsatisfactory, and are they and others like them to be "models" for the future?

Major Astor, who was put up last week to reply on the debate in Mark Tapley-like contrast to his chief's lugubrious speech the day before, had nevertheless to admit that he was "surprised" at the "welcome" he got. The Government, so he said, does not contemplate the extinction of private enterprise, and he does not expect that the 1,800 local authorities would immediately set up staffs of builders and surveyors, but would induce existing builders to become contractors. The ideal,

so he says, is to get the rent raised gradually, so that by 1927 economic rents, and not charity rents, would be in operation. Admitting that the housing and town-planning scheme would be costly, he asked—Had the critics ever tried to estimate the cost of Bolshevism? The money spent on housing would be an insurance against Bolshevism and revolution. Will it? Or, rather, when presently the Government once again has played the masses false, is not resultant wide discontent certain?

The King struck the true note last Friday in his speech to the representatives of local bodies and others whom he received at Buckingham Palace. Not only houses but homes are what are wanted, in the gradual appreciation of which their habitants will learn to care better for the homes and for themselves than too many do at present. Such appreciation, we fear, will never be evoked by stereotyped Government control, accompanied by all the waste inseparable therefrom. We wish his Majesty had amplified the few words which evidenced his own knowledge that the shortage of houses existed long before the war, and pointed out the one practical remedy—namely, the unloosing the fetters of the man whose real business it is to make up that shortage. Mr. Lloyd George mined the builder by inches in 1909-10. The Government is piling all imaginable obstacles in the way of his restoration by taking good care that he shall not get either men or materials at prices which will induce ordinary clients or the philanthropic to build anything. An ounce of realisation of this fact would be worth tons of all the twaddle talked these five years past by the well-meaning theorists of one sort and another of whom most of us—except Dr. Addison—are sick and tired.

Before the Bill becomes law we suppose every Department or Ministry will feel bound to have a finger in the pie, if only to keep itself in the limelight. But there really are one or two recommendations which break new ground in the Final Report of the Ministry of Reconstruction with regard to the sale by the local authorities of subsidised houses, which is sanctioned by a clause in the Bill. The obvious difficulty, of course, is that these houses, being put up at a time of maximum building costs, will presently depreciate in value, and consequently, for some years to come at any rate, will be but unattractive securities for building society mortgages. The remedy advised is that local authorities should be empowered to guarantee the repayment of such advances "to the extent to which the mortgage exceeds two-thirds of the 'value' and does not exceed 80 per cent. of the cost of the house." We take it, of course, that "value" means ascertained value at the time of repayment. A second proposal is to empower the larger boroughs to establish Municipal Savings and Housing Banks, and to employ the funds of these institutions for advances to house-purchasing depositors; while a third is "that the War Savings Committee's scheme for the issue of Housing Savings Certificates, on the same lines and in place of the existing War Savings Certificates, is founded on sound principles, and should have the consideration of the Government." The last two recommendations are doubtful ones. Not even a municipal bank can prudently invest any considerable portion of its funds in investments too doubtful for a building society to touch without collateral security; and from the standpoint of any bank any mortgage on terms giving security to the borrower has grave disadvantages. And if the State is to raise

money for housing purposes on such terms as the holders of War Savings Certificates enjoy, it must either re-lend that money at over 5 per cent. or incur a loss. Working-class borrowers will not willingly pay for loans at this rate, and before very long, by reliance on different methods, the State should be able to obtain money for housing purposes more cheaply. But the idea is worth discussion. Any scheme that will really enable the thrifty worker to become his own landlord deserves so much, for it is the best possible investment for his savings.

THE FUTURE OF ARCHITECTURE.

By JOHN MURRAY, F.R.I.B.A., F.S.I.

It was said by a wise man a long time ago that "there is no new thing under the sun," and that appears to be largely true to-day. About a year ago I expressed some opinions in the Press, and last July I gave some further views to the Special Committee of the R.I.B.A. appointed to consider this subject, all of which were based on my own experience. I now learn that very similar views have been expressed by a number of past-Presidents of the R.I.B.A., and in the year 1892 they were collated by the late Mr. William H. White, F.R.I.B.A., Secretary of the R.I.B.A., in his essay entitled "The Architect and his Artists." This essay is in the Loan Collection of the Institute Library, and I commend it to the careful perusal of all those interested in this important subject. For the benefit of those who may not be able to read the essay, I venture to quote some of the opinions enumerated in it, and beg to draw attention to those of Sir George Gilbert Scott and Mr. John Macvicar Anderson:—

It was Addison, I think, who said that the public are always even with an author who has not a just deference for them; and certainly artists who flout the public in the way that is common in this country receive from them in return a like measure of derision and slight regard. I am not disposed, however, to believe that the public are so ignorant or so dull in these matters as the aesthetes of our time would have us believe. As regards the most practical art, the public view it from a standpoint totally distinct from that of painting or sculpture. They accept the dictum of Macaulay—that architecture is "an art which is half a science, an art in which none but a geometrician can excel, an art which has no standard of grace but what is directly or indirectly dependent on utility."

The Indian Government want practical men, and they do not hesitate to say so. They do not want aesthetic artists who cannot do the work of an "architect and surveyor;" as that functionary understood it in the time of Wren and Chambers. The so-called "artist-architect," whose services are accepted by the Department of Public Works in India, is well received and civilly treated, but always in a subordinate capacity. He makes the design of a building, which his superior officer, who is generally an engineer, carries out independently of the designer.

Although the moderns may more than ever be compelled to study the past, the future is to the man, no matter what his profession be, who can face the facts and read the problems of the present.

The architect is still tossed upon a sea of precedents, still a prey to the newest archaeological affectation and phase of artistic fashion, not a faithful recorder of the spirit and history of his own time; and at the eleventh hour of a long period of historical revival he is agitated by counsels which, if accepted, would place him on a level with those whom he should employ as his subordinates. Here, perhaps, I may be allowed to explain that, in treating the subject of the architect and his artists, I am not using the word "artist" in the exclusively æsthetic sense in which it is now understood, but in the sense of a handi-craftsman.

In Western Europe, during the Mediæval period, the names of artists engaged in the

construction and adornment of cathedrals and other buildings have come down to us, but the architect as we understand him is conspicuously absent or non-existent.

There have, however, existed such offices as architectus and ingeniator, or ingenarius (corrupted to engineer), supervisor (corrupted to surveyor), magister operum, and clericus operationum, devizor, master-mason, and other appellations distinguishing persons who had charge of the execution of such buildings.

In Paris, and France generally, the architect is the sole and supreme master of the work, and his relations with the master-workmen are constant and direct. He makes his contracts not with one capitalist, but with a dozen master-tradesmen, who each work under his direction, and who look to him only for orders to fix materials, and assist each other at the several stages of the work. This fact renders it essential for an architect in France to be a constant visitor on the works with the superintendence of which he is intrusted; and I have known architects who, if their buildings were in Paris, visited them daily, or, if at a moderate distance from the capital, twice or three times a week. The first time I spoke to Viollet-le-Duc was in 1860, on the works at Notre Dame, which he then visited daily at 5 p.m.; and the last time I spoke to Louis Duc was in 1873, on the works of the Palais de Justice, where he was daily engaged with his assistant-architects and draughtsmen.

The variety of those sciences and the multifarious duties which, according to Philibert de l'Orme, pertain to the architect, have necessarily encouraged the rise of subordinate artists, each with special attainments, and each able to afford him assistance in his practice. It was quite impossible for one man to combine in his own person all the arts and sciences which the ancient architect was supposed to master; an ordinary lifetime is not long enough to acquire them. If one dared to advance a proposition that the architect whom Vitruvius drew was an ideal representative creation—the genius of a trained band of workmen—and not an individual, the practice of the Middle Ages would serve to support it, and that practice was founded directly on Roman precedent. During this century—indeed, ever since the Reformation—no individual has pretended to the possession of practical experience in even half of the arts and sciences which constituted architecture in its ancient sense. British architects during the two preceding centuries, and in the early years of the present one, were largely indebted to foreign draughtsmen for the design of some of their best works, and they have invariably been what are now known as general practitioners; they were certainly not accomplished or effective draughtsmen. The abilities in this respect of Sir Christopher Wren, who was Surveyor of His Majesty's Works—the Office of Works of his time, as Mr. Mitford once happily called him—would not command much respect at a Royal Academy Exhibition of the present day. No one, in fact, supposes that Wren executed with his own hand the drawings prepared for the design and execution of the numerous edifices with which his name is identified. Yet even to the practised eye all those edifices possess an extraordinary family resemblance, an absolute harmony of conception; and the majority of them are excellent examples of architecture. If one cross to Paris to examine the Porte Saint-Denis, of which François Blondel, who began the practice of architecture at the age of forty-seven, was the architect; or the dome of the Invalides, by J. H. Mansart, who built the palace of Versailles and a host of other State works, it is similarly difficult to believe that such men made the drawings for the design of those buildings. It is certain, moreover, that Sir William Chambers was not what is called a draughtsman, though Somerset House, the finest building of the kind in London, is known to be his masterpiece. All such men were surveyors in the modern sense of the term, and liable to be described by Mr. Norman Shaw as "commission agents." Hence there is nothing extraordinary in the assertion that there have been persons—surveyors rather than artists or craftsmen—who, being men of judgment, position, and means, have so used their opportunities and so exercised their natural abilities, of a scientific rather than an æsthetic nature, as to produce architectural monuments of which their posterity is proud.

The surveyor-architect who employs, not a ghost, but draughtsmen, to make drawings for the buildings with the design and superintendence of which he is intrusted is ordinarily a successful practitioner. Why is this so? In plain words, is his success due to the invincible ignorance of the British public in matters of

art or to their understanding better what they really want than the artists who abuse them? His success is mainly due to the fact that many clients believe they will be better treated by him in matters of construction and sanitation than by the architect who professes to be an artist only; and a few, perhaps, believe that such important branches of the architect's duties will be more cheaply performed by the surveyor who does them himself than by the artist who employs specialists for the purpose. Others, who have more than a superficial knowledge of the business of architecture, prefer to employ an architect who is also a surveyor (in other words, Mr. Norman Shaw's "commission agent"), because they know that he will personally plan the drainage and general sanitary arrangements of the house they wish to possess; that he will plan the ironwork required in the construction, calculate the scantlings and the weights of the girders and joists; that the specification of the works will be written under his immediate direction, and that he very probably will take out the quantities himself; and lastly—a by no means unimportant item of an architect's duties—that he will be able to decipher the contractor's hieroglyphics after the house is finished and he is called upon to settle the accounts. Further, it may be reasonably assumed that the "architect and surveyor" will personally survey the works in progress because his tastes lie that way—that is, in the direction of the scientific and practical side of an architect's duties. But then, the design! Will the architect and surveyor design as well as the architect and artist? Let those who ask that question inquire of the hundreds of admirable draughtsmen who are perfectly competent to design, and who will lend their artistic abilities even to architects and surveyors at a weekly salary of from two to four guineas. Are these men ghosts? In any case their employment is an open transaction which will bear the light of inquiry, for they are paid by their master—the architect and surveyor—out of the 5 per cent. commission to which he is entitled for works executed from his design and under his superintendence. This may not be a brilliant phase of professional life, though numerous instances may be adduced in which the taste and judgment possessed by many surveyor-architects who are not artistic draughtsmen have immensely assisted the aesthetic development of their draughtsman's design.

The late William Burges, A.R.A., told me that he often designed by the aid of a draughtsman, and that he considered his best designs had been made when sitting beside his draughtsman and telling him how and what to delineate on the paper before them. I have frequently, when a very young man, drawn upon paper what my then master, the late John Pritchard (of Llandaff), sitting beside me, indicated in words. Both these accomplished architects, from their exceptional talent as artists in the modern sense of the term, enjoyed the confidence and respect of their brethren.

That the general contractor can be dispensed with in certain cases one has only to examine the Hotel Métropole at Brighton, and other buildings of like importance in London; and that he may one day be dispensed with altogether I fervently hope, not only for the sake of the architect and the artists whom it ought to be the latter's function to direct, but also for the arts which, from the highest to the lowest, in every ancient monument extant, admit their allegiance to architecture. There is danger, of course, in any reversion to the old custom of an architect, as the agent of his employer, purchasing materials and employing labour. Thereby the abuses against which Professor Donaldson and others contended, and to destroy which they founded the Royal Institute of British Architects, might be revived.

Not a word should be said against the man who, having studied architecture with the view of becoming an architect, chooses to devote his abilities to any architectural art of trade—the words were once identical. Nor need any complaint be made of the architect-trader who is pecuniarily interested in the materials which he advises his clients to use, or which, as the agent of his clients, he specifies in buildings entrusted to his design and superintendence, provided, of course, he tells his clients that he is thus pecuniarily interested.

OPINIONS OF THE PRESIDENTS OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS FROM 1860 TO 1891:—

PROFESSOR COCKERELL, R.A., 1860.

The partisans of the scientific and the imaginative have ever been in rivalry. But the evidences of history will prove the necessity of

both these faculties in the accomplished architect, and it is to the cultivation of them that the Institute will direct its impartial attention in due proportion for the glory of the art and of the country.

SIR WILLIAM TITE, M.P., 1861-63.

Architecture is an art as well as a science.

PROFESSOR DONALDSON, 1863-65.

In speaking of the professional career, I must venture to urge the importance of young men acquiring the business qualifications of practical life, as being essential to their satisfactorily realising all the fruits of the more intellectual departments of their pursuit.

ALEXANDER J. B. BERESFORD HOPE, M.P., 1865-67.

While architecture is an art, it is also what, for want of a better term, I must call a business or craft. (In a footnote Mr. Hope added: "Profession applies to the person who professes, and not to the thing professed.") It is this perpetual combination of the utile and the dulce, the perpetual necessity of adapting, style, ornament, and proportion to construction, and of so manipulating construction that it shall not sm against beauty or detail or mass, which makes architecture the peculiarly complicated and scientific thing which it is—an art and something more than art.

SIR WILLIAM TITE, M.P., 1867-70.

Our desire, as members of this Institute, must naturally, and always ought to, be to encourage architectural education.

THOMAS HENRY WYATT, F.S.A., 1870-73.

It would be strange indeed if an institution like ours was indifferent to a scheme which practically tested the progress of that knowledge of the various arts and sciences connected with architecture, for the advancement of which this Institute was actually founded.

SIR G. G. SCOTT, R.A., 1873-76.

Our camps are visited by that great enemy of union and sympathy, self-conceit. I do not refer to that noble self-reliance which gives a man courage for his work, however difficult, but that lower sentiment which too often makes him intolerant of his fellow-labourer, however true-hearted, and which, by means of mutual scorn and depreciation, tends to encourage those whose innocence of art keeps them beyond its range, and warns the careless public against the employment of those who thus bear witness one against another.

MR. CHARLES BARRY, F.S.A., 1876-79.

We may learn from our detractors how useful it is in these days of extensively diffused scientific knowledge and scientific inquiry to pursue exhaustively our inquiries into these scientific and practically important subjects. Let us welcome, then, the discussion of these matters, and it may be we shall do more thereby to add to the power of the architects of the next generation to carry out large works—beautiful works—and works distinguished by their sanitary excellence, than we ever can by the more exciting discussions whether architecture attained its maximum excellence in the thirteenth century or in the days of Queen Anne. We ought to take up courageously the challenge so frequently made to us, and to discuss among ourselves—with that special knowledge we ought to possess, and which many of our members do possess—technical questions affecting the life and happiness of those whose houses we are called upon to design and arrange. It ought to be impossible to allege with truth, as is so often done, that architects care only for the æsthetic, and delegate to subordinates the vital questions of ventilation, warming, lighting, sanitary arrangements, and cognate matters.

JOHN WHICHOORD, F.S.A., 1879-81.

I am induced to quote a passage from an address delivered from this chair by the first professional President who ever sat in it—I mean Charles Robert Cockerell. He was a man who was, if anything, an artist. His words, uttered twenty years ago, when the graphic side of architecture was less understood and less followed than it is at present, merit your immediate attention:—"So rare and difficult," said he, "is the union of the scientific and graphic departments of this art in the same person that theoretic writers are at variance as to the preference to be given to the one or the other faculty. Thus the learned Rondelet defines architecture as 'a science the object of which is to direct the operations of every sort of building, so as to unite convenience, solidity, and beauty of form.' . . . Most modern architects are rather decorators than constructors, aiming, like the painter and sculptor, chiefly to please, indulging in captivating but often impracticable designs, induced by their associations with the imaginative arts of painting and sculpture."

The late Professor Cockerell makes a pertinent quotation from Rondelet, who, at the very beginning of this century, described the architect of his day as a decorator rather than a constructor. Are we quite convinced in our own minds that Rondelet, if he lived at the present time, would define an architect in language more agreeable to our own sense of what he should be? Are we quite sure that the cry for art, more art, in which I admit this country was long deficient, has actually provided us with what we required? Has not the tendency in England of late years been to unduly exalt the art at the expense of the science of architecture? So that architectural science is gradually becoming the speciality of men who are not, and who do not pretend to be, architects.

GEORGE EDMUND STREET, R.A., 1881.

The real interests of the public and of ourselves are identical. The obligation to carry on the business side of our work upon the highest rules of honour or integrity, as between man and man, is placed in the very front of the conditions of membership of this Institute. We admit of no compromise or conditions, and the condition of membership here is undoubtedly that of working thoroughly in the spirit and traditions of gentlemen. . . .

SIR HORACE JONES, 1882-84.

I hold and think that any examination testing the scientific acquirements or the maturer and readier intellectual qualities of the young architect need not militate against his artistic and æsthetic powers, any more than the scientific training, education, and examination of the aspirant for military employment need exhaust his physical qualities, or his moral ones of courage and conduct.

MR. EWAN CHRISTIAN, 1884-86.

But no instruction that can be devised will make men architects who have not the inborn genius to become so; it may, however, make them well-instructed practitioners, and everything that can be done towards raising the general standard of knowledge must necessarily be in the highest degree advantageous. . . . That there must, nevertheless, be exceptional cases is also inevitable, and it is, in my judgment, not undesirable that so it should be. There will, I trust, always be some exceptional men, deep students and real artists, to whom the ordinary rules of examination cannot apply; men of genius, to whom solitude is the nurse, who may not see with our eyes, but whose presence amongst us would necessarily be welcomed; men who, having proved their power, could not be asked to submit to ordinary rules. There are such men now, and there may be more in the future, and it would be for our welfare to include them all amongst us.

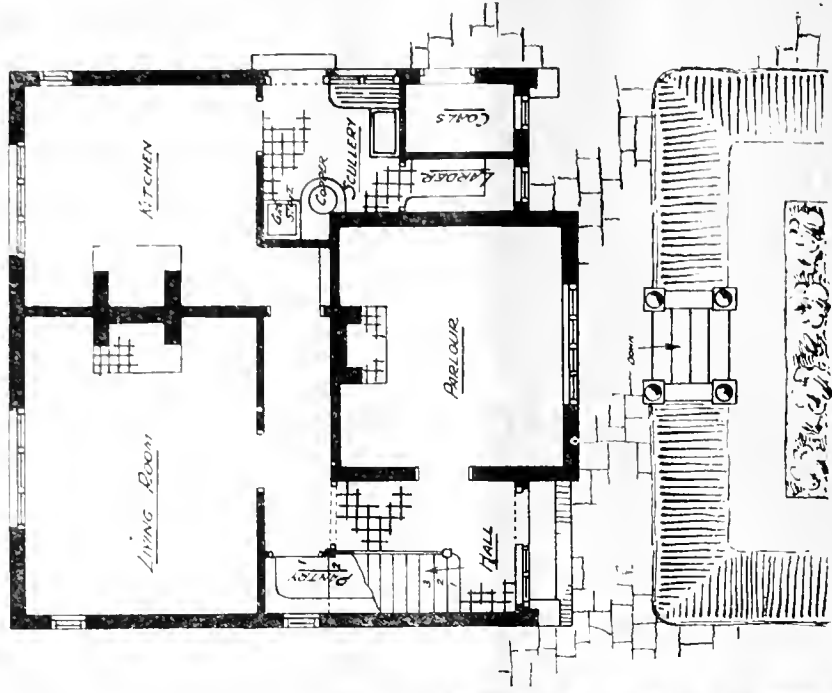
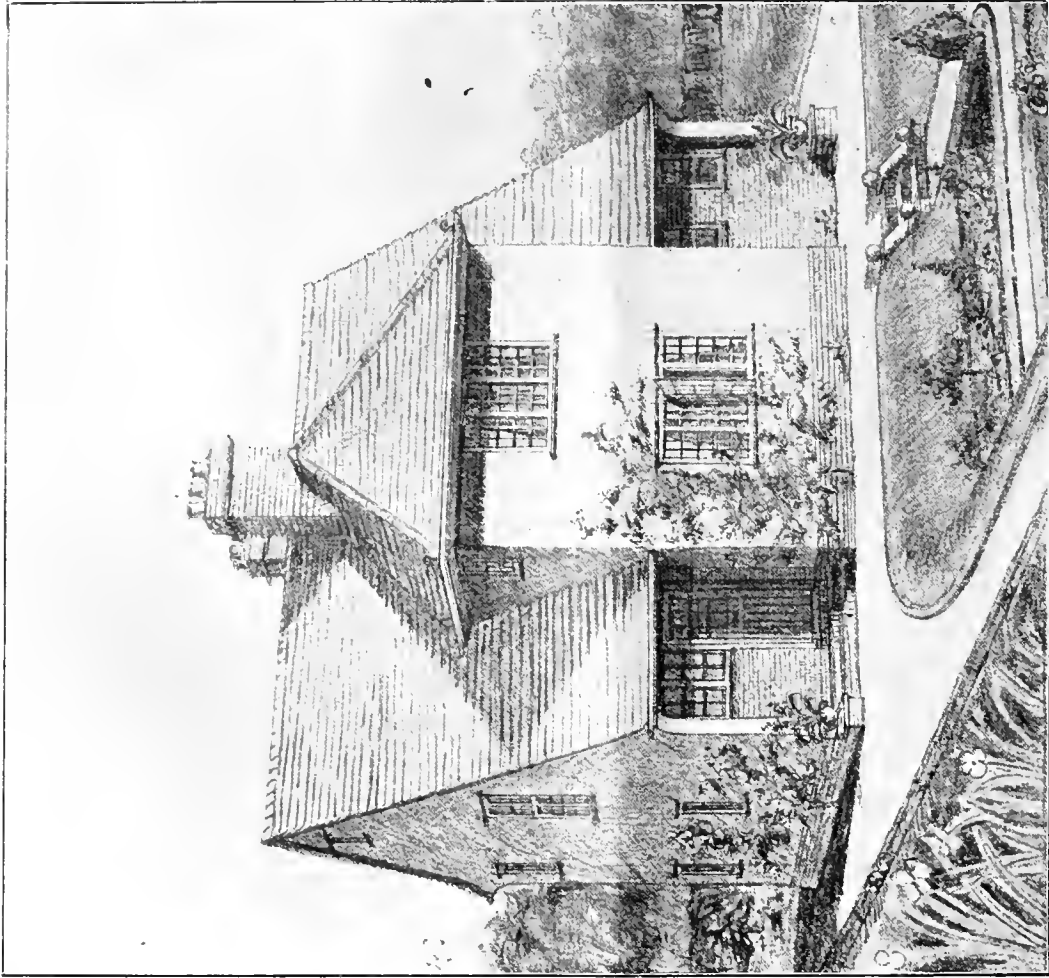
EDWARD FANSON, F.G.S., 1886-87.

When I was a young man my feelings used to induce me to think that the only really important part of architecture was art, and that artistic power was wholly an instinct—that, in fact, the highest quality of an architect was to be an artist. But, depend upon it, art power does not suffice to make an architect. The grandest effects in architecture have depended quite as much upon constructive as upon artistic knowledge. . . . I am, therefore, an advocate for the systematic teaching of art, as far as it can be taught, and of all those sciences pertaining to the theory and practice of building construction. The traditional custom of apprenticing young men to a practitioner, whereby they can closely follow and assist in the work done in an architect's office, is, I still think, a right system, advantageous to the apprentice if he be worth anything at all; but it is far, very far, from being enough, and the more often this is emphasised by those who occupy the position I have the honour for a time to hold the better it will be for the profession—at least, until the subject of architectural education is better understood than it is at present, or until people cease to repeat the formula that architects, like French cooks, must be born and cannot be made.

MR. ALFRED WATERHOUSE, R.A., 1888-91.

We have heard something lately of the conflicting terms "professional man" and "artist" as applied to the architect. Now, in my opinion, the true architect is both. The higher and more systematic education which we are hoping for and getting will train us in the efficient and easy practice of our profession—a profession which is open to all men of education, intelligence, and industry, and one in which the greatest successes will attend those to whom, further, an artistic perception has been given, and in whom it has been carefully cultivated. In speaking of an architect as an artist I do not mean that he is to be a clever draughtsman merely—far from it. A man may be the most exquisite of draughtsmen, and yet

A ROADSIDE COTTAGE AT HERTFORD.



ANDREW GRAY ARCHT.
HERTFORD.

GROUND FLOOR PLAN.

A ROADSIDE COTTAGE AT HERTFORD.—MR. ANDREW GRAY, M.S.A., Architect.

be entirely deficient in the critical sense of what it is that makes a work of architecture beautiful. . . . The architect, on the other hand, can find nothing to do, can give no satisfactory proof of his capacity, until somebody comes to him who is willing to trust him. Consider what that trust is. Not only is he entrusted with the expenditure of large sums of money, but of money expended in such a way as to affect the comfort, the happiness, often the whole tone of the existence of those who employ him. . . . The architect, therefore, has to be not only an artist and a skilled constructor, but he must learn to appreciate the value of other people's money; he must be considerate, honest, patient, firm; and, above all, he must learn in imagination to put himself in the place of his clients so as to understand their desires.

MR. JOHN MACVICAR ANDERSON, 1891.

What is the argument on which this opposition to examination is based? You will find it embodied in a memorial which was presented to the Council, and in a letter which the memorialists published in the *Times* (March 5, 1891) under the title of "Architecture: A Profession or an Art?" words which appear to me to suggest, under an attractive form, an entirely false issue, and one which in its essence is misleading. To declare that architecture is an art is to repeat a truism. . . . It is an art and a profession. To ask whether it is an art or a profession is not only, in my judgment, to put the subject in an incomplete and a misleading form, but to endeavour to divorce two things which are indissoluble. Why, the unique characteristic of our calling is that it combines such different qualifications—artistic taste, scientific knowledge, business proficiency! We have no claim to be architects in the true and full sense of the word unless we are artists, able so to dispose and to clothe the materials with which we have to deal as to produce beauty of form and proportion. But we must also be scientists, so familiar with the strength and properties of materials as to combine them in sound construction; and we must, moreover, be men of business, so conversant with affairs as to be able to protect the pecuniary trusts which are committed to us. . . . The body politic of architecture is composed of parts, each one of which is essential to the unity of the whole, and without any one of which it would be incomplete and useless to society. There are those amongst us whose proclivities and aspirations are especially artistic; there are those whose genius is constructive; there are those who, *par excellence*, are men of business. The ideal architect is the man in whom these qualities are united—who is an artist, a constructor, and a man of business. It is given to few to excel in all, though there are many who, possessing a general knowledge of each, are proficient in one or the other. And is one who is distinguished by artistic taste to regard with indifference or a species of contempt others who may be less artists and more scientists? Or is one whose genius is construction to look askance at others who are more purely artists? As well might the foot say to the hand or the eye to the ear, "I have no need of thee," as if the one or the other were the body. No; architecture is not merely an art, it is not merely a science, it is not merely a profession; it is a combination in one of the artist, the constructor, and the man of business; and any who claim that it is one only, to the detriment of the others, detract from the nobility as well as from the unique character of their calling.

From the foregoing views it appears to be clearly demonstrated that modern architecture is an art which cannot under modern conditions be satisfactorily attained or correctly practised without the combination of a full share of scientific and financial considerations.

Having due regard to this truism, and also to the fact that in the past it has not been universally understood and adopted, I think it is essential for architects to realise now that there is a danger of comparative disaster overtaking private practitioners in the profession which is known as "architectural," and this would probably retard the future advancement of architecture in Britain.

Some adequate remedy is surely necessary, and I therefore venture to inquire:

(1) Is not the so-called supervisor (surveyor) architect, whom the public have largely patronised, if he knows his work, designs and produces fine architecture by the aid of science and finance combined with business considerations, worthy of

the high appreciation of the architectural world?

(2) Would not such appreciation, when awarded for the best work, practically coincide with the system of modern eulogy bestowed upon such old masters as Inigo Jones, Sir Christopher Wren, Sir William Chambers, John Nash, and many other modern supervisor (surveyor) architects, including many distinguished French architects?

(3) Or, is it to be agreed that an architect who can design good architecture is incapable of acquiring a knowledge of and practising a full share of science and finance in connection with the art of architecture; or, if capable, that these essentials, which are required by the public, are unnecessary or beneath the artistic dignity of architectural art, thus producing conditions which have recently received severe stricture from a distinguished representative of the Government?

(4) Is not the present time, the eve of the Great Peace, the most opportune moment for some sufficient and guiding policy to be clearly defined, and is it too much to expect that this might be done by the Royal Institute of British Architects in connection with the Royal Academy of Arts? These two authorities practically succeeded the mediæval art guilds, and now the developments and responsibilities of a strenuous future lie before them. The former was founded in the year 1834 "for the general advancement of Civil Architecture and for promoting and facilitating the acquirement of the knowledge of the various Arts and Sciences connected therewith," and the latter was established in the year 1768 "for promoting the arts of design."

I fear, however, that without the universal recognition and practice in future by the architectural profession of a full share of science and finance as essentials in connection with architecture, the patronage of the architect by the public is likely to wane still more in this country in favour of other professions less qualified in architecture, to the lasting detriment of the art of architecture in Britain.

More sympathetic unity and publicity of the merits of the general body of architects, many of whom excel in art as well as science and finance, would probably enlighten the public and possibly convert the sceptical.

Perhaps this might be accomplished under the auspices of the Royal Institute of British Architects by holding periodically a great public exhibition of architects' work in all its branches, and it might with advantage be arranged also under the aegis of the Royal Academy of Arts, which was established "for promoting the arts of design."

If this were accomplished, I can perceive a vision of a Press luminary, largely patronised by the general public, giving illustrations and artistic, scientific and financial information and criticisms upon the designs, etc., exhibited, and upon numerous interesting and important problems, such as architecture in relation to every kind of art, science and finance connected with education, the Church, the home, hospitals, music, the drama, the opera, Imperial, county and municipal government, agriculture, railways, trades, manufactures, monuments, sports, etc., etc.

By some such means, combined with the aid of the Press, it would be possible for many architects to demonstrate in a legitimate way their ability to do the services required by the public, including

art, science and finance, all of which must, in my opinion, be supplied in future in a full degree by the architect himself, if architecture is to remain a living art in Britain.

OBITUARY.

The death occurred on the 2nd inst., at his residence, "Ashleigh" 29, Brondesbury Park, N.W., from a heart attack, of Mr. Rowland Plumbe, F.R.I.B.A., architect, aged 81 years. The deceased, who had been in extensive practice for nearly 60 years, was the son of the late Samuel Plumbe and was educated privately and at University College, London, taking first certificates and prizes for both architecture and fine art and science in 1861-2, and a National and other medals of the Science and Art Department, South Kensington, in 1857. He was articled to N. J. Cottingham and Cooper and Peck, and in 1858 went to the United States, remaining there two years. He joined the Architectural Association in 1862, filling the offices of Secretary and Vice-President, becoming President in 1871. He was a Fellow of the Royal Institute of British Architects and Member of its Council in 1876; one of the Secretaries of the Architectural Exhibition until the Royal Academy established a Gallery for architectural drawings; Fellow and late Member of the Council of the Royal Sanitary Institute; District Surveyor by examination, serving from 1875 to 1891, when he resigned; and a past master of the Painter-Stationers Company. The deceased was also much interested in Freemasonry and was P.G. Superintendent of Works in the Craft and Mark degrees, a member of the Royal Arch Chapter, a supporter of all the Masonic charities, and acted as Consulting Architect and Assessor to the new Masonic Boys' School. He joined the Volunteers at the commencement of the movement and held a commission in the Artists' Rifles. He had been engaged in the building of many hospitals, asylums, mansions, houses, polytechnic schools, churches, etc., and had also done much special work, such as the preparation of a report on the buildings required and the method of education for the Borough and South London Polytechnic, the remodelling, re-drainage and extension of the London Hospital, which work was carried out over a period of some years without closing any of the wards or departments. Among his most recent works are the new headquarters of the Y.M.C.A. in Tottenham Court Road; the premises of the Temperance Building Society on Ludgate Hill, the new Royal National Orthopaedic Hospital, Great Portland Street, Napsbury Asylum for the Middlesex County Council and many other important buildings. The deceased was descended from an old family of City merchants, to one of whom is erected a tablet in Fulham Church, dated 1592, showing his connection by marriage with Sir R. Gresham. Another of the family was Lord Mayor in 1778. He married in 1867 a daughter of the late William Russell of Brighton, who pre-deceased him, and by whom he leaves two daughters. The funeral took place on the 5th inst., when the remains were laid to rest with those of his wife and his mother.

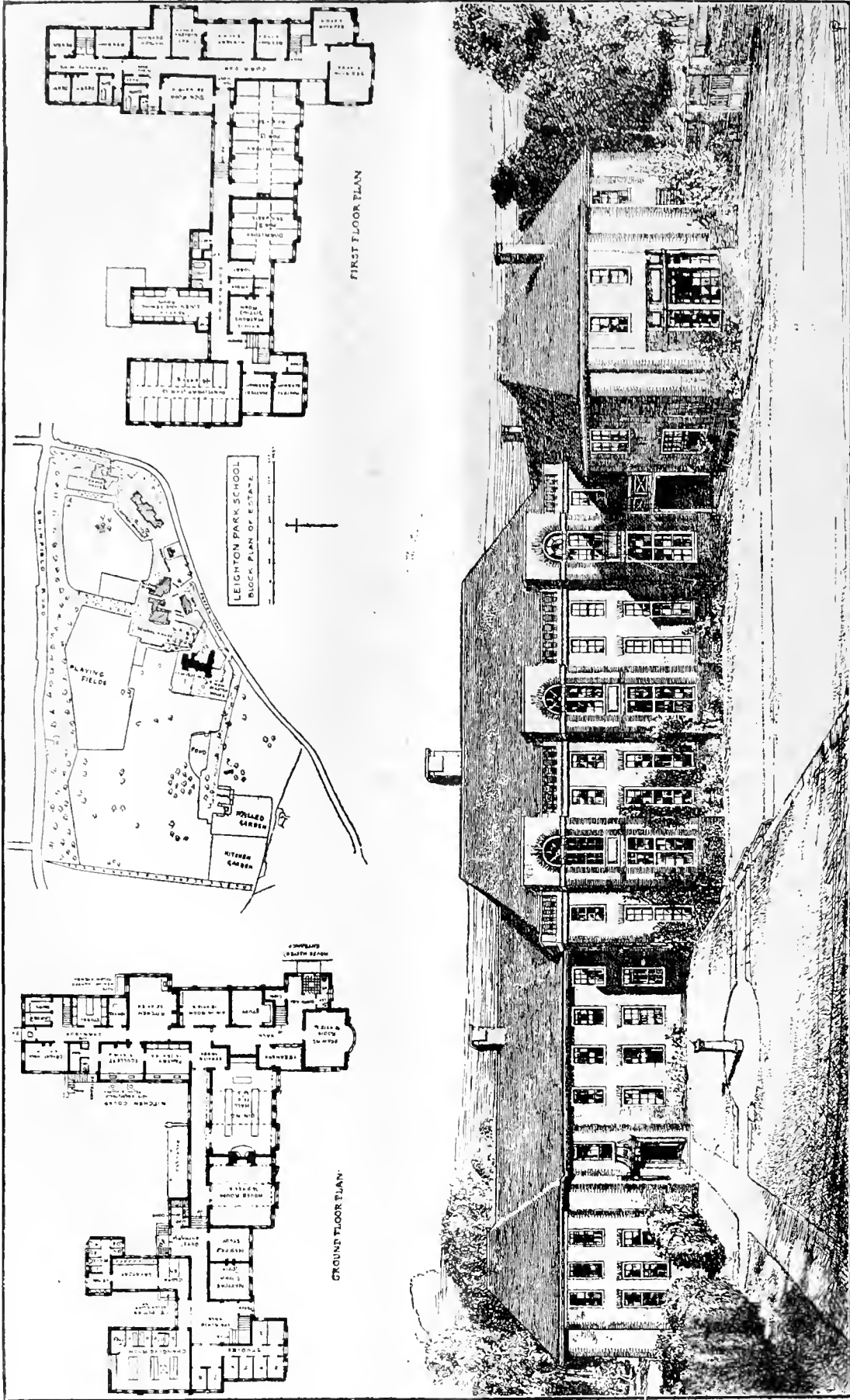
The Worcester-shire C.C. has decided to provide an open-air school for boys at Malvern, and the General Purposes Committee has been instructed to prepare plans and an estimate and to buy a site.

Land at £3 per foot frontage, with average depth of about 80 ft., has been offered to a North London local authority for housing purposes. The pre-war cost of the land was between £4 and £5 per foot.

At a public meeting the Usk War Memorial Committee's proposal to purchase the town hall was approved, and an architect will be engaged to advise on the necessary alterations and to give an estimate of the cost.

The Aberdeen Housing Committee recommended the Town Council to adopt a report and plans prepared by Messrs. William Kelly and Harbour MacLennan, architects, and Mr. John Gordon, borough surveyor, for the lay-out of houses at Torry. The extent of the site is about 52 acres.

THE BUILDING NEWS, APRIL 16, 1919.



MASTER'S HOUSE, LEIGHTON PARK SCHOOL, NEAR READING.
Messrs. FRED. ROWNTREE and SON and RALPH W. THORP, Joint Architects.

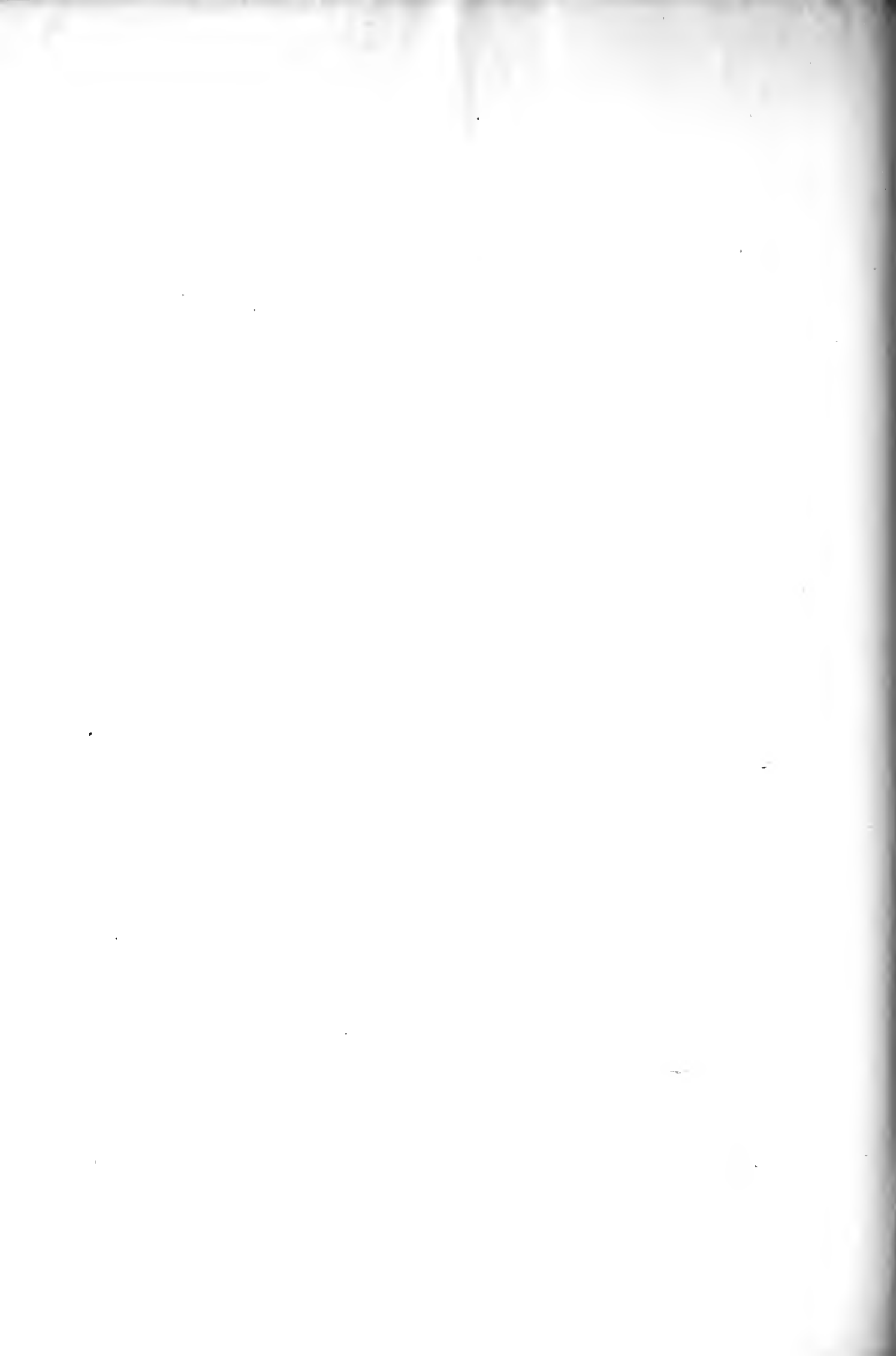
THE BUILDING NEWS, APRIL 16, 1919.



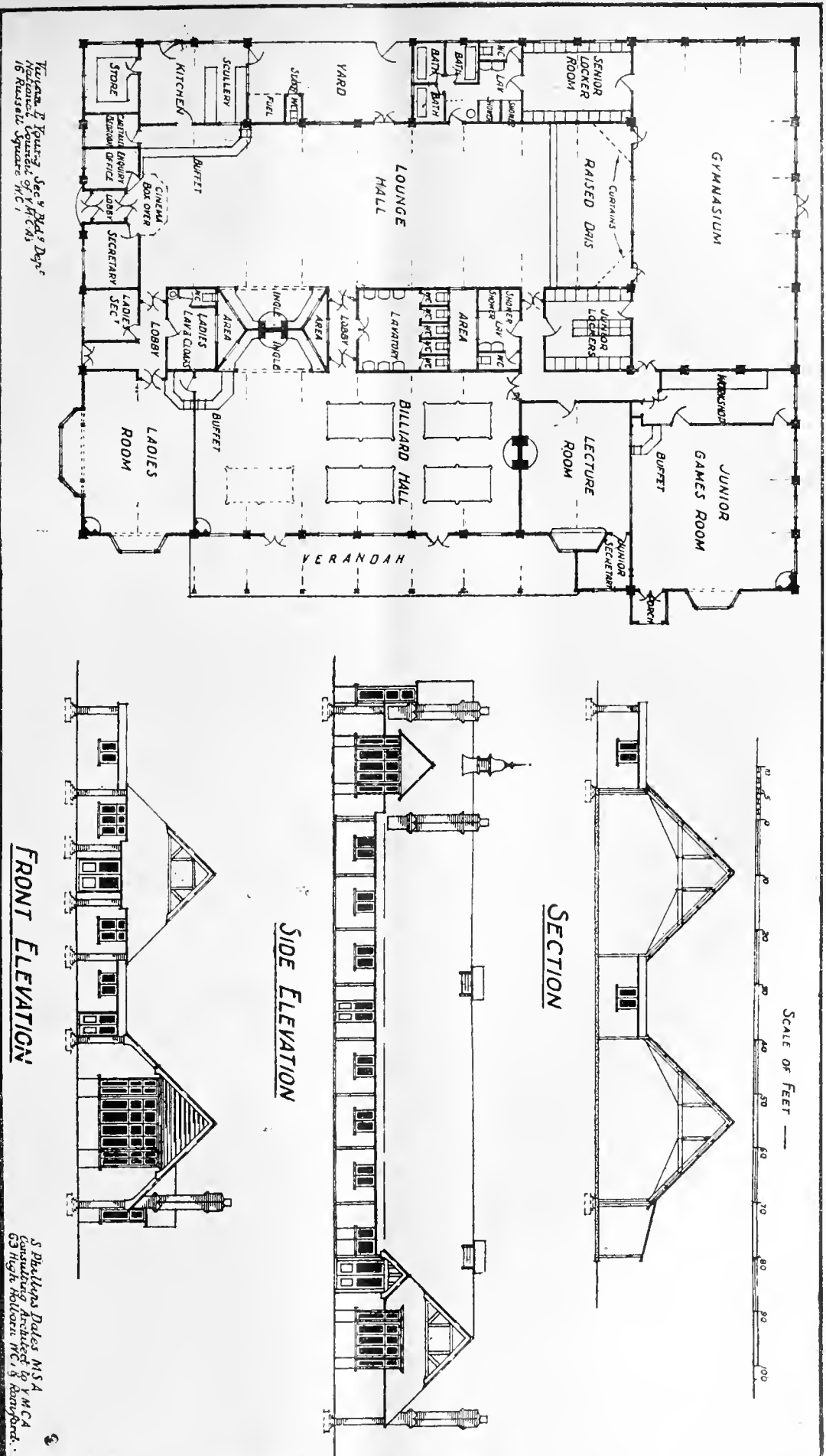
"THE LIBRARY," AMERICAN WASHINGTON INN, ST. JAMES'S SQUARE, S.W.
MR. S. PHILLIPS DALES, M.S.A., Architect Y.M.C.A.



THE INGLE AT H.M. QUEEN MARY'S CLUB FOR OFFICERS, EATON SQUARE, S.W.
Mr. S. PHILLIPS DAVES, M.S.A., Architect V.M.C.A.



THE BUILDING NEWS, APRIL 16, 1912.



SCALE OF FEET —



Young, J. Young, Sec'y Bldg Dept.
 16 Russell Square, N.C.

FRONT ELEVATION

S Phillips Dales M.S.A. & W.C.A.
 Consulting Architects, 40 N. 1st St.
 63 High Holborn, W.C.1 & Hampstead.

RED TRIANGLE INSTITUTE FOR LARGE PROVINCIAL TOWN, WITH ACCOMMODATION FOR MEN, BOYS AND WOMEN.—Mr. S. PHILLIPS DALES, M.S.A., Consulting Architect, Y.M.C.A.

Our Illustrations.

"THE INGLE" AT H.M. QUEEN MARY'S CLUB FOR OFFICERS, EATON SQUARE, S.W.; AND THE LIBRARY, AMERICAN "WASHINGTON INN," ST. JAMES'S SQUARE, S.W.

This pair of photographs show two good typical examples of the more important military clubs erected as temporary buildings during the war in the heart of the Metropolis. Both are still in use and are extensive in size. We give these views in connection with a short series of geometrical illustrations for Red Triangle Institutes and Clubs to be constructed of salvaged war-hut materials. Mr. S. Phillips Dales, M.S.A., the architect who carried out these London buildings under the auspices of the Y.M.C.A., lent us these photographs.

A ROADSIDE COTTAGE, HERTFORD.

This cottage, built on a fairly large site, stands detached and well back from the highway. The first floor contains three bedrooms, bathroom, a boxroom, and linen store. The external walls have a red brick plinth, and are finished above with whitewashed cement plastering. The contract, including another cottage of similar accommodation on the adjoining site, was carried out by Messrs. Norris and Son, Hertford. Mr. Andrew Gray, M.S.A., of Hertford, is the architect.

MILITARY DECORATIONS IN THE MALL: PYLONS and OBELISKS, BUCKINGHAM PALACE, S.W.

We give to scale an ink sketch of the obelisks and pylons which were erected in connection with the Guards' march through London on March 22. The whole of them were constructed of light timber frames, wrot and painted white. There were twenty-four obelisks fixed between Buckingham Palace and Marlborough Gate—twelve on either side of the Mall. These were surmounted by two wreaths and drops of laurel; on the base of each was a laurel chaplet with a trophy of eight flags, the centre of the chaplet being filled in with the various crests of the Guards regiments. At the two front corners were flags as indicated, draped up to the chaplet as shown. The height of these obelisks was approximately 20 feet 6 inches, with a base of 4 feet 9 inches square. The four pylons were placed at the junction between Marlborough Gate and the Mall. These were built up and finished in a similar method to the above, and draped with flags, laurels, and festoons with drops as shown. The base of each of these pylons had seven chaplets finished in gilt, bearing (in blue) the names of the various battles in which the Guards had been engaged. The height of these pylons was 23 feet 3 inches, with a base 9 feet by 5 feet 6 inches. The architect responsible for their design was Mr. A. J. Pitcher, of H.M. Office of Works.

RED TRIANGLE INSTITUTE AND CLUB, CONSTRUCTED WITH SALVAGED WAR-HUT MATERIALS.

Now that the war is over, an enormous amount of building material of various kinds, salvaged from military huts and other buildings, is available and is being utilised by the Y.M.C.A. to provide Red Triangle Clubs and Institutes for provincial town suburbs and rural villages. One such is illustrated herewith to-day. Mr. J. Phillips Dales, M.S.A., of 63, High Holborn, is the architect. This institute provides accommodation for men, boys, and women. The plan includes a lounge hall with a raised platform; a five-table billiard saloon, lecture room, ladies' room,

and a room for the juniors' games as well as a gymnasium. The ingles in the large assembly rooms make a feature, and the verandah overlooking the grounds is attractive. These drawings are so clear that no further description is needed. The experience obtained by Mr. Dales was considerable, and besides the two sets of premises in Eaton Square and St. James's Square, of which we give photographs to-day, he designed and carried out the Eagle Hut for the United States Overseas Committee in Aldwych, and the Beaver Hut in the Strand on the Savoy site.

LEIGHTON PARK SCHOOL, READING: NEW MASTER'S HOUSE.

Owing to the rapidly-increasing number of resident pupils, the governors are considering plans for an additional master's house to accommodate thirty-eight boys of varying ages. The proposals comprise a private house for a married master, and studies and bedrooms for two assistant masters. Provision is made for the domestic staff under the supervision of a resident matron. The accommodation for the pupils consists of a large dining-hall, a common room, private studies for the older boys, two large dormitories and one smaller one, together with a changing-room equipped with slipper and shower baths, etc. Messrs. Fred Rowntree and Son, and Ralph W. Thorp, 11, Hammer-smith Terrace, London, W.6, are the joint architects. This firm designed the Central School Buildings and Science School, recently erected. The block plan shows the positions of all these premises on the estate.

Correspondence.

SURVEYORS' INSTITUTION MEMORIAL SERVICE.

To the Editor of THE BUILDING NEWS.

SIR.—In view of the many inquiries which I have received with regard to the final hymn at the memorial service to members of the Surveyors' Institution who have died on active service, which was held at St. Margaret's Church, Westminster, on March 31, may I beg the courtesy of your paper to make known to those interested that the hymn is entitled "The Supreme Sacrifice," the words being by John S. Arkwright and the music by Rev. C. Harris, D.D.

Copies of the words and music may be obtained from the publishers, Messrs. Skeffington and Son, 34, Southampton Street, W.C. 2, price 2d.—I am, Sir, yours, etc.,

A. GODDARD, Secretary.

12, Great George Street, S.W. 1.

MESSRS. ROBERT INGHAM CLARK AND CO.'S TRADE MARK COMPETITION.

SIR.—Your readers will doubtless be interested to learn that over 400 applications were received for conditions and instructions relating to our 100 guinea Trade Mark Competition, which closed on the 12th inst.

The competition bids fair to be a complete success.

We would take this opportunity of thanking you for the support accorded to the competition in your columns, which has been of material assistance.

We hope to afford an opportunity of viewing the exhibition after Easter.

Yours faithfully,

ROBE. INGHAM CLARK AND CO., LTD.
West Ham Abbey, London, E.15.

The Housing and Town Planning Committee of Edinburgh Town Council has agreed to recommend the Town Council to invite competitive plans for the lay-out and erection of houses on the four proposed sites in the Edinburgh area, namely, Gorgie, Saughton Hall, Willowbrae Road, and Craigleith Road. It was agreed to advertise for competitive plans from architects for each of the areas, the premiums being £150, £75, £50.

PROFESSIONAL AND TRADE SOCIETIES.

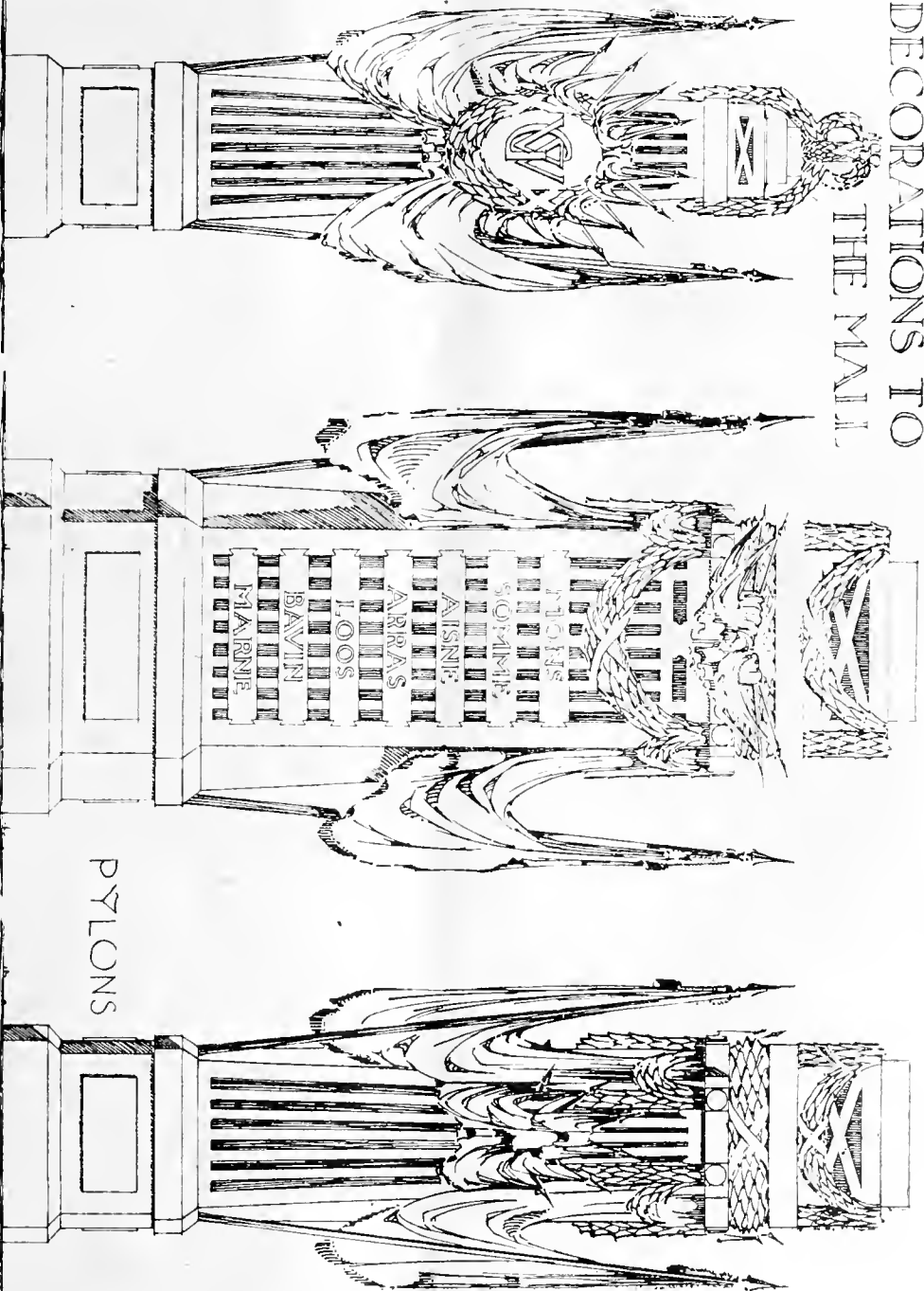
THE ARCHITECTURAL ASSOCIATION OF IRELAND.—At a meeting of the Architectural Association of Ireland, held April 10, at 15, South Frederick Lane, Dublin, Mr. W. J. Burke, F.S.I., in the chair, Mr. Archibald McGoogan read a paper on the work of the two Mossips, the Irish eighteenth-century medallists. Mr. McGoogan traced the work of these two celebrated Irish artists from the beginning of a period which is full of interest to the student of art, and by a series of well-chosen lantern-slides gave a very interesting and illuminating exposition of all that these two men, father and son, achieved. The lecture was preceded by a short musical programme to which several of the members and their friends contributed items.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.—A Council meeting of the Royal Institute of the Architects of Ireland was held on the 7th inst. at 31, South Frederick Street, Dublin, the President, Mr. W. Kaye-Paory, F.R.I.B.A., in the chair. The President stated that the conditions for the competition in connection with the urban housing schemes were with the Treasury awaiting approval, and every effort was being made to expedite their publication. A report from a special committee appointed to consider the employment of competent architects in housing schemes, and to define the qualifications of an architect for the purpose, was adopted. Two resolutions were adopted by the Council, and the Hon. Secretary was directed to forward same to the Chief Secretary and the Attorney-General for Ireland. The first urges that at least two architects shall be added to the Irish Public Health Council; and the second regrets that while the circular letter in connection with Irish housing schemes, issued by the Irish Local Government Board on March 31 to the town clerk of every borough, the clerk of every urban district council, and the clerks of town commissioners, urges the local authorities to start their schemes at once, and points out the need for economy, no mention is made therein of the necessity or desirability of employing competent architects on the preparation of the schemes. This subject has already been brought to the notice of the Irish Government in correspondence extending over the last twelve months, and the desirability of employing competent architects on these schemes has been recognised in Great Britain. The Council trust that a clause giving effect to the matter will be included in the forthcoming Housing Bill for Ireland.

THE SURVEYORS' INSTITUTION: THE INSTITUTION DINNER.—Hostilities having now ceased, and the present being the fiftieth year of the Institution's existence, the Council have decided that they are justified in reviving the annual dinner, which has not been held since the outbreak of war. It will be held on Tuesday, May 20, 1919, at the Connaught Rooms, Great Queen Street, W.C., and the Council hope that a large number of members will take this opportunity of celebrating the jubilee of the Institution. Special committees of the Institution are considering the Housing Bill, the Acquisition of Land (Assessment of Compensation) Bill, and the Land Settlement (Facilities) Bill and the assistance of the county committees has been enlisted in order that the views of the profession in all parts of the country may be obtained thereon. Reports embodying these views have been drawn up for submission to the authorities concerned and to members of Parliament interested in the several measures. A memorandum will also be drawn up for submission to the Royal Commission which has been set up to inquire into the scope, rates, and incidence of the income-tax.

A memorial to the parishioners of Conway who have fallen in the war is to take the form of a Lady Chapel to be placed at the east end of the north aisle of Conway Parish Church, and to be known as the Soldiers' Memorial Chapel. The designs for the Lady Chapel have been prepared by Mr. Harold Hughes, the diocesan architect, and are now practically approved. It is estimated that the work proposed will cost about £400.

DECORATIONS TO THE MALL



OBELISKS

FRONT ELEVATION

SIDE ELEVATION

PYLONS

MILITARY DECORATIONS IN THE MALL, BUCKINGHAM PALACE, S.W.
Mr. A. J. PITCHER, H.M. Office of Works, Architect.

Our Office Table.

At the last meeting of the Prestatyn, Flintshire, Urban District Council Mr. F. Wilkinson, the surveyor, reported that he had commenced the preparation of the plans for the houses to be built by the council. Mr. W. Inglefield said he presumed the surveyor would be largely ruled by the Local Government Board in planning the houses, and the official ideas on these matters were rather of a rigid type. He would prefer someone outside the council made the plans, which the surveyor could criticise when he got them. Mr. Wilkinson said the opposition to the designing of housing schemes by municipal engineers and surveyors emanated from the Royal Institute of British Architects, who had circularised all the local authorities. Nearly 75 per cent. of the municipal housing schemes in Great Britain had been originated and designed by municipal surveyors. The work now required was practically town planning. To design a "garden city" was obviously work for a surveyor. He had no personal objection to the employment of an outside architect, if the council thought it worth while. There was really very little scope for variations in design, inasmuch as the designer was tied down as to accommodation and as to price. The council decided against the suggestion that an outside architect should be employed.

With a view to the efficient and rapid planning of the new estates, the Manchester Housing Committee has arranged to co-operate with the Manchester Society of Architects. Six architects have been nominated, to form, with the president of the society and the City Architect, a "President's Committee," which will be directly responsible to the corporation. This committee has been asked to send in a list of local architects to prepare plans for the "lay-out" of the estates, with the necessary drawings and specifications for the houses. These architects will serve as "sectional architects," each section having a chairman who will be a member of the President's Committee and responsible to that Committee for his section. The fees and charges will be on the basis of those published by the R.I.B.A. It is also announced that in the selection of architects, should their qualifications warrant it, special consideration will be given to members who have served in the war, and places will be reserved for men who have not yet been demobilised.

The tearing up of an old asphalt pavement is a tedious job. A special machine is in use by the United Railroad of San Francisco, which does this work in a very short time, not only tearing it up, but loading it into a work car in one operation. Any work car can be used. On the front of this a 75-lb. T-rail frame couples, and this supports a scoop or shovel having a sharp turned-up edge at the front. It measures 34 ins. wide and 63 ins. long. From the shovel an inclined platform extends to the loading car. This platform measures 4 ft. wide by 15 ft. long, and has sides to guide the sheet of asphalt. When in operation the point of the scoop is forced under the asphalt to start it; then the rest is accomplished by moving the car ahead slowly. The narrow sheet of asphalt between the tracks is raised up the incline and over the edge of the platform into the body of the car. This is continued until that end of the car is filled; when the car is turned around, and the same process is continued.

After consultation between the London Association of Master Decorators, the London Master Builders' Association, and the Journeymen's Union, the following rate of wages for painters during the Easter holidays has been agreed to:—viz., 2s. 6d. an hour, exclusive of meal-time, commencing Thursday, April 17, at 5 o'clock p.m., and ending Tuesday, April 22, at 6.30 a.m. The rates for work done on Easter Sunday are to be subject to an individual arrangement, but are not to exceed double ordinary rates, viz., 3s. per hour. The London Association of Master Decorators has doubled the number of its members during the last few weeks. Decorators, builders, and members

of allied trades who desire to join should communicate with the Organising Secretary, Mr. Arthur S. Jennings, 365, Bank Chambers, 329, High Holborn, London, W.C.

In the course of his presidential address to the Midland Section of the Junior Institution of Engineers, Mr. A. E. A. Edwards complained of the way in which heat is wasted in this country. He showed that concrete walls were only 10 per cent. better to live in than glass houses, that brick walls only radiated half the heat of a concrete wall, but that houses built of wood, even if only of 1-in. boards with a 2-in. thickness of sawdust between the inner and outer shells, radiated only a seventh of the heat of a concrete wall of the same thickness. The losses through roofs could be halved by a thin wood lining under the tiles or slates. As regards floors, concrete was the worst possible floor to use as regards heat losses. Small electric stations combined with a heating system would work at 50 per cent. heat efficiency, instead of about 10 per cent., as at present; electricity would then be almost a by-product. Such a system would obviate all the disadvantages of the super-power stations, and would save the country most of the domestic fuel used and most of that used for heating factories.

Mr. A. T. Taylor, vice-chairman of the London County Council, presided last Thursday over a meeting of the conference of county and local authorities in Greater London on housing after the war. The meeting was held in the County Hall at Spring Gardens.—Mr. Marlowe Reed, of the Middlesex County Council, moved that the scheme submitted by the central committee be approved. This scheme provided that as an emergency arrangement all the county and local authorities should formulate a joint housing scheme both for the provision of new houses under Part III., and operations under Parts I. and II. of the Housing of the Working Classes Act, 1890. The joint scheme or schemes would determine both the number of houses to be built and the localities in which they should be erected. For this purpose it would be necessary to form a joint committee composed of representatives of the various county and local authorities as follows: County of London, 31 members; County of Middlesex, 8; County of Essex, 4; West Ham, 1; East Ham, 1; County of Surrey, 3; Croydon, 1; County of Kent, 2; County of Herts, 2. The scheme also provided that a full penny rate should be levied annually, beginning with the financial year 1919-20, throughout the whole area of Greater London. Mr. Bernard Holland, chairman of the Housing Committee of the London County Council, moved the following amendment:—"In the opinion of the conference a joint committee with advisory and consultative functions should be constituted to formulate a joint housing scheme for Greater London, and that it be referred to the central committee to prepare and submit as soon as possible an amended scheme accordingly." On a vote the amendment was lost, and Mr. Marlowe Reed's proposal approving the scheme put forward by the central committee was carried.

One of Oldham's best known and oldest corporation officials—Mr. Wm. Fox, buildings inspector—handed in his resignation on Tuesday week as a protest against the refusal of the Surveyors and Buildings Committee to increase his salary. On February 27 Mr. Fox sent in an application for a substantial increase in salary or for the war bonus, which all the other members of the staff and the department's workmen received and from which he was debarred. That application had been before the committee at two or three of their meetings, but it was only at the last meeting that the committee came to the conclusion that they could not accede to either of his requests. Mr. Fox has had only one increase in his salary during the last twenty-nine years of his service, but the other members of the staff are in receipt of a war bonus of 24s. 6d. per week. Even the office boy has got a 9s. war bonus.

Mr. E. G. Catchpole, A.R.I.B.A., of Ipswich, has been appointed Architectural Assistant to the Borough Engineer of Blackburn.

CHIPS.

Mr. Maurice B. Adams, F.R.I.B.A., was unanimously re-elected chairman of the Chiswick Parochial Charities Trustees at a meeting held a few days since.

The housing schemes so far submitted by local authorities to the Local Government Board are estimated to cover an area of about 12,000 acres, with a total of over 100,000 houses.

It has been resolved to apply for a faculty for the improvement of Holy Trinity Church, Bungay. It is proposed to enlarge the church along the lines of its original architecture at a cost of about £1,500.

Canadians are to erect soon in Kow Gardens the giant flagstaff, eighteen tons in weight and 215 ft. long, presented by the British Columbian Government. Its first use is likely to be at the Peace celebrations.

The Nottingham City Council last week voted an appropriation of £20,000 for a War Memorial in the Great Market Place. Designs are to be considered later, "when the general wishes of the public are ascertained."

Sir A. Mond informed Mr. Gilbert last week that the hoarding round King Charles's statue at Charing Cross would be removed in a month or five weeks, when repairs to the statue, estimated to cost £710, were completed.

There will be a meeting in connection with the Architectural Assistants' Professional Union at the Hall of the Art Workers' Guild, 6, Queen Square, London, W.C., on Tuesday, April 29, 1919, at 7 p.m. Attendance is urgently requested.

In connection with the addition to the accommodation at the museum and improving the entrance to the Cooper Park, Elgin, it has been decided to invite Mr. Marshall Mackenzie, architect, Aberdeen, to meet the committee with a view to preparing plans.

The Altrincham Housing and Town's Improvement Committee has requested J. Cocker and T. H. Hill, architects, to prepare alternative schemes for laying out the housing site, such plans to provide for about 400 houses, with bowling greens and tennis courts, etc.

The late Mr. Robert Leaben Curtis, of Hohnwood, Highgate, and 11 and 12, Finsbury Square, London, architect and surveyor, a former Mayor of West Ham, and one of the founders of Westminster Cathedral, who died on October 19, 1918, left a fortune of £142,448.

A meeting of the Society of Architects will be held at 23, Bedford Square, W.C.1, on Thursday, April 24, at 8 p.m., when Mr. Charles T. Ruthen, O.B.E., honorary examiner and member of the council, will read a paper on "Housing and Planning: A National Policy."

The Cheltenham Corporation Housing Subcommittee recommends that a plan be prepared for the erection of 400 houses, and that Messrs. Chatters, Smithson, and Rainger be engaged as architects to act in conjunction with the borough surveyor, subject to satisfactory terms being arranged for the joint appointment.

Sir A. Mond, First Commissioner of Works, informed Sir S. Roberts last week that the original estimate for the repair of the roof of Westminster Hall was £60,000, of which £39,000 had been expended to date. The total increase in the estimate owing to war conditions could not yet be determined. It was anticipated that the work would be completed in May, 1921.

At a meeting of the General Committee of the Cheltenham College War Memorial Fund, it was announced that the Duke of Connaught has consented to lay the foundation-stone of the war memorial on Speech-day, July 4. The memorial will take the form of cloisters connecting the chapel with the Little Modern. Captain L. W. Barnard, F.R.I.B.A., of 31, Promenade, Cheltenham, was appointed the architect.

Mr. Wm. Arnott McLeod, for fourteen years a partner in the old-established firm of Messrs. Neil McLeod and Sons, and for the last three years a managing director in that of Messrs. Neil McLeod and Sons, Ltd., has commenced business at 3, Clifton Terrace, Edinburgh, under the firm name of William Arnott McLeod and Co., Ltd. Mr. Thomas McCrae, who for the last ten years has been Superintendent of Works for the Edinburgh Merchant Company, has resigned from that office and has become associated with Mr. McLeod. Both directors have had considerable experience in carrying out extensive contracts, and they propose, as builders and contractors, to carry out the conditions of the old firm, of which the present Lord Dean of Guild of the City of Edinburgh was the founder.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House.

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 The Female Lock Hospital Extensions, Harrow Road, N.W. General block plan and plans of east wing. Selected design. Mr. Alfred Saxon Snell, F.R.I.B.A., Architect.

OUR ILLUSTRATIONS.

View from the Churchyard, St. Martin's-in-the-Fields, by William Hunt (1790—1864). From the

Currente Calamo.

Dr. Addison stated last week with perfect truth that "it was difficult" to say at present actually how many houses would be built during the next three financial years, or what they would cost. On the basis that 100,000 houses would be erected during the current financial year, 200,000 during the following year, and 200,000 in the year after, at a cost of £500 each, the capital expenditure involved, he said, would probably be £125,000,000, in respect of those authorities who could not borrow for themselves. It would be £150,000,000 if the cost was £600 per house. The rent should be at least equivalent to a commercial rent on at least two-thirds of the present cost of building. Certain allowances would have to be made for expenses. The cost of management, he said, ought not to be more than 5 per cent., and the cost of repairs during the whole period should not be more than 10 per cent. On that general basis it was probable that we might anticipate, at all events in the seven years' period, a contribution of 5s. per week per house. He hoped that during the next three financial years they would provide through the scheme at least half a million houses. A loss of 5s. a week would mean an annual contribution of £6,500,000 in aid of the housing scheme. That was inclusive of the yield of the penny rate. The loss falling on this year would probably not exceed £500,000. As far as this year goes, Dr. Addison is possibly right, as little or no building will be actually done, but that will not stop money being squandered, as it has been on everything else the Government has taken in hand during the last five years. Taking the whole scheme, we are absolutely certain Dr. Addison has underestimated its cost ludicrously, and as unwarrantably over-estimated the return from the penny rate. However, he is going to issue another "White Paper" soon, "on the understanding that the proceedings of the Standing Committee will not be delayed on this account." As usual! Get the money voted first, and explain afterwards!

Kingdom, urging the importance of retaining the services of qualified independent architects as soon as the scheme is proposed and before the site is definitely determined on, in order that a suitable site may be secured, the lay-out planned on lines best adapted for the needs of the district, and the scheme completed in the best possible manner. Following on the recommendation of the Tirdor Walters Housing Committee of the Local Government Board (see par. 349, page 77 of Report, Cd. 9191), the society also urges additional reasons why housing schemes should be placed in the hands of architects. First, because architects possess in a higher degree than any other persons the training and experience qualifying them to advise upon and carry out these schemes. Second'y, it is understood that the professional charges of independent architects engaged on this work can come out of the Government grant, whereas the salaries of officials of the local authorities and their staffs come out of the rates. Thirdly, because architects have suffered more than the members of any other profession as a result of the war, and all those who have had experience of this work, particularly architects who have been serving with H.M. Forces, are hoping to be permitted to undertake these housing schemes. They look upon this work as a legitimate means of assisting them to re-establish themselves in their practices, which have not only been interrupted, but in many instances entirely ruined, by the war. The society has amongst its members many architects in all parts of the country who have made housing a special study, and it will be pleased to furnish the names of such architects to local authorities who may find themselves faced with the problem of preparing a housing scheme.

The *Morning Post*, in its issue of the 17th on "The Plague of Parasites," tells an amusing story about "The Dispensables" of the Ministry of Munitions, and the way in which they responded to Mr. Lloyd George's fervid appeal at Newcastle-on-Tyne in 1915 for "no red tape—it takes too long to unwind!" At a certain Government factory in course of erection in 1916 three waggon-loads of steel principals were due for delivery. Many days passed without their arrival, waiting which

nearly a hundred workmen stood idle. The factory officials (who were of the new order) took tardy cognisance of the situation and wrote to the Ministry of Munitions about it. The reply was "No information," and thirty tons of steel material were apparently beyond location. Several weeks were spent in fruitless searching for this little consignment. Then they wrote to the War Office, with the same result, then to the Board of Trade, which resourceful body sent it to another Department instead of sending the discouraging reply, "No information." The application finally came back, endorsed "No information," from the *Education Office*. The obvious explanation of the inquiry being sent to the latter department is that the superfine young gentlemen in one of the Departments remembered that there were Principals in colleges, and naturally concluded that the subject of inquiry must have been educational in scope and character. Ultimately the principals were discovered later in a siding on the wrong railway. We may add we could cap this story with more of the same sort; perhaps when space is less limited we will.

Those of our readers who may not see it regularly should not miss Lord Leverhulme's essay in *Science Progress* for April (London, John Murray, 5s.) on "Dry Rot in Government Housing Schemes." Lord Leverhulme declares that "spoon feeding" will prove no solution of the housing problem, and bids the Government note that America does not require to give doles and sops to the workers of the United States towards building their homes, at the cost of the rest of the citizens; and that a policy of doles and sops will spread like dry rot in a building till there is not a sound plank left. Our building bye-laws, adds Lord Leverhulme, are framed to make cottages costly. The builder, the joiner, bricklayer, and other artisans must be freed from the tyranny of restriction of output, and the master builder must be free to pay wages above the trade union minimum for increased output. In that way, and that alone, building will be cheapened, and rents made easy of payment. The essay is a very timely one, and the advice is that of a captain of industry who has done more to solve the housing problem than all the faddists, and without the humbug most of them talk.

The Society of Architects has addressed a communication to the Housing Committees of local authorities in the United

Now that oxygen can be obtained at a low price we have it is claimed by the *Bulletin de la Société de l'Industrie Minérale*, Third Issue, 1918, a ready means of regenerating a vitiated atmosphere. In a closed space badly ventilated, in which there are a number of people, four facts are to be noted: (1) the quantity of oxygen is constantly diminishing; (2) carbon dioxide, a product of breathing, is constantly increasing; (3) vapour of water is also being constantly added; (4) organic matter engendered by the human organism and held in the vapour of water gradually increases, contaminating the air and communicating to it special colours. To this production of toxins must be attributed the propagation of certain infectious epidemic diseases, notably influenza. Hence the problem of regenerating the atmosphere consists in restoring the oxygen burned by the organisms, preventing the increase of carbon dioxide and watery vapour, and destroying the toxins. The first condition is easily realised by a constant and sufficient supply of fresh oxygen. The second may be realised by causing the carbon dioxide and the vapour of water to be absorbed by some cheap and easily procurable substance, as quicklime, for example, which may be regenerated as often as required by heating it to redness. The third condition realises itself by the condensation of the vapour of water upon the lime. Experiments on these principles have recently been carried out at the hospital of Val-de-Grace. One hundredweight of lime, in granular form, contained in seventy-two wooden trays, was distributed over three tiers of shelves. This gave a surface of 9 square metres. Oxygen was introduced into the ward through a tube provided with a regulating tap. The ward, in which there were twenty-six to twenty-eight patients, had a capacity of 820 cubic metres. This allowed 30 cubic metres of air to each patient, three times the quantity which the rules of hygiene prescribe. This excess of air-space told against the efficiency of the experimental system. In spite of this, however, very definite results were obtained. At six o'clock in the evening all issues from the ward—i.e., doors and windows—were closed for the night. At nine o'clock oxygen was turned on at the rate of 20 litres a minute. Samples of air for analysis were taken at intervals from midnight until five o'clock a.m. Also the temperature and the hygrometric state of the atmosphere were noted when each sample was taken. At the same time samples of the outside pure air were taken for comparison. The results showed a practically normal atmosphere throughout the night.

Petrus Franciscus Theodorus Schultz, 39, a Dutch subject, described as a sculptor, of New Kent Road, pleaded guilty at Tower Bridge Police Court to failing to register as an alien, and was fined £5.

It is proposed by the National Cyclists' Union to erect a suite of offices of sporting associations as a memorial to sportsmen who have fallen in the war, and the views of other associations likely to be interested in the project are to be ascertained.

BUILDING SOCIETIES AND THE WAR.

The report of the Chief Registrar of Friendly Societies on the condition of the building societies in the year 1917, issued last week, and obtainable through any bookseller or direct from the Government Stationery Office for five shillings, is a very satisfactory proof of the favour with which they are still regarded by the small investor, notwithstanding the effects of the war. It is true the number of societies on the Register still decreases. The number liable to furnish annual returns in 1917 was 1,443, or fifty-nine less than in the previous year, a rate of decrease, however, not much higher than that prevailing for twenty years past. The aggregate membership, 620,049, shows a decrease of 8,000, but still exceeds the membership of 1913. Four and a-half million pounds were advanced on mortgage, or about half the average maintained in pre-war years. The aggregate amount accumulated from shareholders' contributions amounted to more than £47,000,000, a decrease of £160,000 on the previous year, but still slightly in excess of the pre-war figure. The liability for deposits and loans exceeded £13,750,000, £750,000 less than in the previous year, or £2,250,000 less than before the war. The balance of profit and reserve carried forward was £4,250,000. This item shows an increase of £85,000 on the previous year and of £300,000 on the figures for 1914. The balance due on mortgage, £55,250,000, shows a decrease of £2,750,000 on the previous year, which is only natural in view of the decreased advances. During the four years ending in 1917 the aggregate shortage in new advances due to the war must amount to at least £12,000,000, a decreased business on the part of building societies equivalent to the purchase price of some 20,000 houses. It is estimated that the arrears of repayments, arising out of the war, for the three years ending in 1917, amounted to £1,750,000, or about 20 per cent. of a normal year's repayments. The following are a few interesting averages:—Average membership of societies, 437; average amount advanced, £550; average period of repayment, 14 years; average share capital per society, £33,000; per member, £76. The total number of advances by building societies now in course of repayment was nearly 190,000, so approximately one-third of the existing members have received advances which they are now repaying by average annual repayments of £38, exclusive of interest.

Only three societies were added to the register during 1917, one being terminating, and the other two permanent. No unincorporated societies became incorporated during the year. The societies removed from the Register included one society which had been in existence for over 60 years, two for more than 40 years, thirteen for more than 30 years, thirteen for more than 20 years, ten for more than 10 years, and two which were less than 10 years old. The society referred to above as having been in existence for over 60 years was the Bayswater and Kensington Mutual Benefit Building Society, No. 76 B, London. This society was established in 1857 and incorporated in 1874. It was always a comparatively small society, and in its best days had about 100 members and £11,000 lent upon mortgage. By 1915 its membership had dwindled to 31, 12 of whom had received advances upon which a balance of £2,027 was due. The progress of the Yorkshire societies is still continued, and a comparison of societies in Yorkshire and London is of interest. While the membership of

the London societies over two decades has remained almost stationary, the Yorkshire societies have almost doubled in membership, and they are closely contesting the right of the London societies to premier place in building society statistics. The bulk of the Yorkshire societies are in the East Riding, their membership for 1917 being 118,476, as against 120,740 for the whole county. The known total is only 122,771, against 133,408 in 1907. Forty-five societies (two more than in 1916), of which 43 are situated in England, 1 in Wales, and 1 in Scotland, had a membership of 2,500 or over. Twenty-four of these societies had over 5,000 members, including 8 with over 10,000. The largest society is the Halifax Permanent Benefit Society, which had nearly 33,000 members, or considerably more than twice as many as any other society in the kingdom. These 45 large societies had nearly half the total membership; more than half the total amount outstanding on mortgage; and were responsible for a like share of the new advances.

The amount advanced on mortgage during the year showed a still further decrease on the amount advanced in normal years, and represents about half the latter amount only. The decrease was common to all parts of the Kingdom, but in view of the restrictions upon building operations and the high cost and difficulty of obtaining both labour and materials, it is remarkable that as much business should have continued to be done. It is probable, however, that few advances have been made in respect of new property. The high wages and profits obtainable in some classes of war work, and the widespread and increasing difficulty of renting houses, have, doubtless, proved an incentive to many tenants to purchase their dwellings, and with the dearth of new houses have had no alternative but to purchase old-established property, even at enhanced values. Nine hundred and fifty-one societies made advances, i.e., 67 per cent. of the societies making returns. The corresponding figures for 1915 and 1916 were 1,078 and 1,000 respectively. It is satisfactory to mark the economy of cost incurred. The management expenses amounted to £385,935, or 12s. 5d. per member. These expenses, instead of rising with increases in membership, have actually decreased, and the average per member is more than 1s. less than in 1912. Altogether, we think the Chief Registrar, whose report is a gratifyingly business-like one, is fully justified in his expectation that as regards the future, now that it may reasonably be assumed that the war is at an end, the prospect for building societies is an exceedingly bright one. The practical suspension of building operations during the past three years has resulted in a house famine, and is one of the causes of the appreciation in value of house property. So far as building societies are concerned, it renders the existing mortgages more secure, and will lead to a greatly increased demand for new advances in the future. That demand, we sometimes think, might have been enhanced a thousandfold, with little cost to the State, had the man been forthcoming to devise a Housing Bill of a very different sort from that now before Parliament, based to a large extent on trust in and encouragement of the thrifty.

The governors of the Birkenhead Institute, Birkenhead, have decided to build a pavilion, estimated to cost £1,000.

Mr. Charles Harris is retiring from the secretaryship of the Auctioneers' and Estate Agents' Institute, which he has held for thirty years.

Our Illustrations.

VIEW FROM THE CHURCHYARD, ST. MARTIN-IN-THE-FIELDS.

James Gibbs' Portico, shown in this drawing by William Hunt (1790-1854), is a mere copy of any ancient temple, though he probably adapted his design from the Pantheon or Baths of Agrippa at Rome. The last stone of the spire was laid in 1724, the year of the consecration of the church. Six other churches in London were also dedicated to St. Martin. This building cost £37,000. It was the fashion at this time to raise the floors of churches well above the ground level, and the fall of the site increased very materially the elevation in some cases on the southern flank. We are indebted to Mr. Thomas Girtin for the origin of this fine example of the early work of William Hunt. The picture is undated, but the companion picture, which we shall shortly illustrate, showing a distant view of the spire from Pall Mall, is also signed as executed in the year 1824, just a century after the building was erected. Both views were recently exhibited by the Burlington Fine Arts Club in the collection of "Early Drawings and Pictures of London," and they both show the artist's appreciation in Canaletto's manner. He was chiefly famous for his paintings of fruit, flowers, and other subjects of the kind, as well as of stately figures, but few have any idea how great an artist he really was. His knowledge of architecture can well be judged from this study of the Portico of the "Royal Church" in Trafalgar Square, including a view up St. Martin's Lane, showing the old houses then existing where the National Portrait Gallery now stands. The detail is drawn with unusual skill in brown ink outline, and vigorously coloured. As a record of "Old London" it is particularly interesting, representing St. Martin's Place about 100 years ago.

"GERSTON." STORRINGTON, SUSSEX.

This pair of photographs was exhibited at the Royal Academy last year. Mr. E. Turner-Powell, F.R.I.B.A., of 13, Queen Anne's Gate, Westminster, is the architect. The pictures give a good idea of the two main fronts of the house; the grand porch or garden elevation is so contrived to cover the fine views stretching away towards the south in this charming part of Sussex.

THE FEMALE LOCK HOSPITAL EXTENSIONS. HARROW ROAD, N.W. SELECTED DESIGN.

The only review of this competition published late last year appeared in THE BUILDING NEWS on November 18, 1918. We commence to-day a short series of plans in illustration of the winning scheme, of which Mr. Alfred Saxon Snell, F.R.I.B.A., of Bentinck Street, Manchester Square, W., is the architect. Mr. Percy Adams, F.R.I.B.A., was the assessor. The other competitors were Messrs. E. T. Hall and Son and Messrs. V. Ashley and Winton Newman. The style of the existing premises precluded much change in the utilitarian character of the architecture. The block plan given to-day exhibits clearly the lay-out of the old hospital, and shows the several enlargements about to be carried out. We have very carefully described the scheme in our review before mentioned, so little remains to be added on this occasion.

By reference to the key-plan it will be seen that a new lodge is set to the left of the main entrance gateway, the new

out-patients' department, which is cleverly planned, being close at hand on the right, immediately in front of the big old chapel. A new entrance for the patients, with a commodious operating room over it, is contrived on the left-hand of the principal central block, and in the centre at the rear, towards the south, is a new ward, of which we print a copy of the plans to-day set out to scale. The east wing is to have two additional floors, and the Home for Nurses at the back is to be considerably enlarged. A laundry and boiler-house will occupy a site to the west, and beyond, in the same direction, there will be a distinct block devoted to an Isolation Hospital. Other sheets will furnish the particulars of these useful premises.

ARCHITECTURE IN SOUTH-EASTERN ITALY.*

By AMBROSE POYNTER (Member).

The fortunes of this war have plucked a great many of us up by the roots and set us down, at very short notice, in the most diverse and unexpected places. I was among those who were so uprooted. In May of last year I was sent to Brindisi, partly to act as interpreter to the General Staff Officer (Naval) there, and partly to help in some work the secrecy of which was, at that time, so essential that the office where it was conducted was forbidden to outsiders, and the department itself only referred to by its initials. One of the reasons which helped to recommend me for this post was the fact that, in addition to a sufficient knowledge of Italian, the part of the world to which I was sent was already well known to me.

This South-Eastern corner of Italy, known as Apulia, in Italian Puglia or Le Puglie, that is, "The Apulias," from the three provinces into which it is divided, is little visited by travellers, foreigners' knowledge of it being limited as a rule to a few hours spent, much against their will, waiting in Brindisi for steamers to take them on to Greece or Egypt.

This part of Italy is little visited because it is almost entirely wanting in the charms that make a visit to Italy desirable or attractive. The scenery is monotonous; the towns are dirty; the accommodation for travellers indifferent and in some places non-existent; and strangers are apt to be the objects of unbridled curiosity which is sometimes an actual impediment to sight-seeing. In addition, it is almost essential that the tourist should know Italian, and he will find it extremely difficult, even then, to understand what is said to him in reply: a difficulty which I own I have encountered myself in various parts of the British Isles. Finally, the vast accumulation of splendid and historic works of art of all kinds, which crowd the cities of Northern and Central Italy, is entirely wanting. Their place is taken in Apulia by churches and castles of considerable interest and beauty it is true, but widely scattered and of a character calculated to attract the specialist in architecture or archaeology rather than the general tourist. If, in my youth, I acquired an affection for, and an interest in, Apulia, it is that I saw it not only when I was young and likely to be impressed by the novelty and strangeness of the life and country, but also that I saw it under most favourable circumstances, having had the good fortune to pay a long visit to the country house, beautifully situated on the shores of the Gulf of Taranto, of a charming and cultivated Italian gentleman—who was also a British subject—the late Sir James Lucca, whose early kindness to me it is a pleasure to thus acknowledge publicly.

When I learnt at school the geography of Italy an impression was left on my mind that, besides the prolongation of the Apennines which runs down into the toe of Italy, that is, into Calabria, there existed a similar prolongation running down into the heel,

that is, into Apulia: an impression which, I am inclined to think, is rather common. I was accordingly not a little surprised when I came actually to visit the country to find that the whole extent of Apulia, from Foggia to the very heel, is nothing but a tableland which slopes up gently from the sea, Foggia itself being the centre of an extensive plain.

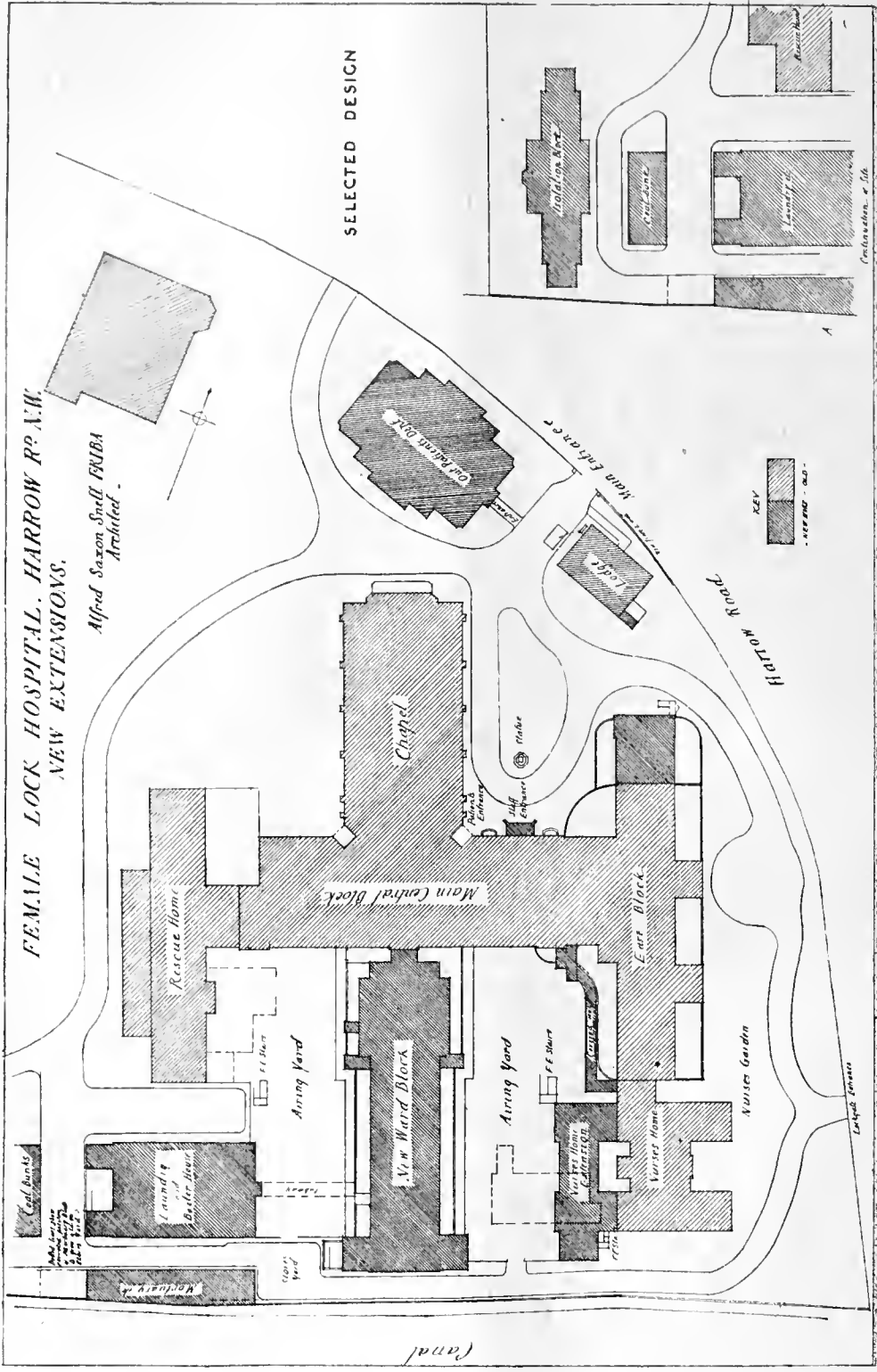
It is a land devoid of rivers, but intersected along the coast by ravines which turn into turbid torrents after rain. There is indeed one range of hills, which runs parallel to the coast from about the level of Andria as far as Ostuni. These hills are called "Le Murgie," and are described in the guide-books as "low-lying." As a matter of fact they rise to 1,100 or 1,200 ft., but as the country slopes up to them from the sea, at no point, except perhaps near Ostuni (which stands on a bluff overlooking the coast at the edge of the tableland lying to the north of Briudisi), and in the neighbourhood of Castel del Monte, not far from Andria, do they make any impression on the landscape. Nearly the whole country, excepting the plain surrounding Foggia, which is still largely pasture land, is covered with olive trees and plantations of almond trees: while those parts that are not cultivated form a sort of wild heath, overgrown with lentisk, rosemary, and wild thyme, which scent the air for miles. The soil, mostly a burnt sienna colour, is but a few inches in depth, and is everywhere underlaid by an easily worked freestone, which has had an important effect on the architectural development of the district, while in spring and summer, as in England, vast quantities of red poppies grow everywhere. The roads, all modern, often run for as much as twelve to fourteen miles in an absolutely straight line, so that while the view from any eminence or rise in the ground is as impressive as that over a dark-green ocean, and generally includes the sea itself, actual travel on the roads is terribly monotonous, though motor cars do much to abridge this, and make visits possible to places otherwise inaccessible. The whole country is cut up into huge estates, and small villages are unknown. The peasants, as a result of the days not long passed away, when Barbary pirates and their incursions were to be dreaded, still prefer to live in towns, and walk or drive many miles to their work. Finally, a curious feature of certain districts of the Apulia, especially round about Bari, is the number of circular stone buildings, one of which stands in nearly every field. These are huts of refuge, formed out of the stones picked up in the field, and resembling internally the Treasure House of Atreus at Mycenæ, while externally they are conical in form. Seen from Castel del Monte, these huts or towers are so numerous as to make the country round look like a vast cemetery which has spread itself out by each monument moving just a little way from its neighbour. They are called "trulli," "specchie," or "casele."

The whole coast of this side of Italy, from Monte Gargano as far as Otranto, where there are cliffs on the coast and rolling downs inland, is very low-lying and almost harbourless. From Ancona down to Cape Leuca, the only harbours of importance are Bari and Brindisi, the fine harbour of Taranto being tucked away inside the heel. This conformation of the coast had a considerable influence on the war as far as naval operations were concerned, the advantages being all on the Austrian side.

I do not propose to weary you with a history of the country's early inhabitants, with its fame and prosperity as a Greek colony—Magna Græcia it was called—nor with its position under the Romans, or its vicissitudes in the first thousand years of the Christian era. I merely note that the remains of Grecian antiquity are amazingly small in all South Italy, except at Paestum and in Sicily. In the south-east they consist chiefly of the remains of two temples at Metaponto (which as a matter of fact is just outside the province of Apulia and in that of Basilicata), and the remains—still, I believe, unexcavated—of an early temple of considerable dimensions, which are visible in the courtyard of a house at Taranto. Besides these ruins, the chief remains of Greek occupation are the

* A paper read before the Society of Architects, March 20, 1919.

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numerous vases that have been dug up; and let me here note that by the middle of the eighteenth century the taste for collecting them had so grown that numerous forgeries were even then in existence.

The country was occupied by the Romans from the middle of the third century B.C., and the port of Brindisi became the focus of communication with Greece and the East. Though the town of Brundisium flourished, Roman remains there and elsewhere are scanty; but inscriptions and fragments of statues and carved work, the well-known column at Brindisi, and a small part of a theatre or amphitheatre at Lecce are almost all that is left. This column forms a landmark when entering the harbour, and I may add that the city's coat-of-arms includes two columns among its charges.

At Brindisi there are other remains of antiquity, it is true, but none are of importance. I noted numerous shafts of antique columns embedded in the pavement at various street corners to serve as carriage posts. I noticed others of very fine materials performing a similar service at the main gate of Otranto. These, with a few remains of foundations and of various cisterns, are all that is left of the once great Roman city, through which so many of Rome's most famous citizens and soldiers passed, which had a circuit of some eight miles, and contained, besides temples and schools, a fine forum, an amphitheatre (whose remains are said to have been employed in the construction of the mediæval castle), a mint and an arsenal, extensive barracks and shipbuilding yards.

Southern Italy remained long in the feeble but persistent grasp of the Byzantine emperors, being taken and retaken by Lombards, Saracens and Greeks, with monotonous frequency. The interest of the country, for present purposes, begins with the arrival of the Normans, who performed for Apulia the same service they performed for our own country, that of conquering it, but with less enduring results. Their first contact with the South of Italy was at Salerno in 1003, when a party of Normans, on their way back from the Holy Land, had an opportunity of observing both how rich was the country and how defenceless its inhabitants. On reaching home, the good news was spread among friends and neighbours, and from that time onwards any Norman in search of adventure was sure of finding employment among the small States of the South.

Of such adventurers, the most remarkable were the fifteen stout sons of Tancred de Hauteville, one of whom, Robert, called in Italian, Roberto Guiscardo, soon made himself master of all Apulia, and in about 1060, obtained recognition of his position from Pope Leo IX., who most generously "granted" him all the country he had so far conquered from the Greek Emperor, together with any he might conquer from him in the future. He called himself Duke of Calabria and Apulia, while his brother Roger, thirty years later, conquered, and called himself Count of Sicily. In this way the Norman Kingdom of the Two Sicilies was founded, and left its mark in a splendid series of churches.

The House of Hauteville was succeeded by that of Hohenstaufen, in the person of the famous Frederick of Hohenstaufen, or, as the Italians call him, Frederick of Swabia. His mother was Constance, daughter of Roger II., King of the Two Sicilies. In 1194 she married the German Emperor of Rome, who died in 1197, and was succeeded by his infant son, with the titles of Frederick the First of Sicily, and the Second of Germany. He reigned till 1250, spending a large part of his long reign in Apulia, to which he was attached and for whose prosperity he did so much. He was a free-thinker at a time when few people dared to profess such opinions, save those who were unusually daring, unusually powerful, or, like Frederick, both. That he and the Pope were bitter enemies goes without saying, and though he successfully resisted the Papal power in his lifetime, the Popes destroyed his dynasty in the long run. It is not surprising, therefore, that the chief remains of Frederick are a series of strong

castles placed at the strategic points of his dominions, rather than a series of churches and monasteries.

After the house of Hohenstaufen came that of Anjou; in the person of one of the sons of St. Louis of France, Charles Count of Anjou, who in 1266 crushed Manfred, the son of Frederick, and then procured the judicial murder of Manfred's son, Conradine. The Angevine domination, which produced churches as well as castles, lasted for nearly 200 years, when the Kingdom of the Two Sicilies passed to the House of Aragon, and in 1503 became part of the Kingdom of Spain, whose power, exercised by Viceroy, lasted till 1746, when the Spanish House of Bourbon occupied the throne. In 1860 the "Regno" or "The Kingdom," as it was known to the Italians, became part of the greater Kingdom of Italy, under the House of Savoy.

Spain, no less than Normandy, Arabic Sicily, and France, left its mark on the buildings of the land, and if the sixteenth and seventeenth and eighteenth centuries are marked by buildings less excellent in character than those of the same period further north, it was none the less a time of great building activity.

Asking to be forgiven for having refreshed your memories at some length by this historical sketch, I now come to what must be for you the chief interest of my paper, the buildings themselves.

The cities and places best worth visiting, beginning with the north of the country, are the following:—

First, Foggia, in the centre of the treeless plain called the "Tavoliere delle Puglie" or table-land of Apulia. Foggia presents neither walls, gates, nor a citadel, though Frederick had a palace there, of which an entrance gate alone remains; he frequented the town not for the charm of its situation, as there is none, but for the hunting to be got in the neighbourhood, and for its strategic position. The town was largely destroyed by an earthquake in 1751, but part of the original cathedral remains.

Some nine miles away from Foggia, almost due east, is Frederick's castle of Lucera, where he kept a garrison of Saracens, whom he had removed from Sicily. It is almost intact, and well worth a visit, though I am sorry to say I have not seen it. At the town of Lucera, close by the castle, Frederick built a chapel for the Christian inhabitants, while in 1274 the Angevines founded a cathedral in the French Gothic style, finished in 1305. The Saracens had their mosque, now destroyed.

Going easterly and rather south till the coast is reached, the first town of importance is Barletta, with a small port; the place owes its importance to the Normans. Barletta also once possessed, or was possessed by, one of Frederick's castles; the existing castle, however, is the work of the Emperor Charles V., in 1537, on the site of one built by Charles of Anjou in 1287. Charles V., indeed, in these parts ranks as a castle builder or castle moderniser after Frederick. The greatest curiosity of Barletta is the bronze statue, 16 ft. high, of a Byzantine emperor, which stands in the street on a low stone plinth against the walls of the Church of San Sepolcro, while its finest church is that of Sta. Maria Maggiore, founded in 1153, with an east end in Pointed style, and possessing a fine ciborium and a fine campanile.

Inland, about fifteen miles west and rather south of Barletta, is the town of Canosa, representing the ancient Cannæ, and not to be confounded with the better-known Canossa in the north of Italy. Here is the very interesting mausoleum of Bohemund, which resembles a Mohammedan "turbah," and has a pair of fine bronze doors, with strong traces of Arab influence in the design.

Proceeding along the coast you come to Trani, a port with a cathedral standing on a promontory and a fine campanile; a campanile marked by the peculiarity noticeable in one of the towers of St. Nicholas at Bari and of the cathedral at Brindisi, namely, that it is built over an arch. This cathedral also has a fine crypt, resembling the famous one of St. Nicholas at Bari. Indeed, these extensive crypts, or confessionals, easily accessible from the main church, and about half their height

above the level of the main building, are very common in this part of the world. It has, further, magnificent bronze doors. Not far from the cathedral is the inevitable castle, built by Frederick. From Trani Andria is visited, and from Andria Frederick's great castle of Castel del Monte, of which more later.

Passing over the towns which lie south along the coast—Bisceglie, Molfetta, and Giovanazzo—of which I know nothing except that the first gave the title of Duchess to Lucrezia Borgia, though I am sure an inquiring mind would find something of interest in each or all of them, I come to Bari, an important town and port, also with its castle and with two splendid Norman churches—the cathedral of St. Sabino and the famous church of St. Nicholas, with the shrine which is a centre of pilgrimage for both Greek and Roman Christians from the east coast of the Adriatic.

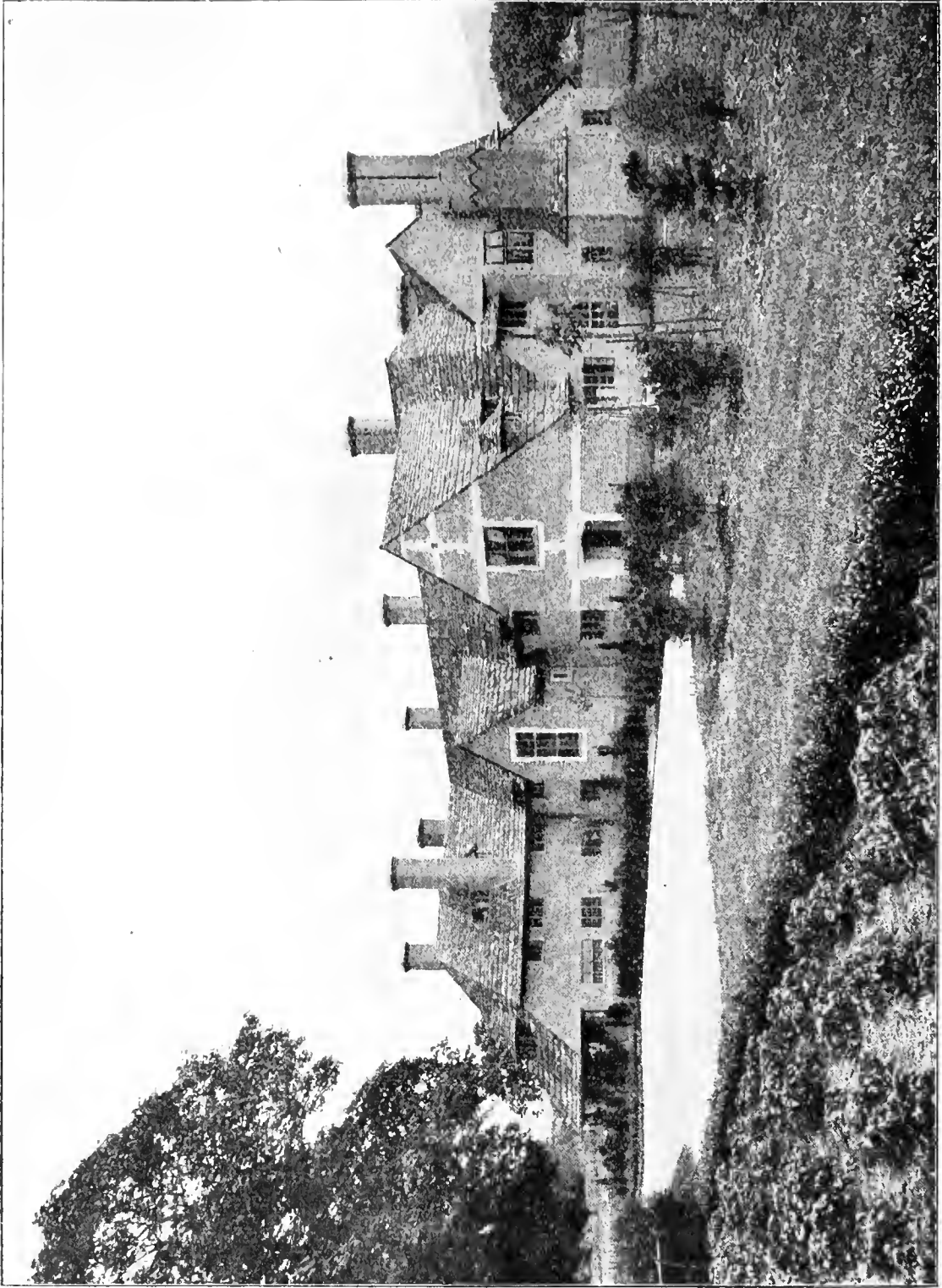
Due west of Bari are Ruvo and Bitonto, whose cathedrals are well worth a visit, particularly the latter, which has a magnificent front and two fine mediæval marble pulpits.

Pursuing our way along the coast we pass Mola di Bari, Polignano (picturesquely placed on a ravine overhanging the sea) and Ostuni, also on cliffs overhanging the land some miles from the sea. Some 75 miles from Bari we reach Brindisi, the safest harbour and most important naval port on this coast for a long distance, whose great castle, also—need I say?—the work of Frederick, is visible for many miles along the Bari Road. Continuing along the coast for another 45 miles or so, we come to the little city of Otranto (where we once more find the combination of a fine castle, not Frederick's, and a Norman cathedral), passing about halfway the important town of Lecce, lying eight miles inland, with its baroque cathedral and its tall campanile which serves as a landmark from far out to sea. Finally, doubling Cape Leuca (and passing on the way north again another Gallipoli from that at the Dardanelles), we reach Taranto, with its inland sea and its tightly-packed semi-oriental town, lying between the Gulf of Taranto and the inland sea just mentioned. And halfway between Taranto and Brindisi is Oria, the only hill in that part of the world, crowned by another of Frederick's castles.

The chief peculiarity which, I think, must strike anyone seeing these places for the first time, is their extremely Eastern appearance. An Italian, born in Brindisi, and educated at Naples and Venice, with whom I was discussing his native province and its peculiarities, said to me: "Apulia is not Italy: it is part of Africa." And as far as I can judge from photographs and drawings, and from what people tell me who have seen both countries, these towns are very like those of Morocco and the North African coast. Houses more than one story high, except in the new parts of Bari and Taranto, are the exception. Nearly all, with the exception of some at Brindisi to which I shall refer later, have flat roofs, and from Foggia southwards are marked by the strange fact that the first story is, in a majority of instances, begun and not finished. The brackets for balconies exist at the first floor level, and often the balconies, with their railings; the window openings, with their moulded jambs, are carried up some three or four feet, the internal partition walls are carried up a foot or 18 inches above the flat roof. In fact, everything is prepared for continuing the building another story, and there it is left. That in a country where earthquakes are common buildings should be limited to one story is understandable, but why they are carried so far when it is not intended to continue them, I can neither explain nor conjecture.

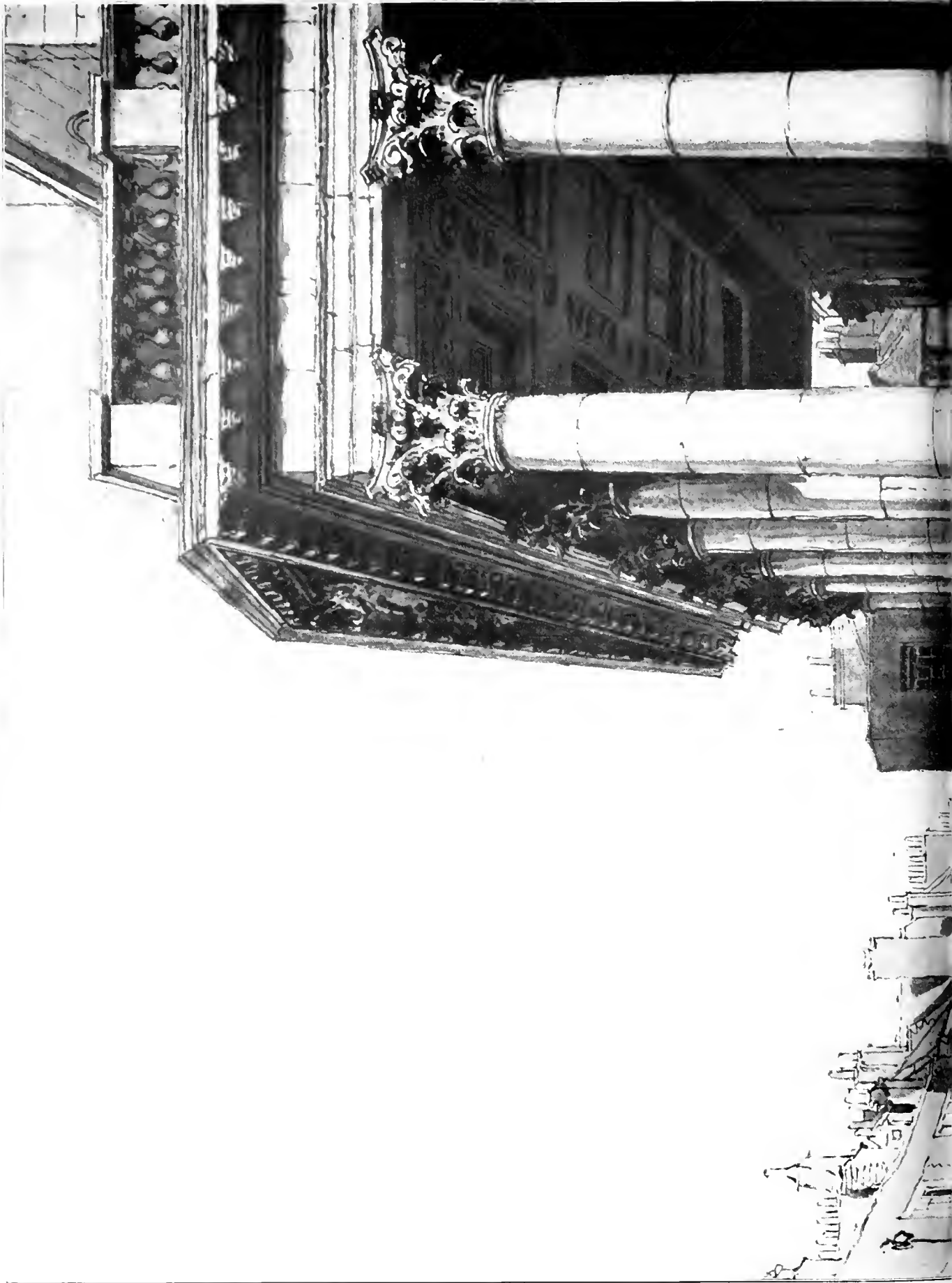
The houses, both in town and country, are generally mere cubes. In smaller towns all the buildings are whitewashed; this, with the flat domes and Oriental-looking campanili alone rising above the terraced roofs, with an occasional date-palm among them, with aloe, cactus, and prickly pear in the foreground and a middle distance of olives, with

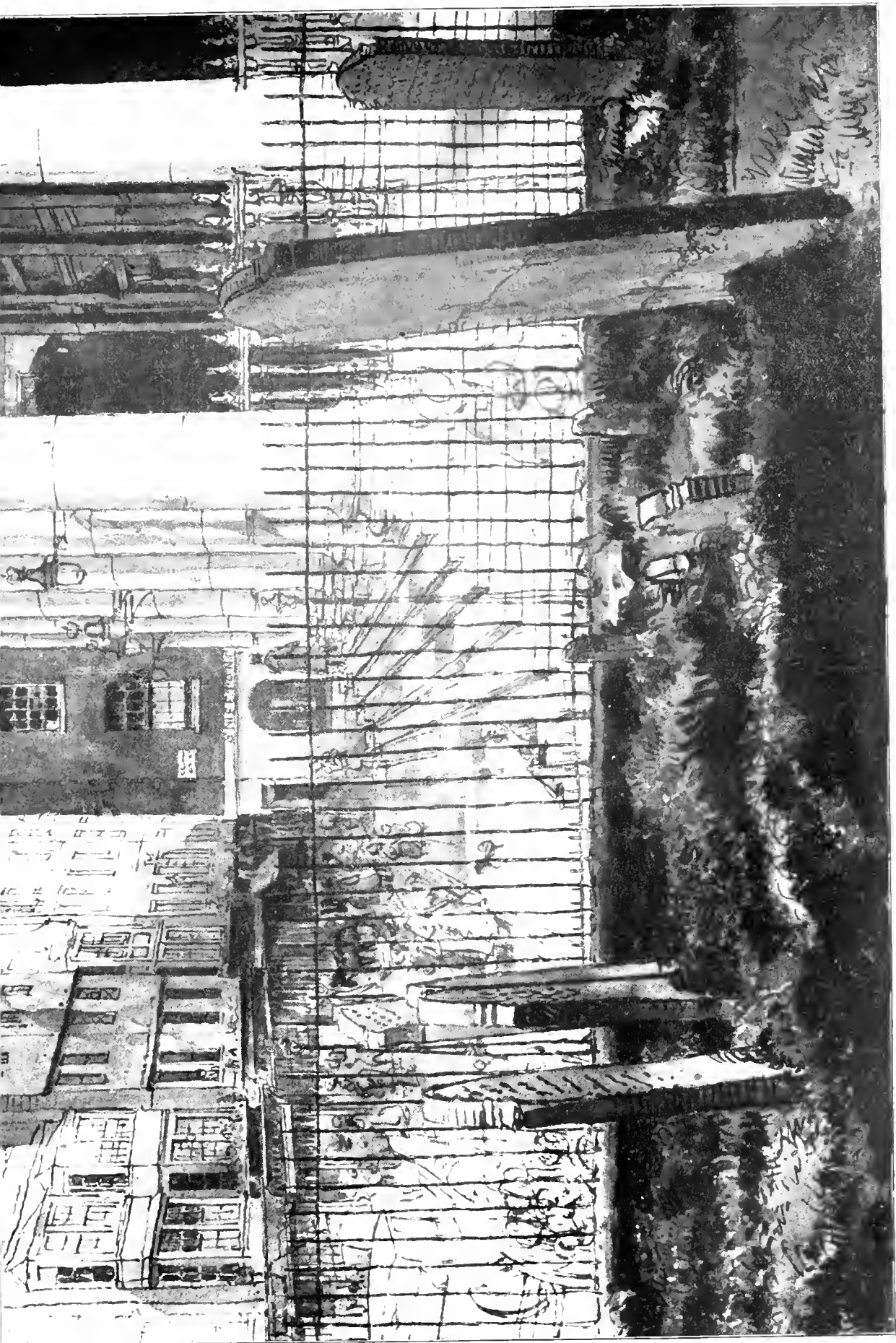
(Continued on page 250.)



"GERSTON," STORRINGTON, SUSSEX.—VIEW TO THE NORTH,
MR. E. TURNER-POWELL, F.R.I.B.A., Architect.

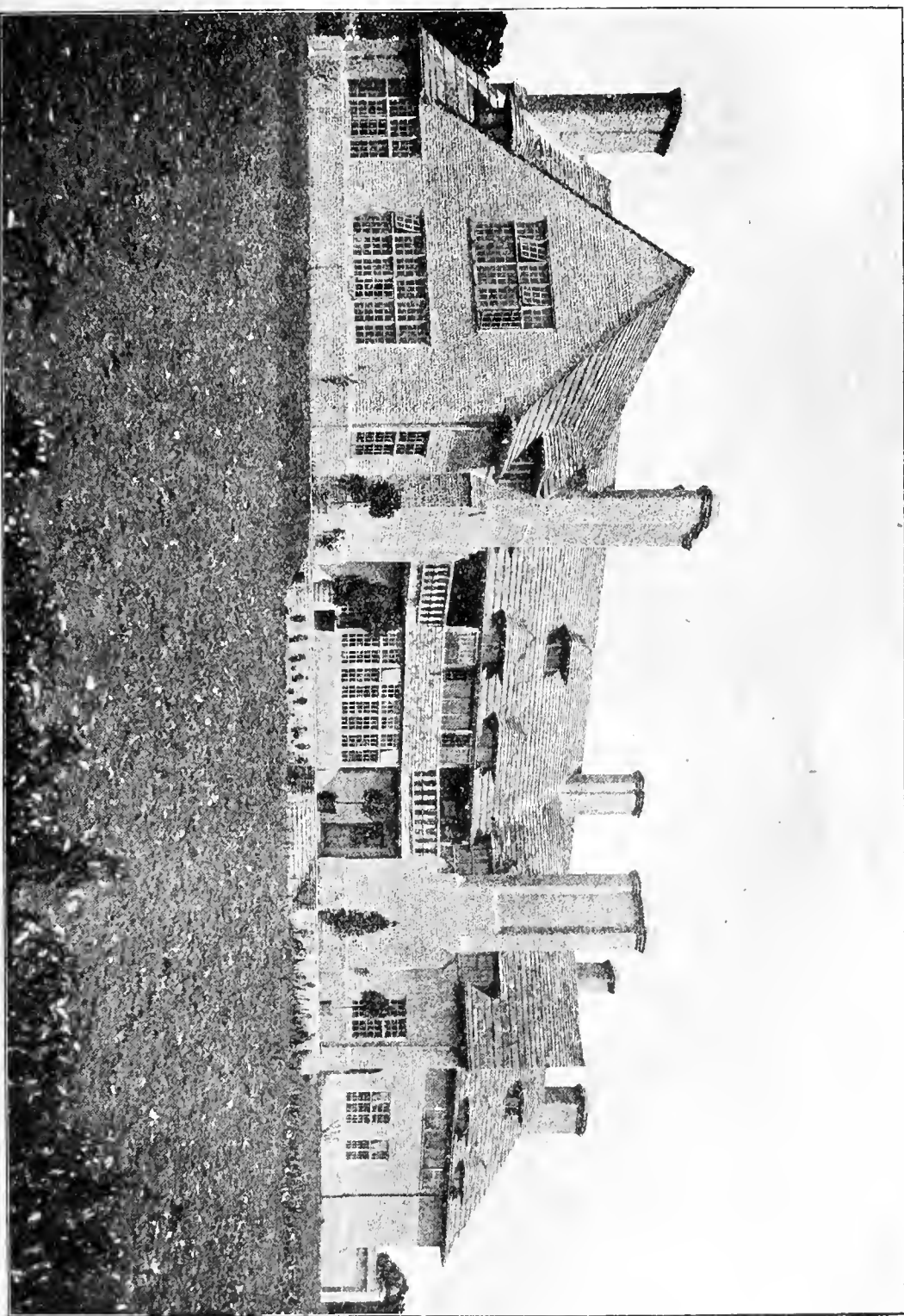
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VIEW FROM THE CHURCHYARD OF ST. MARTIN-IN-THE-FIELDS, TRAFALGAR SQUARE, LONDON.
A Water-colour Drawing by William Hunt, 1844.





"GERSTON," STORRINGTON, SUSSEX.
MR. E. TURNER-POWELL, F.R.I.B.A., Architect.

(Continued from page 243.)

the sea for a background, gives a very good African picture, it seems to me. Another Oriental peculiarity of all these towns is the amazing narrowness and crookedness of the streets. In Taranto many of the streets are so narrow that it is possible to touch both sides by extending your elbows, mere cracks, on to which doors and windows open. In Bari, where the old town remains intact except for the loss of its landward walls, I do not think that any street goes straight for more than ten yards, and at frequent intervals over the roadway arches are thrown, above which the houses are continued; while in few of them can two vehicles pass. Furthermore, in these towns the large open spaces of North Italian towns are completely wanting.

After these general remarks, intended to give you some idea of the towns and their surroundings, let me deal a little more in detail with some of the towns I visited and revisited.

I will begin with Brindisi, where I spent over eight months. Photographing was forbidden, sketching out of doors impossible also; while for a stranger in uniform to stop in the street for more than a moment was to attract a large and too curious crowd. I managed, however, to do a few sketches from housetops, and from memory, while some of my brother officers took a few snapshots. I have already said something of the early history of Brindisi. The Normans conquered it in 1070; it recovered much of its prosperity under the great Frederick, but was ruined by an earthquake in 1456, sinking lower and lower in prosperity till the latter part of the eighteenth century, when a beginning was made with clearing the entrance to the harbour again. The magnificent cathedral, rivaling the Norman churches at Bari, and built in the first half of the twelfth century, survived till 1743, when another earthquake destroyed it, and though it was rebuilt in an uninspired style in 1745 (the unfinished campanile dates from 1780), you may be interested to hear that it still survives as a magnificent early church in the pages of a certain English guide to South Italy, as does, in the pages of another English guide, the mosaic pavement of 1180, though the traveller will look for it in vain, as its remains were replaced in 1780 by a plain marble floor.

The cathedral is not a great piece of work, though it is imposing in the sunset, when half in light, half in shadow. While the side-chapels are vaulted, the nave roof is of timber and flat, with a semicircular arch at the crossing of the transepts. The fact is that while nearly all small buildings are vaulted in stone, the methods of vaulting in use in Apulia, which dispense with centering, do not encourage the vaulting of wide spans. The exterior has a peculiarity that I have noted in other eighteenth-century buildings—all the forms are so square and simple that when seen as a mass it is hard to say to what epoch it belongs.

Of other comparatively modern churches, the best worth looking at is that of Sta. Teresa, not far from the cathedral. It was founded by and built in the lifetime of a priest of Brindisi, Francesco Monetta, and is a favourable example of the style of the period, with the further advantage of being carried out in one style within and without, except the very poor campanile, which must be a late addition. The dark brown stonework with its wide white joints is very effective, and there is a good south door. In this building the transepts are not apparent in the ground plan, but emerge as masses above the chapels forming the aisles. There are, however, earlier and more interesting churches than these at Brindisi. One is the church of San Benedetto, with a fine Romanesque campanile, and an exterior much in the style of the cathedral of Foggia. It has also a fine early south door with richly carved marble casings and a little niche over it. The church was built in 1080, by a Norman, Count Goffredo or Godfrey, and the interior shows how the interest of an old building can be destroyed by later additions. The columns with their shafts and capitals, and the vaulting, are original; but the shafts have been plastered and painted to resemble yellow marble, while the vaults are painted

an unpleasant blue. Further, a number of altars of the wildest and most degraded baroque type have been placed against the walls, a fate that has befallen nearly every church in South Italy. In such altars as these, so painfully frequent, one can trace the Spanish plateresque influence, every part being as much overloaded with coarse and tasteless ornament as a piece of Spanish 17th century plate. Their execution was favoured by the nature of the stone of the country, which resembles that of Malta, where much similarly florid ornamentation abounds; it is soft and easy to cut, yet hardens with time and exposure. Connected with this church is a most interesting cloister of much earlier date, now approached through the sacristy, as the old convent is in military occupation. Other cloisters exist, whose wide-spreading capitals on slender shafts support stout little arches grouped under one semicircular arch. Among the sketches shown is one of the cloister of the church of Sta. Sofia, at Benevento, with an accompanying photograph; but I know of nothing in marble to compare with the Brindisi example, which bears all the marks of being the work of a carpenter or joiner, or at least of a mason trained in joiners' traditions. The resemblance to some of the early Scandinavian wood-work is striking. I take this to be work of the 8th or 9th century, as far as the smaller arches with their columns are concerned. There is also a crypt belonging to the church in Brindisi, known both as Sta. Trinità and as Sta. Lucia, which is said to be of the same date. It is, in any case, a great deal older than the church under whose east end it stands, and unlike the great crypts which were built at the same time as the churches to which they belong, has no connection with the church itself.

Two other old crypts exist near Brindisi, both about seven miles away, of the type known as "Basilian," that is, originally in the use of Greek monks. They are rock-cut and covered with frescoes. I imagine they must be of the same type as the rock-cut chapel of the Madonna called "della Candelora," in the ravine of Massafra, not far from Taranto, of which I show you a sketch. Of greater interest is the circular edifice at Brindisi called San Giovanni al Sepolcro, now secularised and turned into a municipal museum, under the zealous supervision of Canon Pasquale Camassa, the Honorary Royal Inspector of Monuments for the district. His active and enlightened care has done wonders for the discovery and preservation of works of art in the neighbourhood, and I am glad to acknowledge his patience and courtesy towards anyone who displays the slightest interest in the monuments under his charge. I am indebted to him for many of the facts I am now unloading on you. The building is not a complete circle, and the arches from the central circle of columns to the outer wall radiate in a curious fashion. It was once in a sad state of decay and has now a wooden roof; the outer aisle is said to have been vaulted once; but I could see no trace of this, nor does the arrangement of the radiating arches suggest any possible reasonable method of vaulting. The flat side has been rebuilt some time. The collection in this museum contains remains gathered in the locality, beginning with Greek vases and ending with one of the metal emblems or ciphers of H.M.S. Dartmouth; it includes inscriptions, parts of a mosaic pavement, fragments of statues, a fine alabaster vase, and later carved work.

Another church in Brindisi, that of St. Paolo, deserves mention as exhibiting some remains of former magnificence, and as illustrating a type of church not infrequent in, and perhaps peculiar to, the old Kingdom of Naples. The peculiarity of these churches is that the interior consists of an immense open hall with a flat wooden ceiling; there are no aisles, but altars placed in rows against the side walls. The front preserves the head of the original doorway: the peculiar pear-shaped window, doubtless substituted for an original wheel window, is a favourite baroque form in these parts. The altars are the last word in over-orna-

mentation, yet though they date from the latter part of the seventeenth century they show in places a survival of earlier forms. One altar on the north side, next but one, if I remember, to the high altar, has carved on the pedestals of the columns a lion and a greyhound, which are almost exact copies of mediæval work. Similar survivals exist in the oddly overloaded façade of the cathedral at Lecce. Indeed, the persistent survival of early forms, in masonry, is a not uninteresting feature found in work otherwise devoid of charm. Of the more attractive south side of the church, the original window heads, dating from 1322, when this church was founded by King Robert of Anjou, called the Wise, still survive.

The church known as the Crocifisso, which stands near the ramparts above the Lecce Gate—I suspect, by the way, that this is the church I have seen referred to as that of San Domenico—dates from 1230, and externally is fairly complete; unfortunately, its surroundings are in such a state of unspeakable filth that any prolonged study of it is almost impossible. The interior has a curious screen or reredos, of early form, but late work.

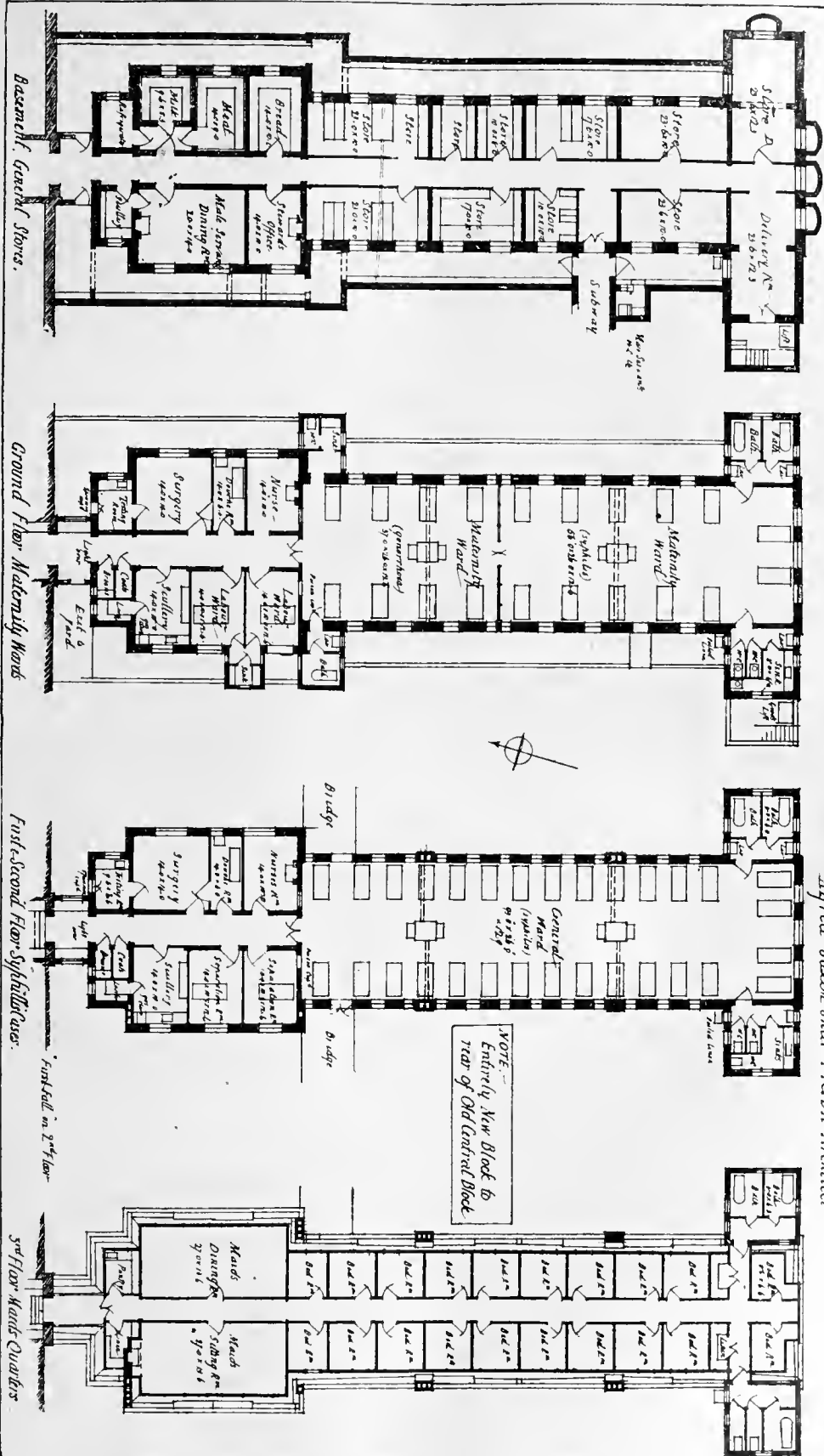
But the most interesting church of all is not in Brindisi, but just outside the town, across the north branch of the harbour. This is the Madonna del Casale, in a fine state of preservation, and now declared a national monument. It was founded in the year 1300 by Philip, Prince of Taranto, and his wife, Catherine of Constantinople. Like the church of San Paolo just described, it is an open hall inside, with a timber roof of recent construction. Unlike San Paolo, it has transepts, and the presbytery is divided off by a chancel arch. The perfectly plain walls are entirely covered with contemporary frescoes long hidden by whitewash, but now disclosed by the personal labours of Canon Camassa. Over the west entrance—surely a most unusual position—is an enormous Last Judgment, by Rinaldo of Taranto—an artist hitherto unknown to me—while the walls are covered with decorative paintings set in panels formed by painted ornamental borders. One is a fine Tree of Jesse, the others represent visits to the Sanctuary of various great people, with their retainers, armour, arms, and horses—a perfect storehouse of heraldry and costume. These bear various dates in the 14th century. Against the walls, and destroying much of the frescoed space, are the inevitable baroque altars. The whole empty interior, with its low-toned paintings lit almost entirely from the west door, is most impressive. Of the exterior, while the stonework patterns of the front, carried out in buff and brown stone, recall the black and white or dark green marble façades of mediæval churches in Tuscany, the canopy over the door is strongly reminiscent of Arab work, while the alternate bands of dark and light stone of the side walls are common to both Italy and North Africa.

The domestic architecture of Brindisi presents points of peculiar interest. To begin with, there is the interesting front of a Norman house near the cathedral. Various dates are assigned to it, even as early as the 10th century. Judging from the pointed arches which must be part of the original structure, the date cannot well be earlier than 1160, while the ornament, in its exuberant forms, recalls an earlier period of Lombard type mingled with Norman.

A very different building is the Palazzo Nervegna, where, till lately, the Austro-Hungarian Consulate was housed. While its forms offer a most interesting archaeological-architectural puzzle, I have come to the conclusion that it is not an early example of Renaissance, as it at first appears to be, but must belong to the late 16th or early 17th century. I may also add that though it has an open cortile, this cortile has no colonnade round it, as is the case almost invariably in the palaces further north, but only a gallery supported on brackets. In Apulia, indeed, this cortile is either non-existent or is represented by a courtyard, which is little more than a light-well. Its place is often taken by a large entrance hall.

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SELECTED DESIGN
 FEMALE LOCK HOSPITAL HARROW RD. N.W.
 NEW EXTENSIONS.
 Alfred Saxon Snell F.R.I.B.A. Architect



The Palazzo Montenegro, in the occupation of the P. and O. Company, is externally little different from many a Northern palace, and internally has a courtyard—this is the exception which tests the rule—with arcades at the side, and at the back a wide low arch with a terrace below it; through the arch are visible the piers of an arcade, which gives on to a garden. It has all the appearance of being the work of a Genoese architect, or of one trained at Genoa.

Big palaces are uncommon in Brindisi, or, indeed, in Apulian towns; on the other hand, Brindisi is remarkable for the number of small houses it possesses, and these show some unique features.

As you are well aware, the Italian builder of all ages, from the days of the Romans onwards, had a very firm dislike in his town architecture to the use of gable ends on to the street. Nor did the triangular pediments beloved alike by the builders of temples and churches ever tempt him to have recourse to it in his domestic buildings. At the most we sometimes see a gable end with overhanging eaves at right angles to the street, but always, if possible, the building had a hipped roof with a heavy cornice or far projecting eaves. This is the exact opposite, of course, of the Northern Medieval practice, where gable ends on to the street are such a feature of the towns. I was greatly surprised, therefore, during my wanderings about the highways and byways of Brindisi, to see, not several houses, but rows of houses, with low-pitched gable ends, many of them cottages one-story high. As a rule the gable end is quite undisguised; occasionally it is partly masked by the triangular part being set back from the face of the thick front wall, along the horizontal top of which a moulding is carried. I show among my sketches a number of views of such houses, and among them another variety, which, in addition to the gabled end, has an arched recess with a balcony at the first floor level. This form of construction is made possible by the fact that ground floors and generally first floors are vaulted in stone, thus affording a foundation for the wall at the back of the recess. There is much that could be said, by the way, about the forms of vaulting universally employed in this part of the world. These are carried out with a minimum of centreing, and are direct descendants of the art of the mediæval builder: but mindful of the dictum that the art of boring is to leave nothing unsaid, I abandon, with this brief reference to the subject, an interesting survival of traditional art.

Another peculiar feature of the Brindisi houses is that in many cases they have in front of them a courtyard enclosed by a high blank wall between them and the street, while the house is approached by an external staircase in the courtyard. Indeed, regular external staircases leading from the street to the first floor are not uncommon. There is a much-decayed mediæval house still standing with its external staircase, and I have noticed others with external staircases built as late, I should say, as the early 19th century, during my brief visits to Bari, Lecce and Taranto, but I looked in vain in other towns for gabled houses or cottages like those at Brindisi. I am inclined to think, therefore, in view of the importance of Brindisi as the port for embarkation to the Eastern provinces of the Roman Empire, that these houses must be of Byzantine origin, and reproduce similar features in Byzantine houses. I am indebted to Professor Lethaby for this suggestion; but I have not had time to go into the question of the Byzantine house, and its connection with Brindisi.

Brindisi has two fine castles. The Swabian Castle, built by Frederick on a bluff overlooking the north branch of the harbour, is well inland. Considerable additions were made to it by Ferdinand of Aragon, in 1481, and it was enlarged and modernised by Charles V.; it is now a barracks and military stores. It is an imposing mass of masonry, with many modern additions. The other castle, called the Alfonso Castle, otherwise the Forte a Mare, stands on an island at the entrance to the harbour; it is much smaller but more picturesque, and has the attractive feature of an internal harbour, by which you

sail into and land at the fort. Brindisi still keeps some of its old walls, fast falling into decay, and two gates. Of these the finest is the Lecce Gate, rebuilt by Charles V.

But Frederick's finest castle is that of Castel del Monte, already referred to, which stands on a high hill beyond Andria. The 13th century portal is Classic in detail, though not in proportion. The interior still has some remains of its former magnificence in the shape of marble columns, and portions of marble pavements and wall linings.

At Bari is a castle of Frederick's, lying low by the seashore, and at Bari are the two magnificent Norman churches already referred to, St. Nicholas and the Cathedral of San Sabino. The interiors have this peculiarity which differentiates these Norman churches from those of our country—the great piers of the nave are replaced by shafts of marble and granite, giving them a lighter appearance internally. The naves are ceiled in wood, that of St. Nicholas being of fine gilt, coloured and carved Renaissance work. The interior of the cathedral was covered with stucco in the 18th century, completely destroying its character; this is now being removed, and the whole of the original mouldings and carvings intact beneath are in process of revelation.

Taranto, as I have already said, is a town of narrow streets, and for this part of the world, high houses. Most of them are three and many four stories high. Like New York, its houses have been forced up in the air through the exigencies of a restricted site. The only change I noticed in the old part of the town, which—as at Bari—is quite separate from the new, was the destruction of the battlemented wall overhanging the inner harbour, on which the fishermen used to dry their nets. The castle of Taranto is still in existence; it was built by Ferdinand of Aragon, and strengthened by Philip II.

The Cathedral of San Cataldo—an Irish saint who preached in Italy—dates from 1050, and has been modernised externally. The interior has antique shafts with Byzantine capitals, doubtless coming from an earlier structure, and a later carved, painted, and gilded ceiling. I noticed in one of the main streets a fine 14th or 15th century Gothic church front, raised high above the pavement level, and approached by a picturesque baroque staircase, but was unable to get inside. Outside the town are the remains of a Byzantine aqueduct. The remains of an early Greek temple inside the town I have already referred to.

Lecce, the chief town of the southernmost province of Apulia, has the usual narrow crooked streets, but some fine piazzas. I have referred to the ruins of a theatre in the town, and the column which came from Brindisi. Lecce is the very home of baroque architecture, vying in this with Malta. It is worth while quoting in this respect the remarks of an English traveller, Swinburne, who visited the town about 1780:—

"The fronts of the principal edifices," he says, "are crimped into such uncouth, crowded decoration that I lamented the Grecian arts ever entered into this country; for the architecture of the Goths and Saracens" (for which, by the way, he had a great dislike), "with all its oddities, is the very perfection of beauty and good sense, when compared with these Corinthian and Composite oddities."

The view of the Archbishop's Palace and the adjoining front of the cathedral bears out these remarks. I remarked here, what I had noticed elsewhere, the survival of mediæval forms in the carvings. Lecce has a connection with this country in the fact that Verrio, who painted so many ceilings and staircases in the big country houses of Queen Anne's time, was born there. Not far from Lecce is Galatina, with a very fine church full of mediæval frescoes, and a fine tomb of the founder. On the way to Galatina, Soleto is passed, with a fine campanile of 1397, built by the founder of the Galatina Church; it is very like a Northern African minaret.

At Otranto is a famous castle, and a small town, tightly packed into walls, and a fine Norman cathedral with a noble crypt, and a mediæval mosaic pavement still showing the hoof marks of horses stabled there by the Turks in 1480.

At a place called Gioia del Colle, half-way between Bari and Taranto, is a castle of Frederick's; while at Oria, half-way between Brindisi and Taranto, is another of Frederick's castles.

Finally, let me say, so that Brindisi may be, in the words of Horace's satire, the end not only of "a long journey," but of "a long paper," that if any student of architecture thinks of visiting Apulia, or in particular Brindisi, I should be glad if, for our mutual benefit, he would direct himself to me. I can give him some useful advice, and should like some particulars of various buildings in return. There is much material for study in the country; to quote the words of a French architect who visited Apulia some forty years ago:—"It would be interesting to make a comparison between the Mahometan and Christian monuments of Syria and Palestine, the Italian and Sicilian-Norman monuments, and those of the Middle Ages in France, keeping within the limits of the Crusades, that is, from the eleventh to the end of the thirteenth centuries"; while the differences and the likenesses between the Norman architecture of England and of Apulia would be an additional point of interest for Englishmen.

COMPETITIONS.

BOROUGH OF TAUNTON HOUSING SCHEME—BOROUGH OF MORLEY HOUSING SCHEME.—The Competitions Committee of the Royal Institute of British Architects request members and licentiates of the Institute not to take part in the above competitions until a further announcement is made that the conditions have been brought into conformity with the Institute regulations for architectural competitions.

THE "DAILY EXPRESS" HOUSING COMPETITION.—During the last few days the plans in this competition have been at the Goupil Gallery, Regent Street, where the work of selecting the premium houses from the plans designed for the Model Homes Exhibition, which is to be opened by Mrs. Lloyd George on May 19, is in progress. Premiums amounting to 1,500 guineas were offered by the proprietors of the *Daily Express* and the *Sunday Express* for the best types of model homes for workers conforming to the conditions laid down by the three assessors, Mr. Henry T. Hare, President of the R.I.B.A., Mr. Wm. Dunn, F.R.I.B.A., and Mr. A. E. Richardson, F.R.I.B.A. A very large number of plans were entered in the professional section, where premiums totalling 1,000 guineas were offered for the best designs for (1) Cottages for unskilled labourers, (2) Cottages for skilled artisans, (3) Houses for clerical workers. The walls of the Goupil Gallery could have been filled ten times over with these plans, which had to be hung in relays for the adjudicators.

MORLEY AND TAUNTON HOUSING COMPETITIONS.—Members of the Society of Architects are requested not to take part in these competitions without first ascertaining from the Secretary of the Society that they have been approved by the Council.

NEWCASTLE-UPON-TYNE LAY-OUT SCHEME FOR HOUSING.—We are informed that the Competitions Committee of the R.I.B.A. have withdrawn their objection to the competition for the Newcastle-upon-Tyne Lay-Out Scheme, an important amendment having been made in the conditions.

WALKER HOUSING COMPETITION (NEWCASTLE-UPON-TYNE).—The Housing Committee, having made certain modifications in the conditions, members of the Society of Architects are informed that they are now at liberty to compete if they desire to do so.

PROFESSIONAL AND TRADE SOCIETIES.

ROYAL ACADEMY OF ARTS ARCHITECTURAL SCHOOL.—The Royal Academy Architectural School, which was closed in December, 1915, for the duration of the war, will re-open on Monday, April 23. Candidates for admission should apply to the Registrar, or to the Master of the School, at the Royal Academy.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Strand, W.C.2

The Library, Merton College, Oxford, from a water-colour by Mr. Walter S. S. Tyrwhitt, M.A., R.B.A.
Stained Glass Windows for the Palace of Peace at The Hague, by Mr. Henry A. Payne. Subjects: "Discovery," "Navigation," and "Education."
Red Triangle Institute and Hostel, constructed of salvaged war hut materials. Mr. S. Phillips Dale, M.S.A., Architect.

ILLUSTRATIONS.

A sheet of Old English Furniture Sketches.

Currente Calamo.

The Royal Academy is to be congratulated on its list of elevations of five Associates to full Academic rank last Friday, probably in part the result of the recent decision that Royal Academicians shall in future retire on reaching a certain age limit, but also of the tardy recognition that men like Sir William Orpen and Mr. Frank Brangwyn have long since won fame deservedly that little needed full recognition at Burlington House, but nevertheless should have had it long before some of the comparative nonentities of the past. The heartiest congratulations from our own readers will flow forth to Mr. Ernest Newton, whose personal qualities command the affection and esteem of all who know him, and who is to-day the recognised architect of the English House as universally as was his master, Norman Shaw. May he score many more successes for clients who sensibly prefer the combination of comfort and beauty to the somewhat laboured eccentricities of some of us! He is only sixty-two, and will live, we trust, to reap his full share of the vigorous recovery in house-building of the highest class that is due. Of the painters, Sir William Orpen has added to his pre-war portraits good work in the war zone that has won for him fresh fame, and official approval. So has Mr. Frank Brangwyn, another official artist of the war. Mr. Adrian Stokes, whose pictures have been twice bought by the Chantrey Trustees, is an old favourite with the discerning public, and has been so for more than a generation. Mr. William Colton, who began a sculptor's career at the age of twenty, and began to exhibit here and at the Paris Salon, is best known outside as the author of the Royal Artillery War Memorial in the Mall. Of the three new Associates, Mr. Alfred J. Munnings is unrivalled as a limner of horses; and his vivid impressions of war incidents painted for the Canadian Government. Mr. Claude Sheperton's etchings at the Academy are as widely appreciated as his contributions to *Punch*, and Mr. George Harcourt long since won the honour now accorded.

Mr. John W. Simpson, F.R.I.B.A., of Gray's Inn, is to be the President of the Royal Institute of British Architects for 1919-1920. As Past Vice-President and

Secretary of the Architectural Conferences, Mr. Simpson has done much useful work for architecture. He is Officier de l'Instruction Publique, Membre Correspondant de la Société Centrale des Architectes Français. His school buildings at Roedean and Haileybury College, Longstowe Hall, Gresham School Chapel, the Crown Offices at Westminster, the Cartwright Memorial Buildings, and Glasgow Art Galleries are a few of Mr. Simpson's works. The Vice-Presidents will be Prof. S. D. Adshead, M.A., Messrs. Walter Cave, E. Guy Dawber, and Percy Scott Worthington, M.A. The hon. secretaryship is given to Mr. Arthur Keen, F.R.I.B.A. The past-presidents are to be Mr. Henry T. Hare and Mr. Ernest Newton, A.R.A. The representative member of Council for the Architectural Association is Mr. Maurice E. Webb, M.C., D.S.O. The result of the election of the Council and Committees will be announced on June 2 next.

Property owners have to face another Act of Parliament and further complications in dealing with their property. It is absolutely necessary owners should know exactly how they stand, and to what extent the law permits increases of rent and mortgage interest, and from when. Any of them that read this in time should make any sacrifice thereof to attend a meeting in the Great Hall at Winchester House, Old Broad Street, E.C., to-day, when the chair will be taken at 3 p.m. precisely by Mr. Edwin Evans, J.P., L.C.C., and addresses will be given and the new Rent Restrictions Act explained. Questions dealt with in the new Housing Bill will be answered, and a discussion will be opened. We are sure all who are wise will become members of the Association, which has its headquarters at 17, South Street, Finsbury, E.C., and has put in a splendid year's work during 1918. Advice concerning income-tax abatements has proved to be of the greatest advantage to members, and has resulted in effecting savings of large amounts. The Association has prepared for the use of members printed forms for raising rents to meet the increased rates and cost of structural improvements in accordance with the provisions of the Increase of Rent and Mortgage Interest (War Restrictions) Act. It has also issued a manifesto, with full instructions and warnings, against penalties imposed under

the 1915 Act and the Amending Act. Counsel's opinion has been taken, and a further statement issued. Copies of these are supplied to all members. There are clear indications of far greater interest being taken all over the country in the important work of protecting owners, and the close co-operation of this Association with the National Federation of Property Owners and Ratepayers has materially strengthened the position of all concerned. Its coming work in peace time will be to agitate for the repeal of the unjust and wasteful legislation of the Finance Act, 1909-10, which has been the main cause of the shortage of housing accommodation, and which is impossible of administration, and imposes burdens upon property owners without any profit or benefit to the National Exchequer. It will also seek to secure a revision of the incidence of taxes on property under Schedule A, so that they may in future be made proportionate to the actual income received, and a readjustment of the rating of property, so that all national services shall be charged against the community as a whole and not specially upon property. The Association will also continue its endeavours to prevent the abuse of their powers by certain ground landlords, in unduly worrying lessees with repeated service of notices to repair, and claims for damages and the consequent cost of litigation. A committee of the council of the Association will confer with members of Parliament upon matters relating to property in order to obtain intelligent and proper representation of their interests in the future. All members are entitled to legal and expert advice free of charge, and this should be borne in mind by the small investor of his honestly-won savings in the safest security and surest guarantee of patriotism.

The very able paper on the Report of the Agricultural Policy Sub-Committee of the Reconstruction Committee, read at the Surveyors' Institution on Monday, which we regret our space is too limited to give in full, though mostly concerned with matters purely agricultural, contained a good deal that architects and builders concerned with farm buildings should not miss. As Mr. Sabin well said, we all have our opinions as to what constitutes a well-equipped set of buildings, and even on the best of estates there may

be room for something more. The waste in manure exposed to the weather calls for covered yards, and on dairy farms for a manure shelter and a tank to prevent the valuable liquid from running into the ditches and watercourses and to permit of its use in more profitable ways. The waste of labour in thatching calls for the erection of hay and corn barns under which also the last wagon loads on a doubtful night may be placed secure from damage. The thankless task of continued pumping to fill tanks calls for the provision, wherever possible, of a supply of water raised by artificial means to such a height as will permit of the cattle being watered by gravitation. The drudgery of chaff and turnip cutting, of carrying sacks to the granary, and distributing the chaff, call for the establishment of petrol or other engines, and convenient hoists, lifts and carrying troughs; and the desirability of freeing milk from all danger of contamination calls loudly for the perfection and use of milking machines, with the great incidental advantage of sparing cows the indignity of being milked by men with hardened and unadaptable hands. These are items which will not only save labour but help to dignify it.

Builders and other owners of house property frequently get a guarantee from some friend or employer of the tenant to further secure the payment of his rent. But, in law, a guarantee is often a document full of pitfalls for the guarantor. This is more especially so with continuing guarantees. A curious question was raised in the recent case of "Wingfield v. De St. Croix" on plaintiff's appeal from the Mayor's Court, London, to the High Court. The defendant's gardener had become tenant of a cottage belonging to the plaintiff, and the defendant had guaranteed the rent for three months, and then from week to week thereafter. This was a continuing guarantee, with no provision for its termination by notice. Four months after the tenancy began the gardener left the defendant's service, and he thereupon gave plaintiff a week's notice terminating his guarantee. The tenant, however, with the consent of his landlord (the plaintiff), stayed on in the cottage, and plaintiff now claimed £12 as arrears of rent owing from defendant on his guarantee. The court below had given judgment for the defendant, and now two judges of the High Court went fully into the legal points. The general rule is that upon a continuing guarantee, as this was, and where no provision is made for notice, the guarantor cannot limit his liabilities. But here the judges held it to have been the clear intention of the parties that the guarantee should only stand good while the gardener was in defendant's service. So the Court dismissed the appeal, though with some hesitation, and the case shows the importance of always reserving power to terminate by notice where a continuing guarantee is given.

A war memorial hall will be built at Maidstone at an estimated cost of £50,000.

ASPHALT AND ALLIED SUBSTANCES.

The antiquity of the use of asphalt and its kindred substances is hardly recognised by its users, and many will read with interest a portly volume of American origin, by Herbert Abraham, B.S.A., published in New York by the D. Van Nostrand Company, and here in London by Messrs. Crosby, Lockwood and Son, of 7, Stationers' Hall Court, E.C., at 25s., in which are combined a very readable historic review of the uses of the material, a full description of methods of analysis for the works chemist, hints to the salesman who desires intelligently to enlarge on the merits of the articles he vends, an exposition of the principles underlying the practical application of bituminous products for structural purposes, of interest to the architect, the engineer, and the contractor, and an exposition of the methods of testing of special value to the technical student. The author has drawn freely, with due acknowledgment, from contemporary text-books and newspaper articles, but there is included a substantial amount of original matter accumulated by himself during the past nineteen years, much of which will be found new and interesting, especially to readers this side.

The origin of the words "asphalt" and "bitumen" may be traced back to Babylonian times and even earlier. "Asphalt" was distinctly Babylonian, and was later adopted by the Homeric Greeks in the form of the adjective signifying "firm," "stable," or secure. From the Greek it passed into the late Latin and thence into French—"asphalte" and the English "asphalt." Many present-day readers prefer the French orthography, and we bow, of course, to our advertisers who favour it; but the final "e" is at least superfluous, and the right spelling is "asphalt," though, as in the misuse of the word "tyre" for "tire," the wrong usage seems likely to prevail indefinitely. The word "bitumen" is of Sanskrit origin, and was originally "jatu-krit," meaning "pitch-creating." The Latin equivalents were "gwtumen"—that is, pertaining to pitch, or "pictumens," exuding a bubbling pitch, subsequently shortened to bitumen by both French and English. The words bitumen, asphalt, resin, tar, pitch, and wax have been in use for many centuries, long before the advent of the English language. Probably each of these words at first related to the aggregate characteristics of some typical substance closely associated with the processes of daily life. As nothing of chemistry was known when the terms originated, they were at first differentiated solely by their physical characteristics: but as new substances were discovered they were extended in scope till the various expressions completely outgrew their former bounds. This resulted in overlapping and ambiguity, and even to-day there is no uniform or standard system of nomenclature, and no two authorities agree on the subject. Mr. Abraham suggests a basis of nomenclature which seems to us a reasonable one, but probably here and in America it will be little observed, lacking, as both countries do, any standard authority such as the French Academy exercises.

The earliest recorded use of asphalt, dating from 3000 to 2500 B.C., was by the Sumerians, a pre-Babylonian race inhabiting the Euphrates Valley, skilled in stone-carving and decorating, the latter facilitated by the use of the material as a cement. From 2800 B.C. to 2500 B.C. we

find asphalt similarly used by the early Persians, and about 2500 B.C. by the early Egyptians, who employed it for the preservation of their dead rulers, the remains of which are known as "mummies," a word at one time synonymous with "asphalt." In Biblical times (2500 to 1500 B.C.) some contend that Noah used asphalt to waterproof his ark, and the Vulgate favours the idea, "bituminabis cum bitumine." But doubts have been expressed about this, and a belief held that pine pitch was known at the time of the deluge—whenever that was—which might very well have been used. Other at least as likely references to the use of asphalt will be found in Gen. xi. 3, Gen. xiv. 10, and Exodus ii. 3. By the later Babylonian rulers, from 700 to 500 B.C., most of whom were great builders and road-makers, it is certain asphalt was in common use, and it seems strange that the art of paving with stone blocks set in asphalt, evidently known to Nebuchadnezzar's father, should have become lost to mankind, only to have been rediscovered in the last century. An interesting series of references to the sources, nature, and other uses of asphalt is given by Mr. Abraham from Herodotus, Xenophon, Hippocrates, Aristotle, Hannibal, Strabo, Vitruvius, Pliny the Elder, Marco Polo, and others.

Coming down to more recent times, the earliest reference to the production of wood tar on a large scale, as practised in Norway and Sweden, occurs in Boyle's "Chemicus Scepticus" (1661), but the first accurate description of Persian asphalt deposits is by D. J. Fryer in his "Nine Years' Travels" (1672 to 1681). The discovery of the Val de Travers deposit of asphalt in the Jura Mountains was made by the Greek doctor, Eyrinis d'Eyrinis, in 1712, to whom some ascribe the finding of the Limmer deposit near Hanover in Germany in 1730; at any rate, his third discovery, of one of the most important deposits in Europe in the Rama Valley in 1735, has proved a mine of wealth and convenience to its users, having been worked constantly up to the present time.

The geology and origin of bitumens and pyrobitumens is ably dealt with in Chapter IV., and other mineral production throughout the world in that which follows. Part II. includes chapters on the Mineral Wages, Methods of Refining, Native Asphalts Occurring in a Fairly Pure State, and those associated with mineral matter. Asphaltites, Asphaltic Pyrobitumens, and Pyrobituminous Shales. Part III. is mainly devoted to the Tars and Pitches. Part IV. describes the Manufactured Products and their Uses, and Part V. the method of testing. There are 208 illustrations, a useful bibliography, and a good index.

The volume will be widely appreciated by many readers, if its purpose and extent are sufficiently made known by its enterprising English publishers.

Miss Olivia M. Bryden's pastel portrait of the late Captain F. C. Selous, D.S.O., has been purchased and presented by Mr. P. Haig Thomas to the Royal Geographical Society. Another portrait of Captain Selous, by the same artist, has been presented by Mr. Wilson Fox, M.P., to the Salisbury Club, Southern Rhodesia.

Mr. William Rees Jenkins, B.Sc. (Engineering) London University, A.M.I.C.E., A.F.E.R.Aer.Soc., diploma of the Institution of Municipal and County Engineers, and Mr. B. Colson Adkin, M.A. (Cantab.), with honours in natural science, Cambridge University, diploma in agriculture, and Beadel Prizeman of the Surveyors' Institution, have joined Messrs. Richard and Albert Edward Parry and Mr. B. W. Adkin on the retirement of Mr. Blake. The firm of Parry, Blake, and Parry and B. W. Adkin will hereafter practise under the style of Messrs. Parry, Adkin, and Parry.

Our Illustrations.

THE MERTON COLLEGE LIBRARY, OXFORD.

Merton College has the distinction of being the oldest college in Oxford, and it would seem that no part of it can be older than the ancient library, which is the subject of this illustration. It was built in 1349 by William Rede, Bishop of Chichester. The interior is divided into a series of studies, each lit by one of the lancet-shaped windows which, together with the interior fittings on the north side, date from the 14th century. One of these studies contains a large volume on the Antiquities of Rome, fastened to the desk by an iron chain. The east window contains some curious old Flemish glass of the 16th century.

The carvings and plaster are of the 17th century, as well as the fine old Jacobean staircase and the curious wooden arches shown in the picture. The bust that stands with its back to the window is of Sir Thomas Bodley, the founder of the great library that bears his name. The two large globes, of which one is shown in the centre of the drawing, have a very picturesque effect.

But it is not so much in these details, interesting as they are, that the charm of the place lies. This is the complete beauty and harmony of this haunt of ancient peace. It is without doubt one of the most perfect interiors in Oxford or anywhere else, and has the quality that only comes with time.

This drawing, lent us by the artist, Mr. Walter S. S. Tyrwhitt, M.A., R.B.A., of Oxford, has been exhibited at the Royal Society of British Artists.

STAINED GLASS WINDOWS FOR THE PALACE OF PEACE AT THE HAGUE.

This is the last window of the set of three from the Royal Academy Exhibition, 1918, lent us for illustration. The subjects are "Discovery," "Navigation," "Education," and "Discovery." The previous illustrations of these designs appeared in THE BUILDING NEWS for December 25 and January 22 last. The top compartments in each window are occupied by the Signs of the Zodiac. In the present one are the Crab, the Archer, the Bull and the Scorpion. Mr. Harry A. Payne, of Amberley, Gloucestershire, was engaged on the commission of the Government to prepare these cartoons.

RED TRIANGLE INSTITUTE AND HOSTEL, CONSTRUCTED OF SALVAGED WAR HUT MATERIALS.

We gave a couple of photographs of a London Military Temporary Club's quarters in our issue for April 16, and also a sheet of working drawings of a Triangle Club designed to be built of salvaged materials from war hut buildings. We give a larger Institute and Hostel of a similar kind to-day, the latter part of the scheme being two floors high. The plans are self-explanatory. Mr. S. Phillips Dales, M.S.A., the consulting architect for the Y.M.C.A., lent us these drawings, and other examples will follow.

A SHEET OF OLD ENGLISH FURNITURE SKETCHES.

The four pieces depicted on this page are of familiar type, and speak for themselves as nice examples of the Queen Anne period of walnut and of Chippendale style.

HOUSING AND PLANNING: A NATIONAL POLICY. WITH SPECIAL REFERENCE TO WALES.*

By CHARLES T. RUTHER, O.B.E., F.R.I.B.A., M.S.A.

(Hon. Examiner and Member of the Council of the Society of Architects.)

The universal appreciation of the serious character of the housing problem and the realisation of the fact that a real and satisfactory solution can only be attained upon national lines, renders it necessary that the whole subject shall be approached with a new and comprehensive outlook.

A national policy of housing and planning as understood by most people is simply a multiplied application of a local or parochial policy. In other words, the adoption of that principle in respect of housing and planning which in the past has been so disastrous to national life, to commercial and industrial development, and so productive of the greatest social and industrial problems with which imperial and local authorities alike are to-day faced. The net result of a blind following of a system unsuitable and unsatisfactory.

Broadly stated, a national policy of housing and planning is that which is designed to direct and control the social and industrial development of the country; which has for its object the development of all that is best in national life, at the same time providing for the social needs of the people, and for the utilisation of Nature's gifts to the fullest extent. Such a plan to be preceded by a regional study of the national resources placed in their true historical perspective and foreshadowing their potential development in the future.

THE IMPORTANCE OF THE LAY-OUT SCHEME.

Housing in its generally accepted sense should be good housing; but, further than this, housing in its little understood sense means the "scheme of lay-out," the placing of the home in its proper and rightful place; the public housing of the community as well as to private housing of the individual citizen, the commercial and industrial housing of the worker, where he or she toils in the working hours of the day.

It is, therefore, very clear that in any great national scheme, as indeed in any purely local scheme, housing cannot be divorced from planning. Both terms, housing and planning, being used in their full and complete sense, their national meaning and import being fully realised and understood.

Segregation to any real extent of housing from planning; separation of housing, in its meaning as affecting the home of the people, from housing in the sense of providing the workshops for the people; the study of the homes only and not of the workshops, or of the workshops and not of the homes; the study of housing as it affects sections of the community only—all lead to the narrow, unreal, unsatisfactory, unsocial and uncommercial in rational life, and bring into being problems momentous and grave, both in respect of social and industrial evils.

The old methods of housing and planning have effectually cramped physical development, and limited social as well as economic and industrial progress.

As the study of a given town or district should be carried out, in reference to matters of housing and planning, as one task, not as separate tasks—that the scheme in its large signification should find a fitting expression for the social life of the citizens, where the design should not exhibit an individual cleverness or illustrate some particular pet theories—so in a national sense should housing and planning be undertaken.

The economics of town, district and regional development, if given the most superficial consideration in the light of modern thought and education, will call for the study of numerous subjects which in the past have been wholly neglected.

In the national scheme there is presented the privilege of being able to exert a great influence of practising a self-restraint, of encouraging the finer and larger, and discour-

aging the smaller and narrower, tendencies of civic life.

The disposition and arrangement of any area with an eye to the future development of the mineral resources of a district, the importance of encouraging productive work as a pleasure in life, and not solely as a mechanical means of increasing wealth; the retention to the greatest possible extent of the amenities of nature; the broad outlook in regard of future needs and requirements, the consideration of one district in relation to neighbouring districts; the correlation of districts with each other, and the interplay of rural and urban interests, as well as the interdependence and linking up of all in the proper scheme of national development; are all matters which, unfortunately for national life, have not in the past received proper and due consideration.

HOUSING IN RELATION TO NATIONAL LIFE.

It is extremely doubtful whether housing and planning in a great national sense, in this country at any rate, have been fully grasped or even studied. Certainly the vital bearing of these subjects upon the national life and character has perhaps not even yet been fully appreciated.

During the years immediately preceding the outbreak of the war a certain revival had taken place here and there in matters of housing and planning; but only because conditions had assumed in most crowded industrial areas a state eminently dangerous to national life. The period of enforced inactivity in matters of housing, since the opening of the great war, has produced what can only be described as a state approaching industrial revolution, and the heavy burden under which this country at present labours has been increased to a grievous extent by at least a quarter-of-a-century's narrowness of vision, in the civic and corporate sense, and the refusal of the people through their proper representatives to grapple with a menace of ever-growing dimensions, hedged round by ever-increasing difficulties.

In Wales our industrial problems have been made serious by the physical configuration of the regions. Nature has been kind to Wales in depositing vast areas of rich minerals within its bowels; kind in giving it beautiful mountains and deep gorgeous valleys; but how blunderingly man has gone to work, and what a hideous failure he has made in his desire to wrest from the earth her treasures, regardless of the lives of the people.

Housing in these areas has clearly been considered only in the light of a necessary evil, essential only for the snatching of the wealth of the earth at the expense of all that is beautiful in Nature, and without the slightest regard to national life.

There has been no community control, no town or district planning, no regional planning, and the results are outstanding examples of the dreadful failures of old-time methods, or rather absence of method.

THE CREED OF THE HOUSING REFORMER.

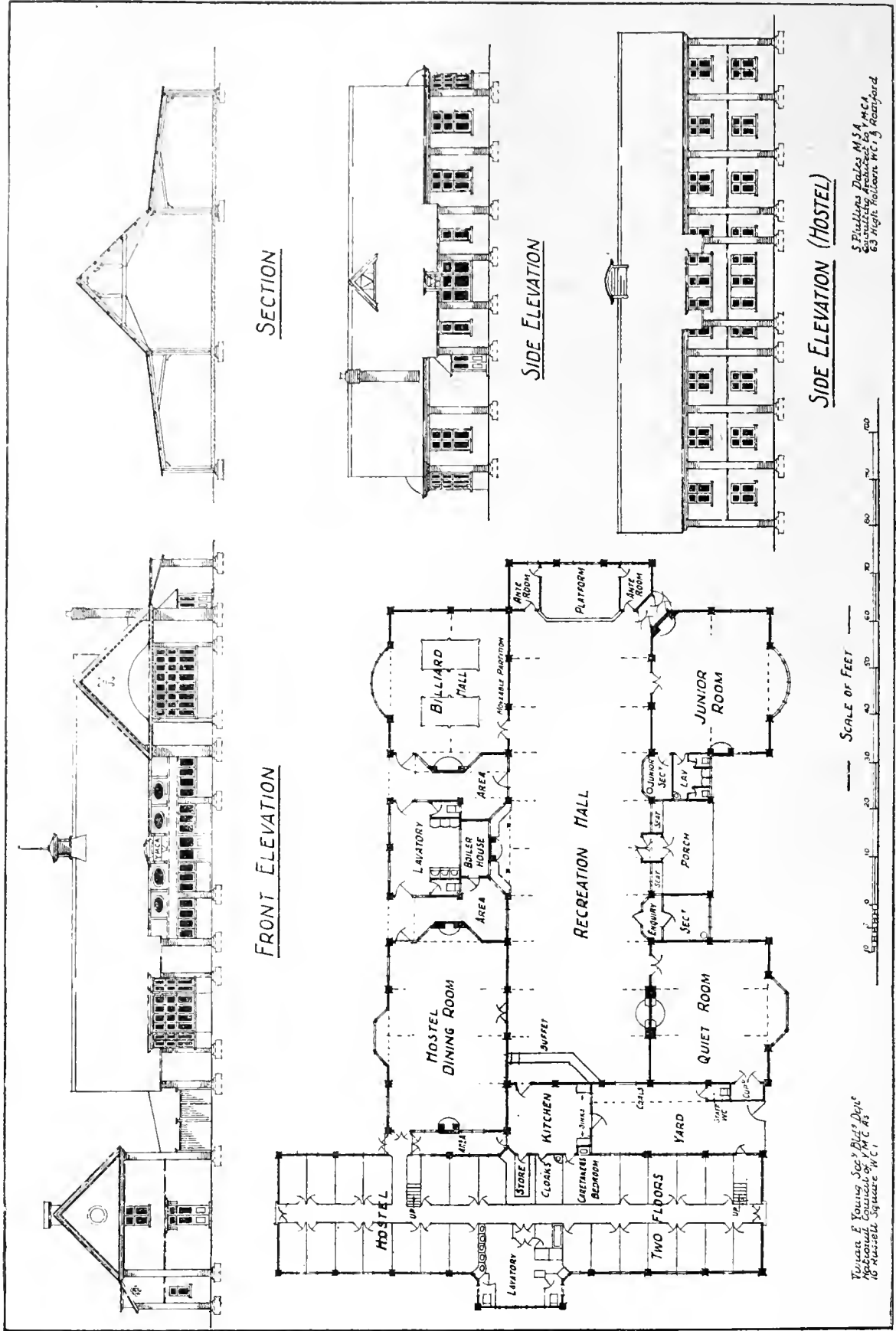
The creed of the true housing reformer and of the modern town-planner may be set out very concisely as "more light and air, more space and beauty, and greater accessibility." The tenets of this creed are applicable in their full meaning to a sound national policy of housing and planning.

By common consent much greater care must be shown for the housing conditions of the people in the years immediately following the declaration of Peace, than was shown in those preceding the outbreak of the great world-struggle. It cannot be expected that the great problems of housing and planning in the immediate future will be satisfactorily handled by that form of isolated effort so characteristic of pre-war days; rather will the desired results be obtained by a great co-ordinated national effort.

Every house should have its own plan, and although it is possible to make one plan serve for many houses, a proceeding unfortunately too often followed, that is not so with a town. Each town should have its own plan, and what may be satisfactory to one town will be found quite unsatisfactory for another. That plan should be "made to

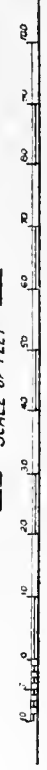
*A paper read before the Society of Architects, April 24, 1919.

THE BUILDING NEWS, APRIL 30, 1919.



Thomas F. Young, Secy & Bldg. Dept.
National Council of Y.M.C.A.
16 Russell Square, N.C.

SCALE OF FEET



S. Phillips Dalles, M.S.A.
Consulting Architect for Y.M.C.A.
63 High Holborn, W.C.1, London

RED TRIANGLE INSTITUTE AND HOSTEL, CONSTRUCTED OF SALVAGED WAR-HUT MATERIALS.
Mr. S. PHILLIPS DALLES, Consulting Architect, Y.M.C.A.

measure," for one can scarcely conceive it possible for a plan suitable for one town to fit in with the conceptions of the citizens, the geographical conditions, the physical characteristics and the industrial requirements of another town.

As with town planning, regional planning is in the true sense the art which should give concrete expression to the underlying personality, as it were, possessed by each town and each district within the region. In a national scheme of housing and planning everything depends upon the regional outlook, and every part of a great national scheme should have stamped upon it clear evidence of its relationship to and partnership with all other parts.

No housing scheme should be embarked upon unless it forms part of a town planning scheme, and no town planning scheme should be decided upon unless it forms part of a regional planning scheme, and one would like to say that all regional planning schemes should form part of one great national scheme. The proper development of the national resources, agricultural and industrial, mineral and metalliferous, should form the foundation of the study of a national scheme.

THE FULL MEANING OF TOWN PLANNING.

The possibilities of town planning in a district and of regional planning in a country, it will be generally admitted by all students, are illimitable. The full significance and importance of the aims, the possibilities and far-reaching consequences and effects of a proper regional plan appear so great as to suggest the revolutionising of modern ideas of national life.

All the evils associated with defective housing—and their name is legion, all the deadly results of the lack of light and air; the immense sums spent annually upon street widenings and other improvements, are the direct outcome of the old-fashioned methods of simply allowing towns "to grow." The direct results of the old-time systems are the existence within the heart of all great communities of great public institutions; monuments of the failure of modern enterprise.

Town planning means to the future citizens of a town or district, in a communal sense, all that the well-planned and designed house means to the individual citizen, all the difference between the real home and a mere shelter. Few private homes are built piece-meal. Most homes, large or small, are built upon some pre-conceived plan. Not so, however, with towns and districts; they have been planned in the past, and unfortunately are being planned to-day, piecemeal fashion. No well thought-out scheme has been or is being laid down in advance; but matters have been and are being just allowed to "muddle through," as it were.

The serious character of the housing problem to-day, in so far as unhealthy and overcrowded areas are concerned, and in fact, in so far as is concerned the scarcity of dwellings, has its genesis in the extraordinary deficiencies of the town plan upon which the affected areas have been developed.

NOTHING TO BE GAINED BY OVERCROWDING.

It has yet to be realised by owners and others that there is absolutely nothing to be gained by overcrowding. The cramped condition of the industries of this country and the congestion of the business centres of populated districts and the serious problems resulting from these disabilities are all due to the narrow outlook in the early laying out of the land.

The rapid growth of certain areas during the last two centuries took place, as is now unfortunately too well known, in the absence of any proper consideration of the needs of great communities in the matter of health, attractiveness and convenience.

The overcrowding of the land has so long been considered a necessity that people are only too slowly realising that this long-practised principle is in reality defective, uneconomical and in every way wrong. The cramped character of many arteries through thriving and thickly populated districts, the congestion of railway facilities at great industrial centres, added to the mutilation of

the beauties of nature, the pollution of rivers and streams and the shutting out of views, are all the result of the ill-considered and haphazard manner in which districts have been allowed to develop.

The huddling together of the homes of the workers and the horrible complicated jumbling of means of communication and transport at congested centres, together with all the other disabilities under which the present-day towns and districts suffer, are all due to the fact that districts have simply been allowed "to expand" in a fashion uncontrolled and unfettered, and in the absence of any really comprehensive plan.

THE NECESSITY FOR REGIONAL PLANNING IN WALES.

In many of the important hilly districts of Wales the physical conditions render isolated area-planning most disastrous. Future improvements and developments are rendered almost impossible by disconnected and disjointed planning. Perhaps the most important feature of these hilly districts, rendering comprehensive regional planning so essential, is that many arteries, destined to carry the ever-growing traffic of a thriving neighbourhood, are, owing to the physical characteristics of the region, the old narrow valley-highways as originally laid down upon the limited flat ground at the base of the valley. It is, therefore, of the utmost importance that regional planning on a most extensive scale should be adopted for the purpose of linking up upon national lines a chain, as it were, of well-considered town planning schemes.

The scattered crowded mining and manufacturing villages in the valleys, clustering round the pits and works, have produced very special and difficult traffic problems. These products of old-style planning are outstanding examples of the crying need of a better system. The main arteries before referred to, designed in their inception as accommodation roads for the farmers, have now become the only means of communication between one busy district and another, for heavy and light, for slow and fast traffic. They are narrow to a dangerous degree, tortuous and devoid in many instances of footways. These winding highways are frequently flanked by the houses of the workers, built in long dismal rows, the fronts abutting close upon the roadway, and the working parts of the homes, at the rear, pressed into a sunless well, dug out of the hillside.

What is required, and fortunately of recent years has been recognised, in relation to the orderly direction of the development of a town or district, is in a national sense still more urgently required. Those considerations which call for a well-considered plan for a home, for a given area within a town, or district, for the town or district as a whole, apply with greater force to the plan of a region.

THE LINKING-UP AREA PLAN.

The imperative prelude of any and of all great housing schemes is a properly conceived and well-considered area plan. This plan may affect a comparatively small section of a town or district, but such an area plan should of necessity form a link only in a greater town plan, and in the natural and reasonable sequence of things this town plan should in turn form a link in a greater regional planning scheme. By these means only will it be possible to properly control and order the true national development of the great tracks of undeveloped land in this beautiful country. The unspoiled regions will then be snatched from the mutilating hand of present-day methods.

It is boldly suggested that the only possible means whereby the errors of the past may be avoided are contained in the bold and fearless regional planning of Wales upon national lines. The main project may, in its opening stages, be little more than the laying down of a well-conceived skeleton of arterial highways, designed for the purposes of the development of the entire resources of the country.

At the present time, perhaps more than ever before in the history of our island home, there exist a series of circumstances which emphasise the imperative need of a great scheme upon an extensive national scale.

After the Declaration of Peace, there will probably be required not far short of one million houses in England and Wales; of this huge number perhaps one-tenth at least will be required in Wales, or 75,000 in the towns and 25,000 in the country. If the blunders of the past are to be avoided all these houses should be erected under town-planning schemes. So far the efforts of local authorities in the direction of town-planning within their own boundaries are good and will continue to be good, so far as they go; but there is required more urgently a still greater activity in the direction of independent town-planning schemes upon the part of local authorities, and an urgent call for a national scheme supplementing and co-ordinating all town-planning schemes.

The control of the national regional planning would necessarily have to be undertaken by some central body, say a Welsh Town Planning and Development Commission. This Commission should take over much of the authority now exercised by the Local Government Board, and should be a small body of experts of great experience in town planning, housing and industrial problems.

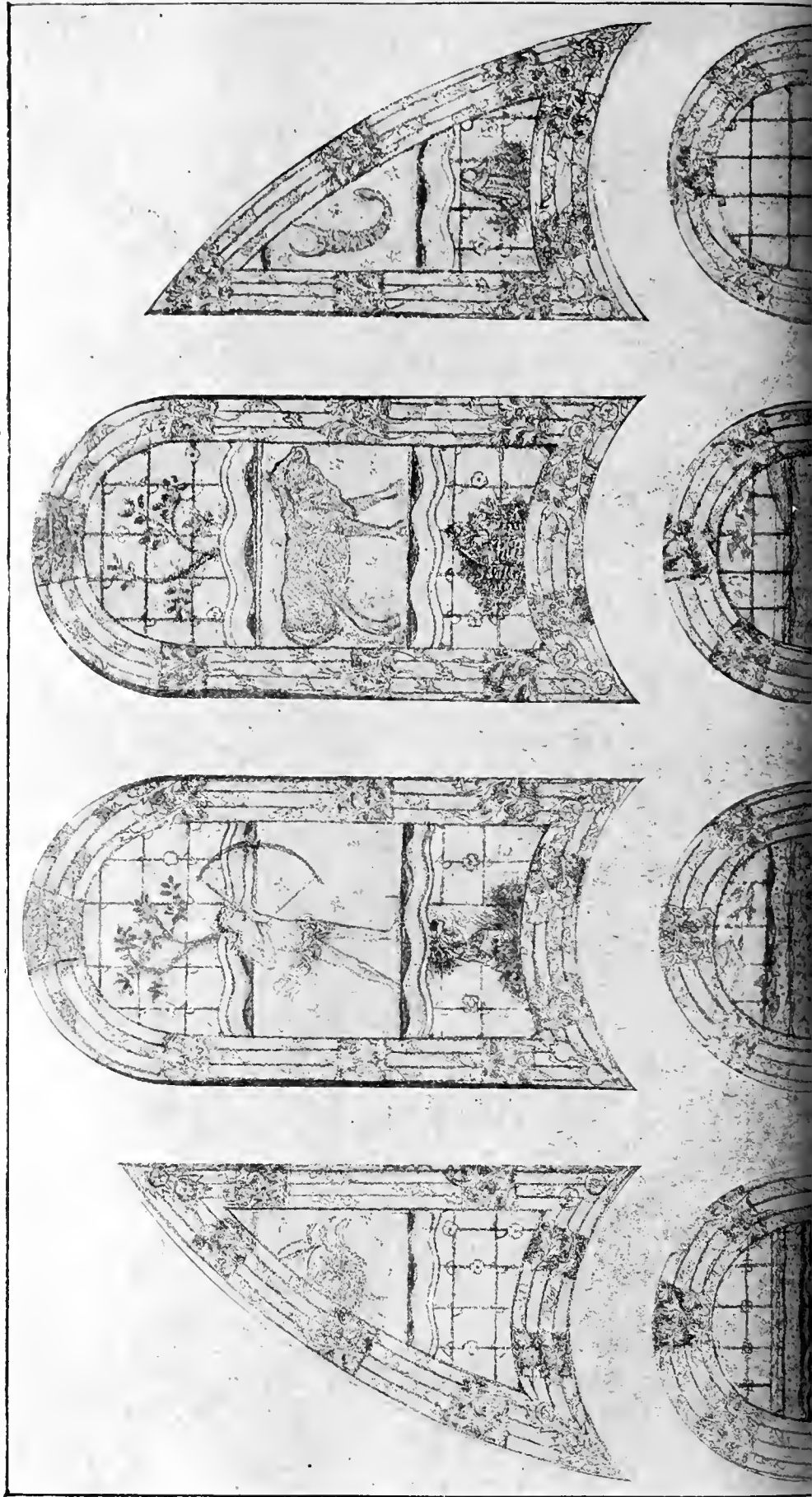
In connection with the decision of the Government to assist financially in housing schemes throughout the country, and the setting up, in connection with this promise of extensive State aid, of a special housing department of the Local Government Board, and the appointment of Housing Commissioners for various parts of the country, it would seem that by a very little extension of the principles already agreed to by the Government, a Welsh Town Planning Development Commission with fairly considerable powers would bring housing and planning in a national sense under control.

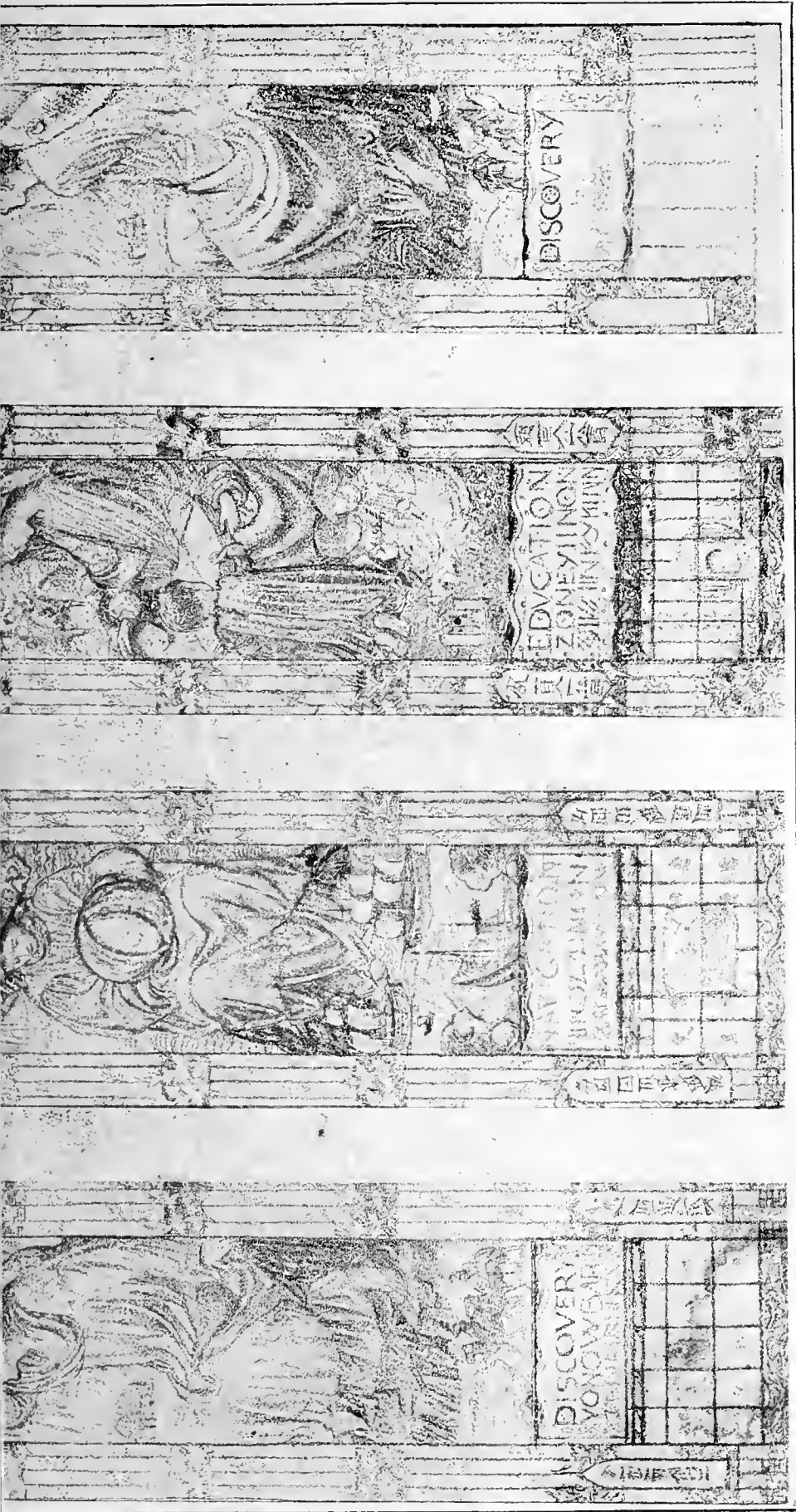
OBITUARY.

We regret to record the death last Wednesday morning at his residence in Cedars Road, Clapham Common, of Lieutenant-Colonel Sir Archibald Dawnay, at the age of seventy-six. Sir Archibald quite recently met with a slight accident while getting into his carriage, and his death was due to an embolism, probably caused by the mishap. Founder and Managing Director of the well-known firm of Archibald Dawnay and Sons, Ltd., of Steelworks Road, Battersea, and Cardiff, his whole life had been spent in the borough of Wandsworth, and his additional activities were many and constant. He was elected in 1906 to represent Clapham North Ward on the Wandsworth Borough Council, and two years later he was chosen as Mayor; and at the time of his death he was in his 11th successive year of office. On the eve of his re-election last November he lost his eldest son, Dr. A. H. Payan Dawnay, ophthalmic surgeon, of Harley Street. Early in the war Sir Archibald set himself to work on recruiting and in about two months raised a body of 1,600 men, 1,000 of whom went to form the 13th Battalion, East Surrey Regiment, and the remainder towards the formation of the 14th. This special effort of his was recognised by the War Office by the grant of permission for the 13th to wear the arms of the borough of Wandsworth as a distinctive badge, and his activity in war work generally was rewarded two years ago when he was knighted. Efficiency in rifle shooting for every youth was in his view a national necessity, and he was the donor of many cups and prizes to encourage it, as well as others for the encouragement of outdoor games and sports, of which he was a keen supporter. He was chairman of the local war savings committee, and, through his exertions, 7,000 allotments were provided for residents in the neighbourhood. The funeral service takes place at Clapham Parish Church to-day, and the interment will follow at Forest Hill Cemetery.

It was resolved, at a meeting of the town-people of Preston last Wednesday night, to make an appeal for £25,000 as a war memorial, £5,000 to be devoted to the erection of a monument in the centre of the market square, and the remainder to be used for the medical and surgical care of children.

THE BUILDING NEWS, APRIL 30, 1919.





STAINED-GLASS WINDOWS FOR THE PALACE OF PEACE AT THE HAGUE.

Designed by Mr. HENRY A. PAWSE, Royal Academy Exhibition, 1918.

GRAVILLE ABBEY.

By G. A. T. MIDDLETON, Hon. M.S.A.

The Abbey Church at Gravelle, midway between Havre and Harfleur, bears evident signs of great antiquity and numerous alterations. The present north transept, with its small semicircular-headed windows (now blocked up) entirely devoid of ornament, resembles in its workmanship the Saxon church of St. Lawrence at Bradford-on-Avon, known to be one of the earliest churches in England and dating back possibly to the sixth century A.D. Possibly this north transept, with its axis from N. to S., comprised the whole of the original church at Gravelle, except that a small semicircular apse, covered with a semi-dome, may have protruded on the east to serve as a chancel, of which there are obvious indications. There are signs, too, that the western wall of this transept was broken through for a doorway when Danish influence was paramount, possibly about 950 A.D.

A century later—about 1050 A.D.—the present cruciform plan seems to have been decided upon, the old church being left to form the north transept, a corresponding transept being built out to the south, and the tower at the crossing being carried up above the roof. The north aisle of the nave, and its arcade, appear to be of the same date, and also the western tower, which may originally have been intended to be one of a pair. The hatchet ornament on the tower arches at the crossing, and a good deal more of it in the upper part of the transepts, is of exceptional beauty and variety.

The next work undertaken appears to have been the completion of the crossing tower, and the addition of the south aisle of the nave, about 1130.

Probably during the reign of Richard I., and certainly before A.D. 1202, when his brother John was driven out of Normandy, the chancel must have been extended eastwards much in its present form and under English influence, for the windows are of the characteristically English "plate" tracery of that early Gothic period; though the foliage carving is just as characteristically French, showing the hart's-tongue fern with the tips of the leaves just opening out.

The monastery buildings, so far as they can be traced, bear indications of the same date and influence. The cloisters were in the usual position, open to south and west, and protected by the church from north and east, and the entrance to the Chapter House out of the eastern walk can be clearly recognised; but whether the Refectory stood, as usual, to the south, or whether its position was occupied, as it is now, by a terrace from which a view over the Seine could be enjoyed, is doubtful. Below this terrace, however, there is a large chamber having the extremely unusual feature of a Pointed barrel vault, which may either have been the Refectory or the Guest Hall. There has been a reader's lectern at one time corbelled out from the wall, and reached by a stairway from the cloisters above; and it is lighted by a row of narrow, and purely English, lancet windows, which may also have served as arrow slits; and its external door has been heavily barred and bolted. Adjoining it on the east, and raised one step above it, is a smaller chamber with exquisitely proportioned rib vaulting, very plain but very beautiful; and even the original drain from the monastery is to be recognised.

The only sign of the occupation of the Abbey by our Henry V., when he made it his headquarters during the siege of Harfleur in 1415, is to be found in some carving upon one of the nave shafts in the church, which is of approximately that date and obviously English workmanship.

Just outside the church to the north-west there is a finely proportioned "Flamboyant" cross erected towards the end of the fifteenth century to mark the burying place of Robert the Devil, father of the Conqueror.

The war memorial at Lancaster is to take the shape of a model village to be tenanted by some two hundred of Lancaster's disabled sailors and soldiers. Mr. T. H. Mawson is the architect.

COMPETITIONS.

CORPORATION OF GLASGOW HOUSING COMPETITION. EDINBURGH LAY-OUT AND HOUSING COMPETITION.—The Society of Architects, and the Competitions Committee of the Royal Institute of British Architects request members and licentiates of the Institute not to take part in the above competitions until a further announcement is made that the conditions have been brought into conformity with the R.I.B.A. regulations for architectural competitions.

DAILY EXPRESS MODEL HOMES COMPETITION.—In this competition the following are the names of the prize winners:—Professional Section, open to any architect or amateur.—"Class 1." Two blocks of four cottages for unskilled labourers, one facing north and one facing south.—1st prize, £200, Robt. J. McBeath, M.S.A., Birnam House, Sale, near Manchester. 2nd prize, £100, Walter Rosser, M.S.A., Ty Rholben, Abergavenny, Mon. 3rd prize, £50, Gatsley and Parsons, Arthur Gatsley, F. B. Parsons, Licentiate R.I.B.A., 105, Colmore Row, Birmingham.

"Class 2." Two blocks of four cottages for skilled artisans, one facing north and one facing south.—1st prize, £200, Harold E. Moss, A.R.I.B.A., Tisbury, Lime Grove, New Malden, Surrey. 2nd prize, £100, Alex. T. Scott, 5, Rookfield Close, Muswell Hill, N. 3rd prize, £50, H. Townsend Morgan, C. Cowles-Voysey, A.R.I.B.A., 88, Gower Street, W.C.1. "Class 3." Two blocks of semi-detached houses for clerical workers, one facing north and one facing south.—1st prize, £200, Leopold E. Cole, A.R.I.B.A., Rutland Chambers, Newmarket. 2nd prize, £100, Frank Birch (architect), 20, Victoria Road, Fallings Park, Wolverhampton. 3rd prize, £50, Ralph H. Byrne, M.R.I.A.I., T. George-Smith, 20, Suffolk Street, Dublin.

Amateur Section, open to amateurs only.—"Class A." Cottage for unskilled labourer.—1st prize, £100, E. Phillips, 21, Birwash Road, Plumstead, S.E.18. 2nd prize, £50, A. J. Smith, Rosedene, Minster, Thanet, Kent. 3rd prize, £25, Lt. F. T. Bastable, 17, Corringham Road, Golders Green, N.W.4. "Class B." Cottage for skilled artisan.—1st prize, £100, W. I. Reed, 27, St. Mark's Crescent, Regent's Park, N.W.1. 2nd prize, £50, Capt. Butcher, R.E., 41, Approach Road, Victoria Park, E.2. 3rd prize, £25, Private Horace L. Massey, N.Z.E.F., 35, Bedford Square, W.C.1.

"Class C." Houses for clerical workers.—1st prize, £100, W. Vaughan, 32, Braemar Avenue, Wood Green, N.W. 2nd prize, £50, Mrs. Amy Cross, 59, Albany Mansions, Albert Bridge, S.W. 3rd prize, £25, Wallace McWade, 4, The Studios, Campden Street, N.W.

Our contemporary informs us that, "in the opinion of Mr. Henry T. Hare, President of the R.I.B.A., the plans marked a distinct advance on those submitted in any previous competition of the kind."

It is proposed to build a public hall or institute at Eye as the town's war memorial.

The Radnorshire county war memorial will be the rebuilding of the hospital at Ilandrindod Wells.

The council chamber of Marylebone's new town hall is to be furnished at a cost of £3,000.

Messrs. Marshall, Sons, and Co., Ltd., have purchased a site at Gainsborough for the extension of their works.

Mr. David W. Glass, of Ardrossan, has been appointed architect and surveyor for the Central Stirlingshire housing scheme.

Stirling Town Council, after some years' experience of contracting, have returned to municipal carting for their cleansing department.

The Exeter Mental Hospital Committee recommends the corporation to apply for permission to borrow £9,500 for structural work at Digby's Asylum.

Lieut. Jas. Hembrow, R.E., A.R.I.B.A., town planning assistant to Mr. Cutlibert Brown, Engineer and Surveyor to the Edmonton Urban District Council, has been appointed an inspector under the Local Government Board Town Planning Department for No. 8 District, viz., Hampshire, Kent, etc.

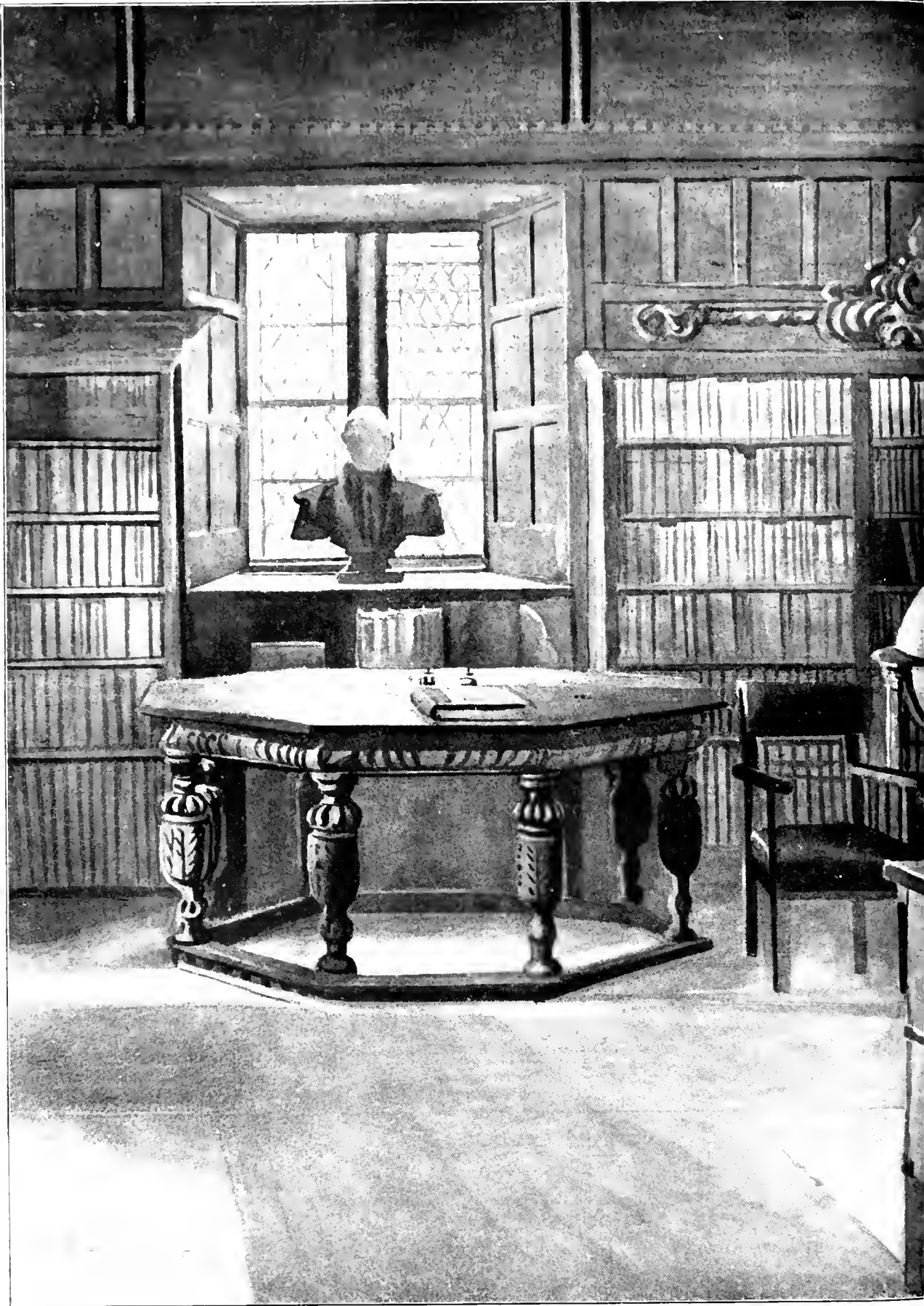
PROFESSIONAL AND TRADE SOCIETIES.

ASSOCIATION OF TRANSVAAL ARCHITECTS.—The ninth annual report, for 1918-19, of this vigorous South African society was presented at the annual meeting on February 22 last. There are now 147 members on the roll, the deaths during the year having been numerous. Eighty-two are registered as practising architects, 32 on salaried employment, 17 are on active service, 3 are absentee members, and 13 absent, with no known addresses. The Association is still working for an Architects' Act, to include all the provinces and give statutory incorporation to an Institute of South African architects, consisting of a Federation of the Provincial Institutes, and vested with legally defined powers. Many matters of local interest have been dealt with. The balance-sheet shows an excellent financial position, and the Benevolent Trust Fund satisfactorily reflects the generous help of members and others to relieve the necessities of their less fortunate brethren. The president of the Association is Mr. M. J. Harris, M.S.A., the Vice-Presidents are Messrs. D. M. Barton, M.S.A., and D. M. Sinclair, M.S.A.; and the Council Messrs. J. S. Bowie, N. T. Cowin, J. S. Donaldson, M.S.A., T. Gordon Ellis, A.R.I.B.A., F. L. H. Fleming, R. Howden, A.R.V.I.A., M.S.A., D. A. McCubbin, Licentiate R.I.B.A., E. M. Powers, A.R.I.B.A., and H. G. Veale, M.S.A.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—A conference will be held in the Galleries of the Royal Institute on Tuesday, May 20, 1919, commencing at 10.30 a.m. Chairman, Mr. Henry T. Hare, president of the Royal Institute. A series of short papers to be read in the morning will be followed by a discussion in the afternoon. All interested in the reconstruction of this important industry are invited to be present. Admission free by ticket, to be obtained from E. Guy Dawber, hon. secretary, R.I.B.A., 9, Conduit Street, W.1.

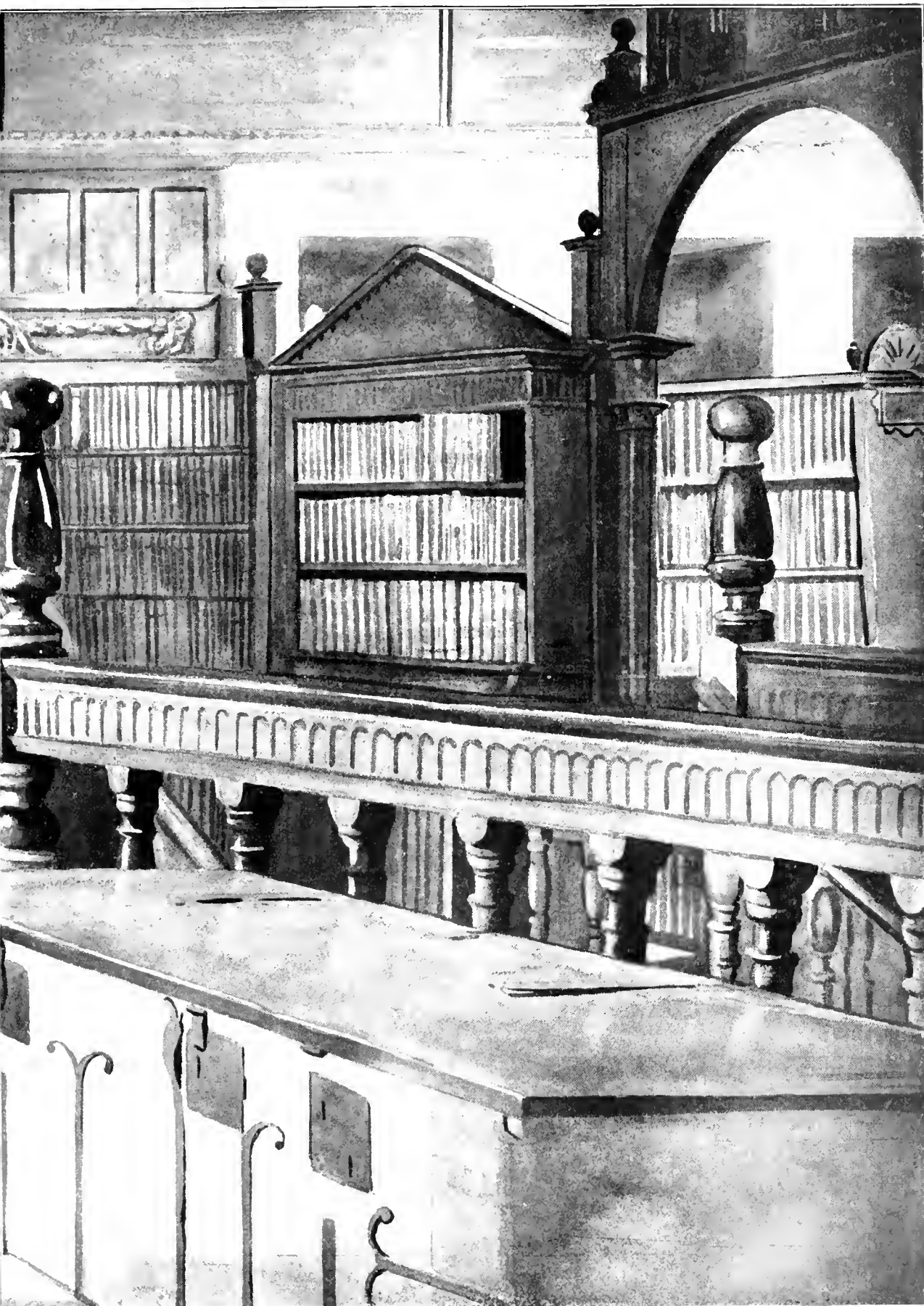
ROYAL SCOTTISH ACADEMY.—In the ninety-third exhibition of the Royal Scottish Academy opened on Saturday, April 26, there is, in the architectural rooms, a large collection of drawings and photographs illustrating the housing problem. Four large groups of drawings show what has been executed at Gretna by Mr. Raymond Unwin, assisted by various other architects; at Rosyth by Mr. Mottram and Messrs. Greig and Fairbairn; at Woolwich and Roe Green by Sir Frank Baines, of H.M. Office of Works, London; and at Gourcock, Thackerston and Glengarnock by the architects for the Local Government Board in Scotland. There are also drawings submitted by the Local Housing Competition organised by the Local Government Board, which include tenements. In addition, there are many architectural works of merit. The sculpture section, which represents this year almost entirely the work of Scottish sculptors, is of particular interest.

ROYAL VICTORIAN INSTITUTE OF ARCHITECTS.—The following resolution was unanimously carried on March 4, at the annual meeting of the Royal Victorian Institute of Architects, Melbourne, on the motion of Mr. William Lucas, F.R.G.S. (who was an early member of our Designing Club), seconded by Mr. R. H. Alsop, Director of the Architectural Atelier of the University of Melbourne:—"The Royal Victorian Institute of Architects, assembled in annual meeting, tenders warmest congratulations to Sir Aston Webb on his election to the Presidency of the Royal Academy. This institute, being founded in 1871, just two years prior to Sir Aston's entering upon practice, its succession of members has followed his strenuous career with unusual interest. Possessing in exceptional degree love of intercourse with brother professionals, linked with passionate fondness for work with and for young men, in the affairs of the Architectural Association, Royal Institute of British Architects, Board of Architectural Education, Architects' Benevolent Society, and Artists' General Benevolent Society, there have been such aptitude and devotion as to make each institution a permanent debtor. Moreover, as representative of Architecture



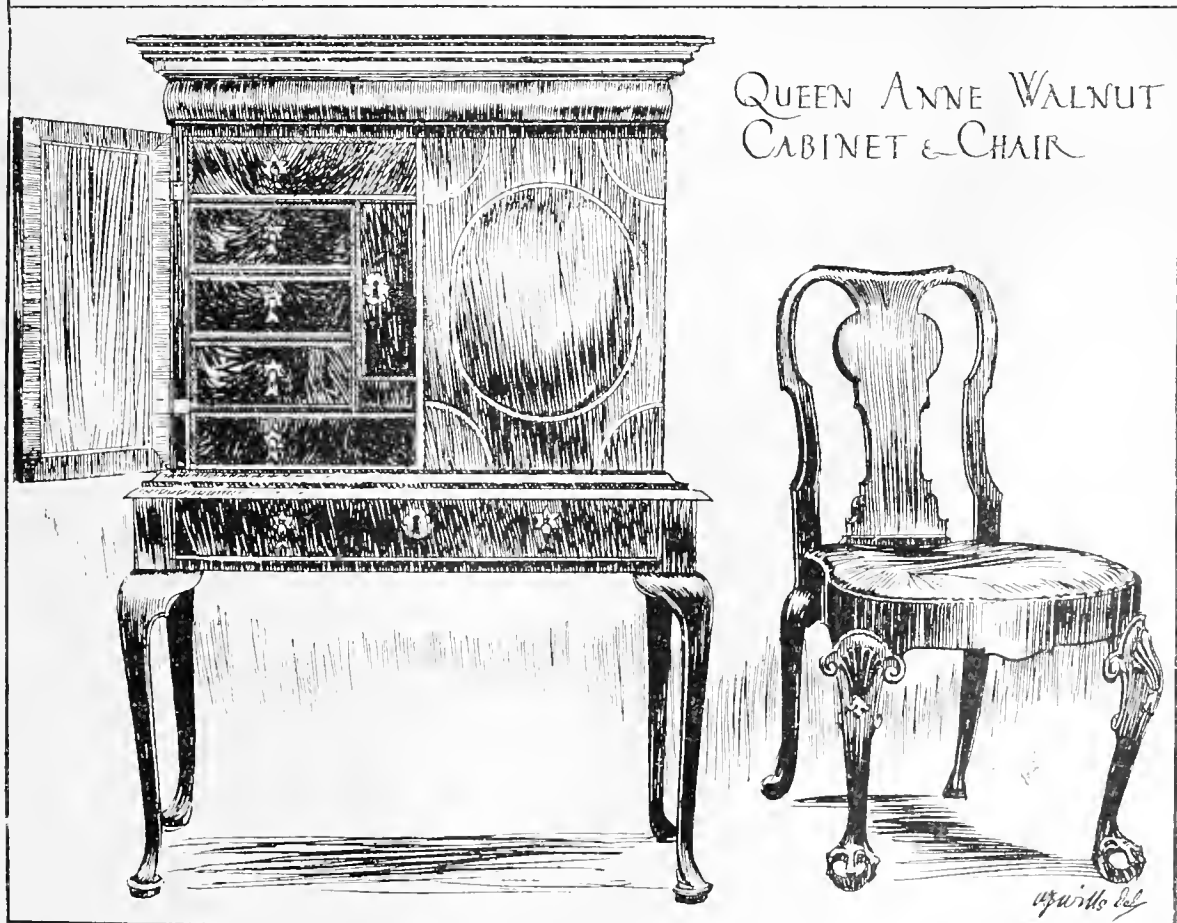
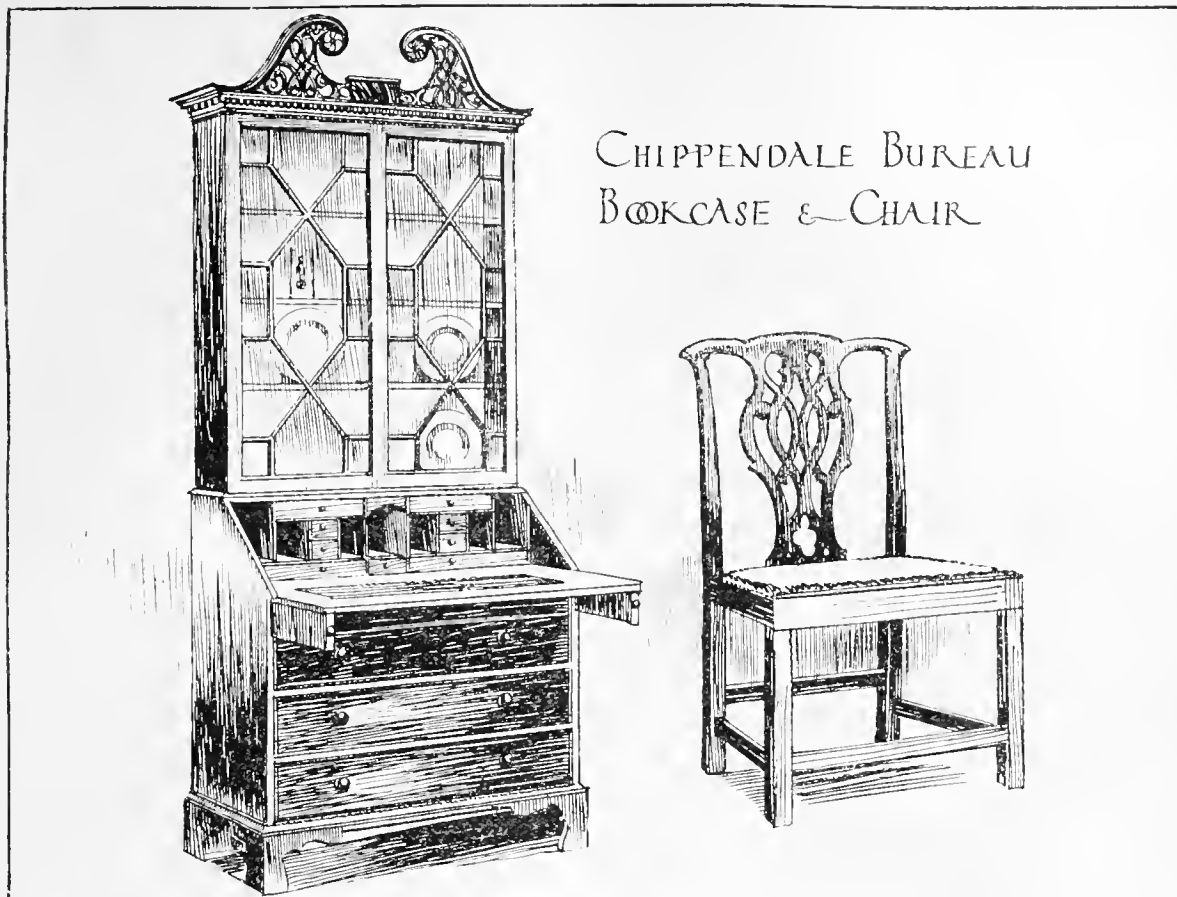
THE LIBRARY. M
From a Water-colour Drawing by

APRIL 30, 1919.



COLLEGE, OXFORD.
BY S. S. TYRWHITT, M.A., R.B.A.





A SHEET OF OLD ENGLISH FURNITURE SKETCHES.

at London University, auditor of the Royal Academy and supervisor of the work of its Architectural School, trustee of Sir John Soane's Museum, and member of the London Society, his rare qualifications were to excellent purpose. In matters of practice, the expression of earlier years (mainly in Worcestershire), allied with that of middle life in the successful competitive work in conjunction with Mr. Ingress Bell, as seen in Birmingham Law Courts, Victoria and Albert Museum, Christ's Hospital Schools, and Metropolitan Life Association Offices, as well as in the restoration of St. Bartholomew's Church; and followed by the Naval College, Dartmouth, Royal College of Science, South Kensington (each entrusted directly to him), the Queen Victoria Memorial, and Birmingham University—further competitive achievements (the latter in alliance with his friend Mr. Ingress Bell, as was also some collegiate work at Cambridge), the Law Courts at Hong Kong, and the Royal College of Science, Dublin (in partnership with Mr. F. M. Deane)—most of these works being of the first magnitude—convince us that no one has more worthily promoted our common objects, viz., the advancement, protection and elevation of Architecture, and the cultivation of friendly intercourse between the members of the profession. That after a century and a-half of its history, the Royal Academy at the inauguration of the new era of peace should have in its chair as President a practitioner of the mother of the arts, we thankfully recognise as the year's event in the world of British art." Owing to the pressure of business, Mr. Lucas, in moving the resolution, stated he would omit what he had prepared in support thereof. Those sentences were:—"That, as one of the few surviving members of the earlier Institute, and now almost alone of those still in active touch with the present; and, moreover, a member of the first Council since the receipt of the Royal Charter and incorporation, the occasion gave him peculiar pleasure. He had kept in touch with what had been illustrated of Sir Aston's work, and on visits to England had seen much of that carried out from his designs, which, in his opinion, was specially strong in the direction of plan, and essentially so in expressing the main point in a problem and emphasising the placing of frontage lines. One of his earliest works, a warehouse in Shoreditch, so arrested the speaker that a Melbourne building of the eighties bears its influence. Every ready to recognise his indebtedness to others, and with keenest desire to communicate of the stores of experience, Sir Aston's addresses, perhaps mainly that on 'Planning,' prepared when up to the eyes in work, and given in 1893 at the opening meeting of the School of Design of the Architectural Association, which Mr. Lucas deemed a classic, had enriched many professional lives; and he wished that it were possible for it, and two unsuccessful competitive designs in which were displayed dramatic force of plan and striving for the grand manner—both of earlier years—to be in the hands of every student. From one who had worked with Sir Aston on a committee, and from another who did his perspectives, he had heard much of peculiar interest, all tending to increase admiration for his character. A Londoner, born sixty-nine years ago, the paper read by him a few months ago on the London Society's proposals for the improvement of London showed that his exceptional vigour was by no means abated; and with the conferring of the highest possible honour upon him as an architect, there is every promise of further weighty achievement."

THE REBUILDING OF LOUVAIN.—The Association of Architects of Louvain is organising in August–September an exhibition of building material from the allied countries. Manufacturers, dealers in materials, and so on, who wish to partake in it should communicate with the secretary, Mme. de Tirlemont, 48, Louvain. Further particulars will be given on application.

Newtown, Montgomeryshire, expects to be the first Welsh town to begin its housing scheme, and as the wish has been expressed that a Royal spade should cut the first sod, it is believed that either the King or the Prince of Wales will perform this ceremony.

Our Office Table.

The United States Commercial Attaché at Copenhagen has informed the Department of Commerce at Washington that a Norwegian firm is building a lumber raft to be towed across the North Sea to England. The raft is being built in Kommelvik, Norway, and is considerably larger than the Refanot, the 2,100 standard timber raft which was towed from Finland to Copenhagen. It would take over 5,000 tons of shipping to carry the amount of lumber which will be made into this raft. It is the intention to build several of these rafts for British account, under the leadership of Captain Gardiner, of the Gardiner Shipbuilding Company, according to a new system approved by the British Government.

The town-planning scheme, which will be laid before the Manchester City Council next Wednesday contemplates a great change in the southern area of the city and the adjacent district. The scheme deals with 5,300 acres and affects the districts of Burnage, Withington, Didsbury, Chorlton-cum-Hardy, Moss Side, Lovenshulme, Clayton, Bradford, and Gorton. Three new roads are to be made varying from 42 to 100 feet in width. When the approval of the city council has been obtained the committee will convene a meeting of landowners whose land is affected by the proposal. Then the sanction of the Local Government Board will be sought for the borrowing of the necessary money. No one knows as yet what the cost will be, but it is expected not to be far short of a million sterling. Part of this, it is expected, will come back as the land develops. The conferences with neighbouring local authorities, which began a few weeks ago, will be continued for some time.

A new system of charging for the supply of gas is suggested in a report on gas standards made to the Board of Trade by the Fuel Research Board, which is published by H.M. Stationery Office (Cd. 108, price 1d.). Under this system it is proposed that the consumer should be charged for the actual thermal units supplied to him in the gas which passes through his meter, these thermal units to be calculated by multiplying the number of cubic feet registered on the meter by the calorific value per cubic foot. The gas undertaking has to declare the calorific value of the gas it intends to deliver, and to undertake to adjust the consumer's appliances for the ordinary purposes of domestic lighting, heating, and cooking, so that the gas delivered can be burned in these appliances with safety and efficiency. Though it is proposed that each gas undertaking shall be free to fix the calorific value which suits it best, it is desirable, adds the report, that before any legislation is undertaken representatives of consumers, producers, and the makers of fittings and burners should jointly decide on the standardisation of burners in appliances for a limited number of calorific values.

The coming activity in the Building Trade will in all probability demonstrate the comparative scarcity of skilled craftsmen in all branches of building. In 1914 the building trade was slowly recovering from a period of depression, and little civil work has been carried out during war time. The training of apprentices has therefore been practically suspended, and there should in the near future be excellent prospects for those possessing the necessary qualifications in all departments of building. The Northern Polytechnic Building School provides courses of training for lads over 16 wishing to qualify as architects, surveyors, builders and decorators. Every opportunity is given students of acquiring a practical knowledge of the crafts in addition to a sound theoretical training. The studios, laboratories and workshops provide every facility for the study of Building in all its modern developments.

The inaugural exhibition of the new group of West of Scotland artists, the Glasgow Society of Painters and Sculptors, will be held in May in the McLellan Galleries.

Varnishing Day has been fixed for the 8th, and the exhibition will be open to the public on May 9 for the ensuing three weeks. Composed entirely of professional painters and sculptors, the Society aims at holding exhibitions of a high standard in which the individuality of the younger artists may find ready expression. The membership, numbering over thirty, includes several women artists. Sculpture will be well represented in the forthcoming show as well as portraits, landscapes, water-colours, and pastels.

The date of the Prince of Wales's initiation into Freemasonry has been fixed for May 2, and it will take place at Prince's Restaurant in the evening. The Lodge into which the Prince will be received as a member is the Household Brigade Lodge, which is confined to the Household Cavalry and the Foot Guards. Though not among the oldest, it is one of the most distinguished lodges on the roll of English freemasons, and includes in its membership many military officers of the highest ranks. The meeting on May 2 will be an emergency meeting for the special purpose of the initiation of the Prince of Wales. The Duke of Connaught, Grand Master of Freemasonry, will be present, and is likely to take some prominent part in the ceremony.

The last weekly report issued by the Local Government Board upon progress in the promotion of State-aided housing schemes states that the first reports of the Commissioners to the Local Government Board show a total of about 150 schemes so submitted. Including the 150 schemes submitted locally to be site schemes, the total number of site schemes notified to the Local Government Board during the week, centrally and locally, was 179, making with the schemes previously submitted a total of over 900. Outstanding schemes from the point of view of size are—Norwich, nearly 400 acres; Gelligaer Urban District, 120 acres; Birkenhead, 109 acres; Oldbury Urban District, 106 acres; and Luton, 89 acres. Site schemes approved during the week numbered forty-seven, promoted by twenty-six local authorities, bringing the total number of sites approved to 307, representing 6,183 acres. Among the largest schemes approved were those of Leeds, 200 acres; Gelligaer Urban District, 120 acres; Salford, 70 acres; Scarborough, 67 acres; Willesden, 63 acres; and Aitcham Rural District, 45 acres. During the week ten local authorities submitted thirteen layout schemes, bringing the total layout-out schemes to 187. Twelve schemes were approved, bringing the total to seventy-one. Six local authorities submitted eight house-plan schemes, comprising 254 houses, bringing the total number of such schemes submitted to the Board to 141. One scheme, however, was rejected because the proposed site was not satisfactory, and another scheme was modified to avoid undue crowding of houses on the site. These two alterations meant a reduction of 315 houses and leave the net total of house-plan schemes submitted at 140, comprising 8,748 houses. Twelve schemes for house plans promoted by eight local authorities were approved during the week, representing 1,046 houses. This brings the total number of house-plan schemes approved to sixty-seven, representing 3,435 houses. Among them were three schemes from Sheffield, comprising 653 houses.

The new plan for cottages in a Bedfordshire Village, it was complained at the local council meeting, gave more opportunities for neighbours quarrelling.

At a meeting of the Women's Memorial Hostel Committee at Wakefield House, Mr. Thomas Brammel Daniel, Lic.R.I.B.A., "Ventnor," Chislehurst, was appointed architect for the Sailors' Rest and Boys' Hostel for the Port of London as a memorial from the women of the Empire to the men of both sea services who have fallen in the war.

As a memorial to his son, who fell in the war, Mr. Gwilym C. James, J.P., chairman of Crickhowell Rural District Council, has purchased for presentation to the town the ruined Castle of Crickhowell and grounds. Of the original Norman building only the tower remains. The castle was inhabited in the fifteenth century by Sir Charles Somerset, K.G., and descended to the Duke of Beaufort.

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AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

Imperial New Delhi. The Government House and Secretariat Building. The Government House.

Strand, W.C.2

north façade; the processional way and great stairs; the Secretariat and the ground plan of the Government House. Sir Edwin L. Lutyens, A.R.A., and Mr. Herbert Baker, F.R.I.B.A., Architects.
Entrance Front of a Country House, Jouy-en-Josas, France. Mr. Ernest Newton, R.A., Architect.

Currente Calamo.

The case against the Housing Bill which the London County Council, in junction with the Metropolitan members of Parliament, have put before Dr. Addison and the Local Government Board, is manifestly an unanswerable one. The Housing Bill now before Parliament is a special measure rendered necessary by Mr. Lloyd George's Finance Act of 1909 and 1910, and by the stoppage of all building due to the war—or rather by the in great part unnecessary and unwise suspension of building while it lasted. The State undertook to bear the greatest part of the cost of making up the terrible leeway thus caused; but as things stand to-day while the rest of the country is to get this State aid if the Bill is carried in its present form, London may receive no State aid whatever. Last year the Local Government Board proposed that 75 per cent. of any deficit in housing expenditure should be borne by the State, the remaining 25 per cent. being defrayed by the local authorities. Accepting this proposal, the London County Council tentatively decided to spend £500,000 a year for seven years, basing their estimate upon the amount of labour and material which they believed would be procurable. Many provincial local authorities objected to providing 25 per cent. of the deficit, and the Board have now agreed to bear all the annual loss upon houses built within the next two years (or possibly a longer period) above the amount realised by a special penny rate. Now, London would have to build 15,845 houses and spend seven millions in doing so within the next two years, before it incurred an annual deficit over and above the proceeds of the penny rate, and could claim State aid. The houses *cannot* be built in two years, and London will get nothing from the State, while London, which pays a fifth of the national taxes, will be contributing £44,000 a year towards Manchester deficit alone. Dr. Addison's suggestion in the debate on the second reading of the Bill, to the effect that London grudged a penny rate for house-building, was ridiculously unfair and entirely untrue. To get State aid as now proposed London would have to spend no less than twenty-eight millions, an unnecessary and inequitable amount. London has done more for good housing than all the rest of

England put together, and all she asks now is that she shall not be left out in the cold, while the pockets of her taxpayers are taxed to the extent of one-fifth of the housing deficit of every other town or rural district in the country. Dr. Addison promised last Wednesday "to consider any adjustment necessary to the special circumstances of London." It should not need much consideration to avoid an impasse of the sort which is otherwise inevitable.

There is to be a Select Committee to consider the present position of the Land Values Duties. So far, so Mr. Austen Chamberlain told the House of Commons in his Budget speech last Wednesday, he and the Prime Minister are agreed. Our present feeling—remembering Mr. Lloyd George's persistent past determination to prevent the reversal of his blundering finance of 1909-10—is that those amongst us will be blessed who expect little! A few more by-elections like those of the past month or so, and we shall probably be in the throes of another general election, and things thereafter are on the knees of the gods. It is fair to Mr. Chamberlain to remember that his past record on this matter is straight, and his utterances on Wednesday last were statesmanlike. As he said, from the first the Revenue yield of these duties has been disappointing, but that is not all, and it is not the worst. For one reason and another, in consequence in part perhaps of the original character of the taxes, in part to the inherent difficulties of attempting at one and the same moment to carry out all over the country a new and unparalleled valuation and simultaneously to raise revenue upon it, and in part, and in no small part, owing to decisions of the Courts, the tax by now has become unworkable. In certain cases duty is declared to be leviable in circumstances in which Parliament never intended to exact it, and in which admittedly it would be unfair and contrary to the public interest to levy it. In other cases the taxes, owing to other decisions, cannot be levied, nor can even a valuation be made upon which any tax can be levied. The result is not merely that the taxes in their present form are unworkable, but that the uncertainty as to the future which they have aroused is still paralysing the second great group of industries in the country, and will do more than most other blunders to shipwreck the Housing Act. We

hope the Select Committee will get to work speedily, and that its Report will soon after influence wholesome legislation, and that Mr. Lloyd George may have nothing to do therewith!

In his plausible letter which Sir Robert Horne, the Minister of Labour, read to the Provisional Joint Committee of the National Industrial Conference at Montagu House last Thursday, Mr. Lloyd George told his correspondents that in regard to unemployment, he understood that the Committee was unable to make any definite recommendation as to how the present provision against unemployment should be extended, though they were unanimous in thinking extension necessary. In view of the short time at their disposal he did not think that the Committee could be blamed for this, but the question of unemployment is one of the most urgent and important of the problems confronting us, and until it is satisfactorily solved he did not feel that we should have really effected one of the most vital improvements in our social conditions. He therefore hoped that this is the first question to which the National Industrial Council will address itself. We hope so too! The same day the directors of the National Smelting Company, who have partly completed extensive buildings containing furnaces and other equipment at Avonmouth, issued a statement expressing regret that it was necessary to give notice to their workmen to finish work at the week-end. They say they have no alternative, in view of the increase of the cost of materials and wages by over 100 per cent. since the buildings were started, making it impossible to construct economic plant capable of producing metal in competition with foreign producers. Before very long paragraphs to the same effect will be found daily in every newspaper. Then, perhaps, the unemployed will realise that all the legislation this or any other Parliament may be coerced into passing cannot make ten shillings worth a sovereign, or compel buyers to pay double prices for things that can be bought elsewhere at normal rates.

The old Law of Landlord and Tenant is assuredly getting shaken to pieces by our war-time legislation and by the new spirit with which this is being construed in the Courts. The Distress for Rent Act, 1737, a statute of George II., is still

in force, under which a landlord can claim double rent from a tenant who has given notice to quit, and will not go when this expires. In the recent case of "Flannagan v. Shaw" the plaintiff as landlord sued the defendant as tenant for such double rent, and the defence was that, under the Increase of Rent Act, 1915, no increased rent could be recovered. It was a very pretty problem for the county court judge to harmonise these two statutes of 182 years apart. Yet, in law and logic, he felt bound to back the Act of 1737, and so gave judgment for the plaintiff. On appeal to the High Court the problem became more acute. There was no doubt about the meaning of the old Act: it was painfully plain in the landlord's favour. Horridge, J., however, rose to the occasion. As he said, the Act of 1915 primarily applied where a landlord increased the rent, but it made any increase irrecoverable. So although the Act of 1737 really imposed this double rent as a penalty, it was still an increase within the Act of 1915 which could not be recovered! Bailhache, J., while admitting that he would have come to the opposite conclusion, gave way, and the appeal was allowed and judgment given for defendant with costs. We may yet hear what the Court of Appeal, as lawyers, think of this politic ruling. But, any way, the case is valuable as showing the need for reducing our Land Laws to some sort of common sense, clearness, and coherence as soon as possible.

The Surveyor to the Hemsworth Rural District Council in the West Riding of Yorkshire is surely in luck's way, thanks to the national housing scheme which Dr. Addison, President of the Board of Agriculture, is pushing forward for all it is worth. He is employed by the Rural District Council on terms which, according to the *Estates Gazette*, provide for the payment to him of 6 per cent. on the cost of the building schemes he is called on to supervise, an arrangement made three years ago, before wholesale housing came into fashion. At present Hemsworth has in hand the building of 3,200 houses, and these, averaged at £400 each, will cost the Council the nice little sum total of £1,280,000, and the fortunate surveyor is therefore entitled to commission in respect of them amounting to £76,800! No doubt the whole of the houses may not be completed this year or next; but, even if payment be spread over five years, it would give a fine fat annual income for a rural surveyor. Curiously enough, the surveyor is understood to be only putting forward a claim for the small and modest total in respect of the houses of a round £15,000. It would be interesting to have the correct calculation, presuming that both the surveyor and our contemporary have fallen into arithmetical error. But, however it works out, the prospect before the former is assuredly an inviting one.

The old squabble about the position of King Edward's statue at Liverpool is to

be revived to-day, when the Finance Committee are to ask the City Council to authorise the erection of the King Edward statue "in a central position on the terrace in front of the south entrance to St. George's Hall." What precisely does this mean? More "expert" opinion and more wrangling, doubtless. There are not a few who begin to wonder whether the statue will ever be erected at all, and what the next peg will be to pin the rags of camouflaged partisan warfare to in Liverpool!

ARCHITECTURE AT THE ROYAL ACADEMY.

This year Sir Edwin Lutyens dominates the exhibition by the handsome series of Mr. Walcot's drawings illustrating the great undertaking now being carried out at Delhi, and in this connection are grouped the exhibits of his coadjutor-architect, Mr. Herbert Baker. Over-topping everything else in this section of the exhibition is Sir Edwin's War Memorial Church to be built at Basildon, in Berkshire, a colossal brick building almost entirely devoid of masonry, with an enormously lofty square tower, represented by a big coloured model placed in the centre of the room and set in a line with the middle of the entry to the gallery. This design last year formed its architect's sole exhibit, and the perspective then shown was reproduced in our issue of May 8, 1918. The un-English plan and scale of this village church impart to the building a freshness which is quite unique. The remarkable dimensions gain undoubtedly by the myriad joints of its bald brickwork. If wide mortar unstruck joints, of late so much the vogue, are employed, and as thin red bricks are used, the cost of repointing in course of years will inevitably add to the expense of upkeep, necessitating scaffolding. The three diminutive portals in stone increase the effect of apparent height to the main fabric, though their foreign look and small detail suggest some incoherency.

We give elsewhere to-day an extract from the official description issued by the Government of the new buildings at Delhi. These include the Government House and the Secretariat illustrated. These water-colours are admirably consistent with the adroit adaptations of Indian architecture realised in a monumental fashion after conforming to historic precedent, and contrived to serve present-day requirements. A remarkable departure has been made for the first time in the evolution of these Indian public buildings, owing to the omission of the surrounding verandah hitherto used to the detriment of broad architectural effect. The anticipated co-ordination of European Classic, contemplated when the rebuilding of Delhi was first decided on, has thus been avoided.

Fewer photographs are shown this season than last summer. Some of those exhibited to-day are placed too high to be seen properly, particularly when four or five small prints are arranged in one frame. There are some exceptions, such as the handsome photographs hung on the line in illustration of the entrance hall and other parts of the interior of the Royal Victoria and Albert Museum, by the President, Sir Aston Webb, who is also represented by the Leys School, Cambridge, including the Memorial Hall as its central feature, while the King's Building* occupied by classrooms is on the

* Illustrated in *The Building News* May 8th, 1918, and May 1st, 1914, both pictures from the Academy.

right, and the Boarding House, with big day rooms, will be built on the left. This excellent geometrical drawing is by Mr. Maurice Webb, showing its scheme to advantage. No. 1391, adjoining, shows additions to a Greenwich Mill, by the same architects, with a picturesque tower at the termination of the new wing. Sir Aston Webb is most successful perhaps with a pleasing pair of cottage groups in Sussex (1393). The lower quadrangle is square, set diagonally, laid out in line with a higher semi-quad of richer Tudor-like dwellings, the open space between being devoted to bowling-greens set off by pretty bays and gables. Sir Reginald Blomfield contributes four autograph drawings. The chief subject is the British Military Cemetery, St. Sever, Rouen (1409) with a chapel and memorial stone cleverly disposed. The style chosen is Late French Renaissance handled in a severe manner. His obelisk war memorial at Glossop, Derbyshire (1383) has a series of bronze plaques suspended on each face, and cannon-balls introduced below in the capping to the pedestal over caryatid figures of females wearing casques at the four corners, and terminating in feather lopes, on the base which rises on a circular platform in the market place. No. 1400 shows Sir Reginald's scheme for the Devon Heroes' monument, proposed for the Northenham site, under the city walls, at Exeter. Four recumbent lions face the segmental steps leading to the square-teraced enclosure, in the centre being a figure of "Peace" supporting a fallen soldier. The whole is situated in a semi-circular grass plot, but no attempt is made to record the Roll of Honour. The fourth contribution by Sir Reginald is a projected refronting of Penn House, erected in the commonplace style of Early Victoria villadom (1379) and now to be transformed into a red-brick modernised severe Georgian structure, with a flat roof. The entry is set off by a stone clock-turret above a Classic portal façade. The middle bay, which marks a lack of symmetrical disposition in the main front, suffers badly from the faulty perspective of the architect's drawing. Hard by, also on the line, Mr. Ernest Newton, R.A., is well represented by an excellent drawing of a new house at Jouy-en-Josas, France, and of which we give a double-page reproduction. Sir Thomas Jackson is not among this year's contributors, but Sir Ernest George, R.A., in conjunction with Mr. A. B. Yeates shows a pedestal war memorial for the Duke of Portland on an open site at Berridale, Caithness (1339), and also a Bungalow at Nairobi, East Africa (1445). In the Water-colour Gallery Sir Ernest exhibits another washed drawing of an upstanding group of odd old buildings at Taormina, in the forefront of Mount Etna (813).

Mr. Gilbert Scott, A.R.A., is to be congratulated on the Washington Street view of Liverpool Cathedral (1396) handled in browns, yellows, and blues, set off by a high light, almost white, in the sky where there is arranged an heraldic device with a plan of the church, and ribbons, as a foil to the massively designed tower, which is in scale with the transept, all being broadly set. The smaller churches at Derby Lane, Liverpool (1440), Sheringham, Norfolk (1441) and Northfleet Church, Kent (1442) are further examples of this architect's genius. There are about a dozen war memorials in this gallery, including those already named. Among the rest is a big pleasant scheme, termed a "Garden of Sleep" (1313), by Mr. William Warman for a battle-field cemetery adroitly laid out with severe architectural embellishments; and Captain Neville Smith has a somewhat

grandiose composition hung on the line showing "an Imperial Museum" and a Monument of Records of the Great War (1319). The façade is florid in sculpture, and the plan is elaborated with segmental-fronted end pavilions, the central feature above the pedimented portico being a fine cupola crowning the fanciful balustraded skyline. On the same wall is Messrs. J. W. Simpson and Ayrton's stately elevation with partial plans of the Crown Agents' Government Offices for the Colonies at Millbank (1332), one of the most palatial and satisfactory additions lately made to the architecture of the Metropolis. Mr. Edwin Cooper is not so well placed on this side of the gallery as the last-named work. His Banque Belge pour L'Étranger in Bishopsgate (1470) deserved a position on the line. The subject is smaller, but the handling is dignified, with a boldly-designed elevation, having a range of seven second-floor windows pedimented in good order, the third floor distinguished by square fenestration with circular niches between, furnished with busts. The roof dormers rise pleasantly above the attic wall over the severe cornice, the whole frontispiece being of masonry. A large perspective of a group of buildings by Messrs. Percy Adams and Holden hangs below Mr. Cooper's City commercial premises, and illustrates the new Westminster Hospital proposed to be carried out at Clapham Common with squarely-arranged brick pavilions on economic lines connected by stone open colonnades. The intermediate and end pavilions have the usual semi-octagonal open balconies handsomely managed in masonry, the whole being efficiently done, though we can but regret the demolition of the old Georgian houses now on the site, as illustrated in our issue of March 12 last. Mr. John Murray (in 1472) illustrates on a big scale his enormous blocks of suggested premises in the Strand for "the improvement of Central London."

Mr. H. T. Hare, the president, and Mr. Guy Dawber, the secretary, of the R.I.B.A., are content with photographs, and all of typical work, save one drawing by the former of a Classic little memorial building at the end of a public garden in Oxford (1466) shown by a water-colour. Another memorial is the Crucifix War Shrine at St. Bartholomew the Great (1436) by Sir Aston Webb, and also the elaborate memorial shown by a photograph (1358) to Sir Julius Wernher by Messrs. Romaine Walker and Jenkins. Near the last is the Bevan Memorial at Hammer-smith by Mr. Maurice B. Adams (1367), who also shows his Parish Church, North War Memorial Screens at Hammer-smith by a pen and coloured drawing (1323). The latter hangs next to a pretty village church well designed by Mr. Ryan Tenison, for Shenley, Herts (1322). The War Memorial Cross at Hershaw, by Messrs. Niven and Wigglesworth, has an admirable setting (1372), and as a like success ranks Mr. Vernon Compton's memorial to Sir George Pilkington (1418). Australia House, Strand, by Messrs. Marshall Mackenzie and Son, is represented satisfactorily by interior photographs, and Huntercombe Place, Oxon, is also fortunately photographed in No. 1331 by Mr. Oswald P. Milne. The Mausoleum for Newton Hall, Cambridge, is the work of Messrs. Poynter and Wenyon (1344), and Mr. Philip Tilden's three personal drawings of a London House, a big scheme for Paddington Station reconstruction; also the rebuilding of Easton Lodge for Lord Warwick, well deserve their positions. Mr. Walter Tapper's Church for Whiteley Homes (1403 and 6) is admirable in design and charmingly drawn. Messrs. Willink and Thickness, with Mewis and Davis, exhibit a façade of the

Cunard offices, the former firm's name being omitted on the picture (1376). Mr. Frank Verity has three large jobs on view, including the "New Gallery Kinema," Regent Street, a theatre in Charing Cross Road, and a hotel near Hyde Park Corner. Mr. W. D. Carøe shows Allington Castle, Kent, a work of reconstruction (1321), and a florid big town parish church at St. Helens (1459). St. Peter's, Harrow (1352), is a plainer example by Mr. Fellowes Prymne. Mr. Frank Pearson sends his pulpit and stalls at Hove Parish Church (1348), and the choir stalls, Brisbane Cathedral, shown by photographs. The Royal Exchange entrance at Manchester has a telling perspective (1370) by Messrs. Bradshaw Gass and Hope, and Sir Brunwell Thomas shows a vast range of factory premises over a thousand feet long for the Skefko Ball-bearing Works, Luton. His second drawing of this (1373) shows the extremely clever central building with a staircase hall quite monumental in its way. Mr. Raffles Davison's rearrangement for Prince's Square, E., does justice (1387) to the old Swedish Lutheran church, and his drawing of Mr. Mawson's New Town City Centre's tower for Stepney is well hung (1417). We illustrated this campaign in THE BUILDING NEWS for February 5 last. Mr. Bryant Poulter's Village Club, Stokesay (1405) and "Old Walls," Camberley, by Mr. Reginald Poulter (1398) will shortly be illustrated with other Academy exhibits in our pages.

The total number of admitted works this year is nine more than in 1918, when 160 were shown, including one model. Out of the 169 at present on view three are models. The majority of the drawings are either in washed monochrome or water-colour, pen and ink being less in favour than formerly. The rule as to only two photographs of one and the same building being permitted in one frame does not appear to have been adhered to, seeing that four and even five photographs grouped in this way have been hung. In one large coloured drawing the sky is entirely solid black.

Our Illustrations.

IMPERIAL NEW DELHI.

We commence a series of illustrations from the collection of water-colour views by Mr. W. Walcot, now at the Royal Academy, showing the new buildings in course of erection at Delhi, from the designs of Sir Edwin Lutyens, A.R.A., and Mr. Herbert Baker, F.R.I.B.A. We shall also give the plans of the Secretariat Buildings and the Government House, as well as a lay-out plan of the site round these buildings. The plan of the Government House appears to-day. It consists of a central block about 255 feet by 300 feet, connected to two western wings 190 feet by 170 feet, which are continuous with the main block, and two eastern wings 190 feet by 100 feet, joined to the central block by loggias, beneath which are triple carriage-ways leading to the great northern and southern courts. The central block contains the State rooms on the principal floor, and cloak-rooms, staircases, and other necessary accommodation in the upper basement under. The south-west block forms the Viceroy's wing; the corresponding north-west block is a guest wing, the south-east wing the A.D.C. wing, and the north-east wing an administrative wing. The wing blocks contain a first floor, but there is nothing above the State rooms in the central portion of the buildings. The north-west and north-east blocks are connected at the upper basement level by a range of administrative

offices not indicated in the plan given. Beneath the upper basement is a lower basement containing kitchens, stores, go-downs, and other necessary service accommodation, which is carried beneath both of the great courtyards. The principal approach from the east is by a great colonnaded portico 120 feet in breadth, with steps broken by landings leading up to the principal floor. The central feature is the great circular Durbar Hall, some 70 feet in diameter, the dome of which forms the centre feature of the whole group. Beyond it is the grand staircase 110 ft by 55 feet, and immediately in rear of this is the loggia in the centre of the western or garden front. Along this front are the State dining-room, State ballroom, 70 feet by 60 feet, with colonnaded spaces at the sides, and a second ballroom. The four angles of the central block are occupied by a State drawing-room, State billiards-room, State supper-room, and State library, and two great stairways between them give access to the east and west courts. The upper basement floor under, which is entered by the two sets of triple driving ways alluded to from the eastern front, also has driving ways from court to court across the central block to east and west of the side staircases, and in the centre under the Durbar Hall is a great cloak-room centrally situated in respect of the three great staircases and their entrances. The elevational treatment can be best understood by reference to the views we give. The Secretariat Buildings form two H-shaped blocks, with wings at right angles to the sides of the H. They face each other, and are divided by a Processional Way, from which access is obtained to the central entrances of both. The centre part of the H forms in both buildings a block of about 600 feet by 450 feet, the outer side-wings measure some 300 feet in length on either side, thus giving each group of buildings a total length of approximately 1,200 feet in length. Between the two blocks formerly stood a hill, the rock from which has been used to partially level the site; but the side of the buildings next to the Processional Way being some 18 feet lower than the land immediately in the rear, advantage has been taken of the site to mount the two buildings up on ridges of rock. The buildings are in either case for the most part four stories in height. The centre feature of the Southern Block consists of a great staircase hall, very ingeniously contrived in short flights between a series of arched piers. Over this is the Conference Hall, surrounded by white loggias with reception-rooms and libraries at the angles. The corridors round these courts form colonnaded loggias on the principal floor. When possible, by nature of the soil, these courts form grass courts; in other cases, where rock occurs, they are laid out as fountain courts. The Southern Block, while preserving the same general outline, is varied in the planning of the centre block, the main feature of which is a great hall flanked by four circular spaces at the angles, two of which form staircases. Beyond these, on either side, are two great circular colonnaded courts 60 feet in diameter.

NOTE.—Generally, final approval has not been accorded to all that the pictures and plans indicate, and the limitation of cost does not include all the decoration depicted.

HOUSE AT JOUY-EN-JOSAS, FRANCE.

This house, which was being built for Mr. Ernest Mallet at Jouy-en-Josas, between Paris and Versailles, was commenced in 1913, and had reached roof-plate level when

war broke out, since which time it has been left untouched. The site is on high ground in the middle of a well-wooded park sloping for some distance gently to the south and then falling very rapidly to a valley in which is a stream and lake. The English character of the house is intentional. The work, so far as it has been executed, has been carried out on the French method of employing separate contractors for the various trades, the contractor for the brickwork assuming a general responsibility. This work was placed in the hands of Messrs Goffinet and Richeton, of Jouy-en-Josas. The stone, which is Senonville, worked in the quarries, was supplied by Messrs. Fevre and Co., Rue Lafayette, Paris. The carpenters' work was undertaken by Mr. Danbert, of Jouy, and the steel work by Mr. Plot, also of Jouy. The general building bricks were made in the yards at Boissy l'Allier. The heating and hot-water work generally was undertaken by R. Hebert, of Versailles. Mr. Ernest Newton, R.A., is the architect. Captain W. Nicholls was acting as resident architect. The drawing here reproduced is in the Royal Academy Exhibition now open.

THE HOUSE SHORTAGE.

PROPERTY OWNERS AS TAXPAYERS.

"So far as house shortage was concerned no housing scheme could be carried out on commercial lines at the present time," said Mr. Edwin Evans, President of the Property Owners' Protection Association, at the crowded meeting of members at Winchester House last Wednesday to discuss the Rent Restrictions Act and the Housing Bill.

Mr. Evans said the most important question was the revising or altering the basis of taxation with regard to the allowances under Schedule "A" for property. There was very little chance of the taxpayer getting any substantial relief from Imperial taxation. There was enormous onlay and enormous waste. Property owners were practically the largest contributors to the payment of Imperial taxes, and one would have thought that a wise Government would have dealt more tenderly with those interests which provided this enormous revenue. As far as he could judge no property owner had been chosen to sit upon the Royal Commission which had been appointed to inquire into the incidence of taxation. The Council of the National Federation of Property Owners had suggested to the secretary of the Royal Commission that the Government should consider the advisability of placing someone on the Commission who knew something about property. The reply received was that no additions could be made. They had in the Association 25,000 to 30,000 property owners representing 170 millions.

AN INCOME-TAX LIMIT.

The 10 per cent. increase allowed to property owners was totally inadequate; but they would not have got anything if they had not formed themselves into an Association. Why were they treated in this unfair way? (A Voice: "Because you cannot run away.") No, and the property could not, but he would tell them what might run away—the income from it. He would not be a party to anything in the nature of a strike which would be likely to interfere with a peace settlement, but no Government could survive without the confidence of the people over whom they ruled. There was no reason why the supply of houses should not be dealt with on an ordinary economic basis.

A resolution was passed claiming that the Association should be adequately represented on the Royal Commission appointed for "incidence and collection of taxation," seeing that the revenue from the property of its members amounted to about 150 millions per annum.

THREE POINTS.

In issuing an estimate of the probable expenditure involved under the Housing Bill

the Local Government Board are careful to point out that the capital expenditure will depend on (1) the number of houses built, (2) on when they are built, and (3) on the type of house built.

Referring to the financial assistance to be granted from the public funds for housing schemes, the Board state that this will be in the form of a subsidy, which Parliament will be asked to vote annually, though the full cost of schemes will be met in the first instance out of loans to be raised by local authorities or public utility societies, and both will be encouraged to raise such loans in the open market wherever possible.

The capital expenditure on 500,000 houses at £500 each is estimated as follows:—

1919-20	£50,000,000
1920-21	£100,000,000
1921-22	£100,000,000

"Capital sums advanced by the Public Works Loan Commissioners will," continues the Board's statement, "be ultimately recoverable. In the current financial year loan charges will only fall due in the first half-year in respect of the small amount of capital raised before April 1. In the latter half year loan charges will fall due in respect of the capital raised in the first half-year, and it is estimated that in the financial year 1919-20 the total amount of the charge falling on the Exchequer will not exceed £400,000."

A table is appended to the estimate showing that a net deficit of £10 per house per year on 500,000 houses would amount to £5,000,000, at £13 to £6,500,000, and at £15 to £7,500,000.

MODEL RULES FOR SOCIETIES.

Another publication by the Local Government Board in connection with the housing scheme comprised the regulations it is proposed to adopt in the formation of public utility societies, with model rules for such societies. Under these regulations all schemes must be submitted to the Board for their approval before March 31, 1920, or such later date as the Board may allow, and shall be carried into effect before March 31, 1921, or such later date as the Board may allow. The operations of the societies and the rents to be charged will be subject to the approval of the Board. It is again explained that the Exchequer subsidy is to be an amount equivalent to 40 per cent. of the annual charges in respect of interest and repayment of principal on three-quarters of the capital raised by the society under the approved scheme, subject to certain conditions.

Correspondence.

OPERATIVE PAINTERS' DEMANDS.

To the Editor of THE BUILDING NEWS.

Sir.—In view of the probability of your readers having a demand made by your operative painters for an increase of 2d. upon the present rate of 1s. 6d. per hour, it is desirable that they should be made fully acquainted with the present position.

The Local Conciliation Board on the 1st ult., granted an increase of 2d. per hour upon the present rate *subject to the employers having the option to allocate certain defined work to painters' labourers at 1s. 5d. per hour.*

The Board further decided that the increase should become payable for the next working week commencing after the date of ratification of the increase and relative conditions by the Government; but as such ratification has not yet been made by the Government, the rate still is 1s. 6d. per hour, and will remain so until ratified, when readers will be further advised by me.

The position, however, has been complicated by the operatives threatening to disregard the decision of the Conciliation Board; in short, they are demanding 1s. 8d. per hour for both painters and labourers, and in the meantime a strike or sectional strike may have to be dealt with, and a very earnest appeal is made, and is being made simultaneously, by the London Master Builders'

Association to their members strenuously to resist any demands made for any advance until such advance has been officially ratified by the Government, and then only to make it in strict accord with the terms of the ratification.

It is rightly felt that to countenance the operatives' threatened repudiation of the decision of the Conciliation Board would have far-reaching results of a very serious nature, and would at one stroke nullify the functions of the Conciliation Boards from whom so much good service has already been received, and is hoped for, and I trust all will not only support that Board, but also help themselves and fellow members of the trade by resisting such revolutionary methods on the part of the operatives, and firmly refusing to make any departure from the present rate of 1s. 6d., until they hear from me again.

No doubt to do so will mean a sacrifice in many instances, but it is felt that any weakness at the present juncture would result in far greater sacrifices at a later date.

—Yours faithfully,
A. DAVIDSON,
General Secretary,
London Association of Master Decorators,
14, Queen Victoria St., London, E.C.4.

HOLLOW WALLS FOR HOUSING SCHEMES AND THEIR DEFECTS.

Sir.—Upon perusing the "Manual on the Preparation of Housing Schemes, 1919," recently issued by the Local Government Board, I was impressed by the fact that the suggested types of house plans are shown as constructed with hollow external walls. Now, although in the *text* under the heading of "Design and Construction" attention is directed to the superior advantages possessed by solid walls, there appears to be some danger of it being presumed that the hollow walls is the favoured type of construction.

Probably only those experienced in the construction of cavity walls realise to the full their many defects. First of all, they are costly; it is also a weak type of construction, and complications occur at the solid reveals and solid heads of all openings. Cavities allow the condensed moisture and rain (which is driven through the 4½-in. wall) to keep the wooden window and door-heads constantly damp, causing them to decay unless they are protected. Sometimes, in spite of every precaution, mortar droppings accumulate on wall ties and at the bottom of the cavity, and to a large extent defeat the purpose for which the latter is provided.

That they furnish haunts for vermin is well known, and this alone is, in view of recent medical research, a serious indictment.

The question arises, then, as to what alternative is preferable. This, until later years, was not easy to answer; but since it is now established that cement mortar can be made waterproof the problem is simplified, and I personally can refer your readers to builders of houses which have been built in the most exposed positions with 9-in. solid walls, rough-cast or stuccoed with Puddlo cement. These houses are, without a single exception, perfectly dry.

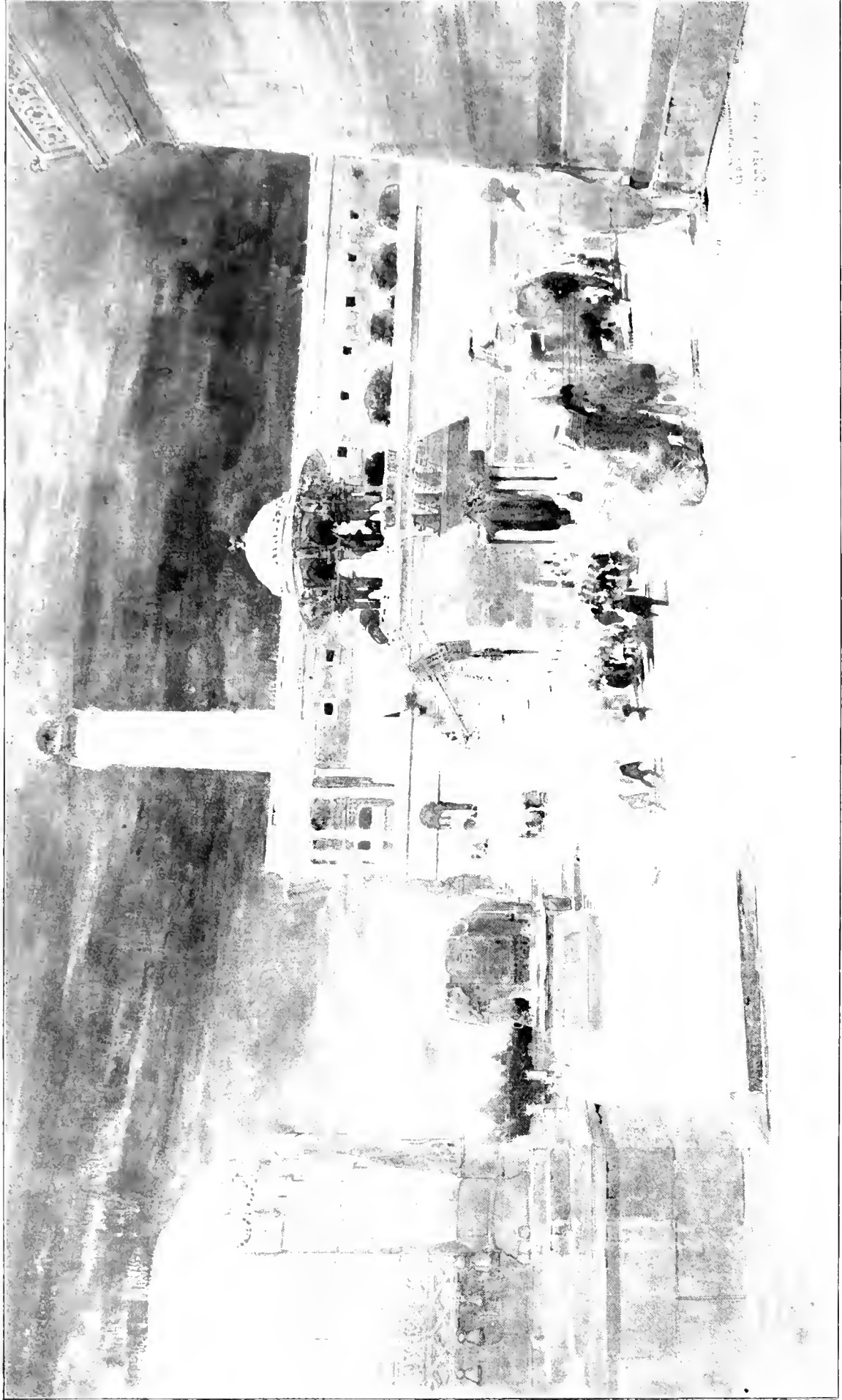
There is also a machine which makes concrete blocks with 4-in. waterproofed facing, the surfacing being applied while the block is in the mould—a good method, because a porous aggregate can be used for the body of the block, and thus obviate condensation as well as giving a warmer room.

As this matter is one which affects everyone—those not fortunate enough to occupy the Government houses will have to bear their quota of the contribution to the cost, by rates and also by taxes—it would be helpful if your readers could express, through the medium of your columns, their considered opinion on the subject.—Yours faithfully,

J. H. KERNER-GREENWOOD.
King's Lynn.

Sir Arthur Stanley, who presided over the annual meeting of the Roads Improvement Association last week, reported that the Treasury had already promised a grant of £10,000,000 for road works, which, it was hoped, would result in an actual expenditure of between £30,000,000 and £40,000,000 on the improvement of the highways. A number of schemes had already been brought forward.

THE BUILDING NEWS, MAY 7, 1919.



W. Bateck, Delhi.

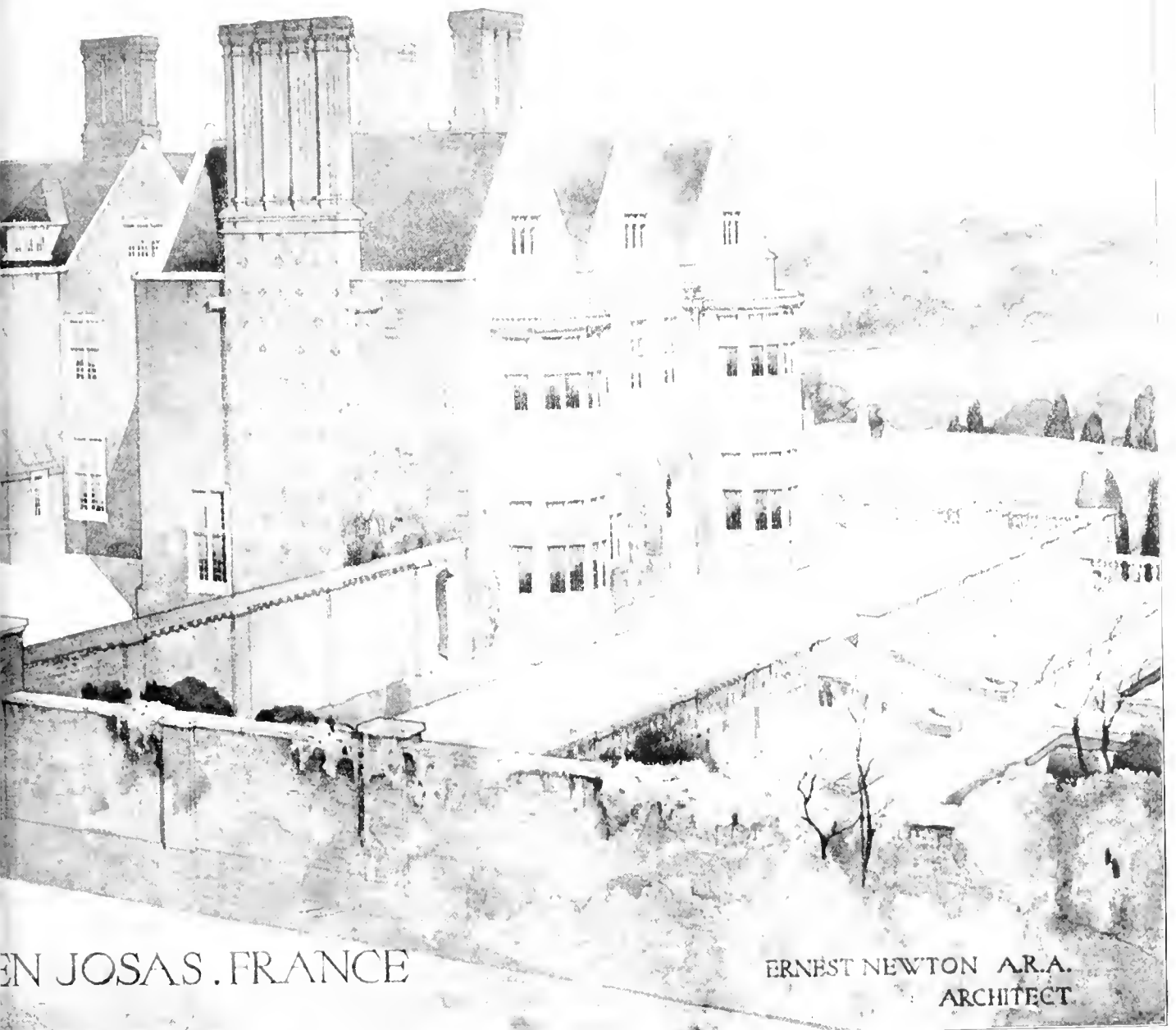
PROCESSIONAL WAY AND GREAT STAIRS, THE SECRETARIAT, IMPERIAL DELHI.
Mr. HERBERT BAKER, F.R.I.B.A., Architect.



HOUSE AT JOU

ENTRANCE FRONT OF A COUNTRY HOUSE, J

S, MAY 7, 1919.

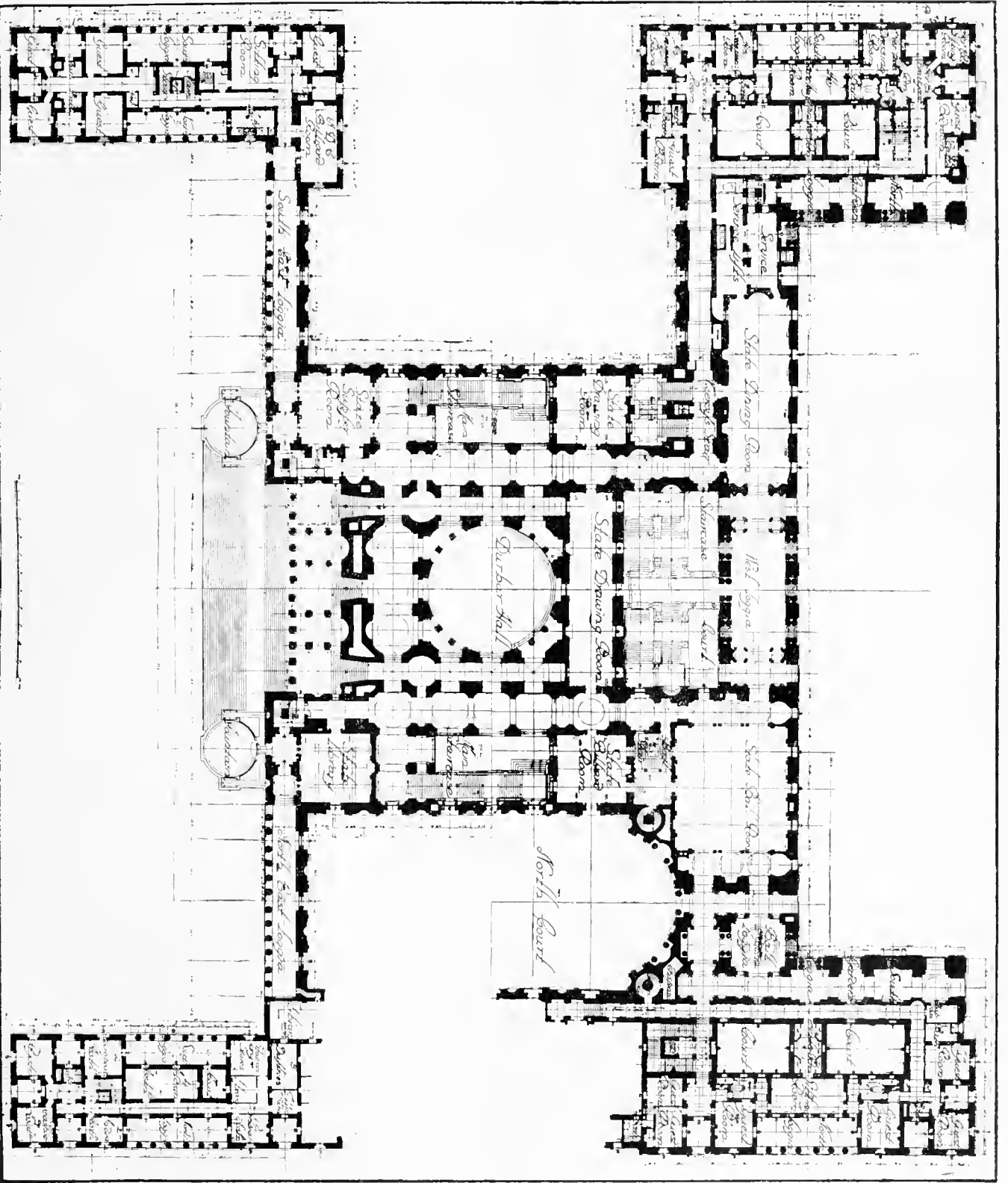


V. EN JOSAS. FRANCE

ERNEST NEWTON A.R.A.
ARCHITECT

V. EN-JOSAS, FRANCE.—Mr. ERNEST NEWTON, R.A., Architect.



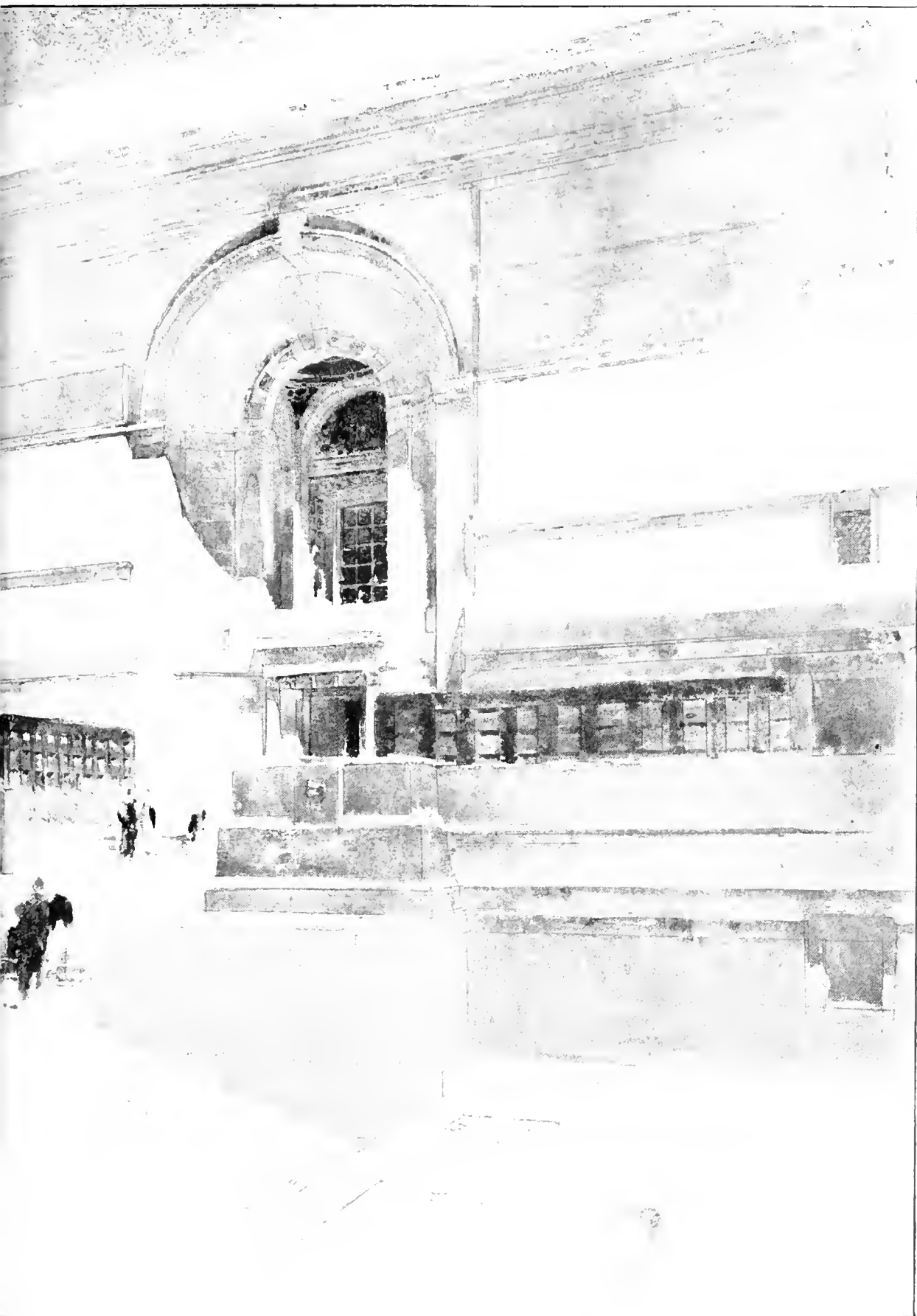


GROUND PLAN, GOVERNMENT HOUSE, DELHI.—Sir Edwin L. LUTYENS, A.R.A., Architect.



W. Walcot, Delt.]

IMPERIAL NEW DELHI, GOVERNMENT HOUSE
Sir EDWIN L. LUTYENS



DETAIL OF NORTH FACADE ENTRANCE.
A.R.A., Architect.



Building Intelligence.

EDINBURGH.—New Science laboratories are to be added to Edinburgh University, on a site of about 115 acres, some fifteen minutes' journey from the present University buildings, between Mayfield and the Blackford Hill. The plans have now been prepared under the direction of Professor James Walker, F.R.S. The department of chemistry at the University has recently been developed by the division of the professorship and the institution of a separate professorship on the subject of chemistry in relation to medicine, to which Professor G. Barger, F.R.S., has been appointed. Before the full scheme in contemplation can be carried out, financial assistance will be required from the friends of the University.

PROFESSIONAL AND TRADE SOCIETIES.

ECCLIOLOGICAL SOCIETY AT DUNDEE.—The Scottish Ecclesiological Society visited Dundee on their latest excursion. Mr. William Baird, Portobello, gave a short account of the history of the church and parish. He referred to the church as being the oldest stone work in the parish, and a relic of the twelfth century, to which an aisle on the north side was added before the middle of the seventeenth century. Reference was made to the south doorway now built up, and to the crucifixion thereon, where the Figure is shown draped to the feet. The chancel arch of Early Norman work, the burial vault of the family of Thomson of Dundee, and other features of interest were also referred to. Dr. Ross pointed to the square east end of the chancel as a peculiarity of Saxon architecture in contrast to the circular east end in Leuchars, Dalmeny, and other Norman churches. It was mentioned that for four centuries Dundee was a possession of the Abbey of Kelso, to which it was probably given by David I.

EDINBURGH ARCHITECTURAL ASSOCIATION.—The Edinburgh Architectural Association visited the Geographical Society's exhibition of maps of Edinburgh in the Synod Hall last Wednesday night. A lecture was given on the study of Old Edinburgh by Capt. F. C. Mears. Mr. T. P. Marwick, president, occupied the chair. The lecture was illustrated by a series of lantern slides, arranged to show the growth of the city from early days. Captain Mears compared the Old Town of Edinburgh with other less altered examples, and showed that the burgh must have been laid out as a "New Town" in the twelfth century. The life in such burghs was based as much on agriculture as trading; that was clearly shown by the old Burgh Laws. Thus early, Edinburgh was not only a spacious new town, but was now called a garden city as well. The wars of independence caused the walling of the town, and to that might be traced the habit of overcrowding, which was the serious problem of to-day. The Old Town was not a slum, but a noble example of town-planning taking full advantage of a magnificent site. The problem of to-day was the disentanglement of its few remaining monuments from the squalor which surrounded them, and the replanting of the old-time gardens. The most costly and ineffective way of dealing with it was to treat it as a slum, as evidenced by the very unsatisfactory results of past improvement schemes. Unless a definite move was made towards preservation, very soon Edinburgh would cease to have any claim to call itself an historic city.

THE INSTITUTION OF CIVIL ENGINEERS.—At the meeting of the Institution of Civil Engineers on Tuesday, April 29, there were elected as honorary members of the institution, H.M. the King of Italy and H.R.H. the Prince of Wales. It was announced that the Council had made the following awards for papers read and discussed at the meetings during the session 1918-19:—A Telford gold medal to George Hughes (Horwich); a Telford gold medal and an Indian Premium to R. B. Joyner, C.I.E. (Bombay); a Watt gold medal to W. S. Abell, M. Eng.

(London); a George Stephenson gold medal to the Hon. R. C. Parsons, M.A. (London); a Webb prize to F. E. Gobe, O.B.E. (Horwich); Telford premiums to James Caldwell (London), and H. B. Sayers (London), J. Remy Smith (Liverpool), and F. W. Scott, M.E. (Benoni) (Transvaal); and a Manby prize to E. L. Leeming, M.Sc.Tech. (Manchester).

LIVERPOOL ARCHITECTURAL SOCIETY.—The annual report of this Society for the official year 1918-19, to be submitted to the annual general meeting to be held on Wednesday next, states that the present membership of the Society consists of 52 Fellows and 38 Associates, a total of 90. There are also 3 Hon. Fellows, 8 Hon. Associates, and 6 Students. During the war the Society, from various causes, has lost a considerable number of Members, and none have been elected. Forty-one Members are known to have joined the fighting forces and twenty-eight to have held Commissions. Five Members, viz., Matthew Honan, Fellow; A. W. Fulton, Philip Dawson and D. M. Griffin, Associates; and A. E. Stott, have been killed in action. Lieut.-Colonel S. P. Morter, R.F.A., was promoted on the field. He was awarded the Distinguished Service Order for general efficiency in the field, 1915-1916-1917, and especially for reconnaissance work at the Battle of Passchendaele, north-east of Ypres, August and September, 1917. Captain Gilbert Fraser, R.E., and Lieut. G. H. H. Sutton, King Edward's Horse, have received the Military Cross, the latter also having been severely wounded. Captain A. R. Sykes and Lieut. F. J. Barnish have been mentioned in dispatches.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.—The fifty-sixth annual meeting was held on Tuesday, April 29. The chair was taken by the President, Mr. Harry Gill, M.S.A. The following gentlemen were elected members:—Messrs. A. Dale, L. Maggs, H. H. Sands, and L. G. Summers. Two delegates were appointed to attend a conference convened by the Royal Institute of British Architects to meet employers and workmen, to consider the present cost of building and inactivity in the trade; and two other delegates selected to represent the Society at the local Conference on Town Planning and the Civic Survey. The Council reported a slight decrease in membership, and recorded with sorrow the loss by death of their distinguished honorary member Dr. J. C. Cox. During the past year the Council have considered questions of great importance in regard to the building industry, and on several occasions the attitude adopted by the Society has been favourably noticed in the professional Press, and good results have followed. A deputation waited upon the City Council Housing Committee and explained their views upon housing schemes. Arising out of this, Mr. Bromley arranged a competition among the members, and generously offered premiums amounting to £150. Photographs of the thirty-eight members who have been on active service have been collected and suitably framed, and presented to the Society by the Hon. Secretary. The Society has been keenly interested in the matter of a Civic War Memorial, and have submitted suggestions to the City Council. They have also arranged a joint conference of architects, master builders, and operatives to consider the present situation in the building trade, and they anticipate that good results will follow. Through the efforts of the President, and by courtesy of the City Council, an exhibition of water-colour drawings by the late Captain C. Gascoyne was held at the Castle. The Society has gratefully accepted one of these drawings given by his mother. Although no subscriptions had been collected from active service members, the Council were able to report a loss of less than £6 on the year's working. The following officers were elected:—President, Mr. H. G. Watkins; Vice-President, Mr. A. Eaton. Council: Messrs. H. Gill, A. N. Bromley, P. H. Gurrey, R. Evans, W. R. Gleave, E. H. Heazell, C. A. Sutton, W. H. Swann, and A. E. Turner. Hon. Secretary, Mr. F. M. Royle; Hon. Librarian, Mr. R. Spencer. A cordial vote of thanks was accorded the retiring President for the very excellent manner in which he had kept

the Society active, and for his unsparing efforts on their behalf during the war period.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The annual general meeting of the R.I.B.A. was held on Monday last, when the annual report was submitted and adopted. The following table shows the present subscribing membership of the Royal Institute compared with the preceding five years:—

	Fellows.	Associates.	Associates.	Total.
1914	852	1,695	56	2,603
1915	357	1,713	54	2,624
1916	852	1,679	52	2,583
1917	842	1,656	48	2,546
1918	838	1,651	45	2,514
1919	834	1,770	46	2,650

During the official year since the last annual general meeting twelve Fellows and 120 Associates have been elected, as against twenty-one Fellows and ten Associates the previous year. There are now 1,836 Licentiates on the roll. Since the publication of the last annual report six Licentiates have passed the examination qualifying for election to the Fellowship and have been duly elected as Fellows. During the year thirty-three candidates for probationership have furnished the council with satisfactory evidence of their attainments and have been registered as probationers. The intermediate and final examinations have been held once only during the official year—viz., in June. The results of the examination show that forty-two Students have been added to the register during the year, and six candidates have passed the examination qualifying for Associateship. Members, Licentiates, and Students who served with the Forces during the war number altogether 1,255—viz., 79 Fellows, 540 Associates, 536 Licentiates, and 300 Students. The list, however, is far from complete, many members joined up during the last two years having failed to notify the secretary. Reference is made, among other matters, to the work of architects in connection with the Military Service Acts, the demobilisation of pivotal men, the various restrictions on building, etc. During the period under review the loss of income through the remission of subscriptions of members serving with the Forces amounted to nearly £1,120. The strictest economy has been maintained in all departments of expenditure, and the council have again to record a satisfactory drop in the bank overdraft from £1,639 at the end of 1917 to £825 at the end of 1918. The net result for the year 1918 is a balance of £221 income over expenditure. The reports of the various standing committees are included.

At a meeting of the Paddington Borough Council protests were made against the proposal to pay a salary to the chairman of the Metropolitan Water Board.

A proposal has been adopted for the restoration of the old town hall, Faringdon, as a war memorial. It is intended to reserve the upper room in the restored building as a recreation-room for Faringdon soldiers.

The Belgian Minister of War has stated that on the spot where Captain Fryatt and twelve patriotic citizens of Bruges were shot by the Germans a new barracks will be constructed, and that space will be reserved for the erection of a monument to their memory.

The Scottish Board of Works has declined to grant permission for the erection of a brass war memorial tablet in the ruined portion of the Haddington Parish Church, on the ground that it would not be in keeping with the mediæval character of the building, which had no association with the war.

In furtherance of the scheme for the conversion of Army and other Government huts into cottages, the Deputy-Chairman of the Ministry of Munitions has written to the City Corporation asking permission to erect a hut converted for use as a dwelling in a central position in the City for inspection by the public.

Mr. Charles J. Blomfield, F.R.I.B.A. (late senior partner of Sir Arthur Blomfield and Sons), having now been demobilised and being, consequently, free of further duty with the Artists' Rifles, is again able to give his entire time and attention to the practice of architecture—and for the present intends carrying on business at 125, Park Road, N.W.3 (near St. John's Wood Station). Telephone, Paddington 567.

Our Office Table.

"The Design of Factory and Industrial Buildings," by Ernest G. W. Souster, A.R.I.B.A. (London: Scott, Greenwood and Son, 10s. 6d.), is a volume of some 168 pages, in which the author has endeavoured to give but the essential principles governing the design of the class of buildings concerned. There are ninety-eight illustrations and diagrams, most of which are too small a scale. Some useful chapters are added on Welfare Work and Industrial Research Departments.

Sir Aston Webb, who presided last week over a dinner given by the London Society, said the London Society, which was really only just beginning its work, would, with good management and the interest and enthusiasm of its members, develop into a very large society. They were only just beginning when the war broke out, and stopped their work. On the question of Charing Cross Bridge the society had felt bound to oppose any strengthening of the bridge that would make it a permanency. They had been successful to a great extent. The members of the Parliamentary Committees that examined the Bill had recognised that the bridge was "inferentially ugly." One could only hope that as the station once fell down, so the bridge might fall, too.

At last week's meeting of the Newark Town Council Ald. L. Priestley called attention to the loss to the town by the purchase and demolition by the purchaser of the Chantry House, Newark, a fine old mansion in Queen Anne architecture. He was afraid that it was too late to save the building, but he proposed that an inquiry should be addressed to the purchaser, asking what sum was required for the site. Dr. Stallard said he viewed with the greatest possible regret the proceedings by which they lost the Chantry House. He characterised the demolition of the mansion as an act of vandalism. The Mayor said he had hoped this site would be secured for the town. He went so far as to make an offer for it on his own behalf, intending to give it to the town, but someone came forward and outbid him, so he lost it. Had he purchased it he would not, of course, have bought Northgate House. Ald. Priestley's resolution was carried without opposition.

Owing to the lack of coal and to transport difficulties, the German brick-kilns cannot reckon on a coal supply for some time, and this is causing great difficulties in the provision of new dwelling houses. In order to restart the building trade, and leave no means untried of furthering housing the State Commissioner for Housing lately invited a number of experts of the clay industry, and representatives of the brick-kiln trade, to a conference, to consider the suitability of unburnt clay bricks as building material. It was the general opinion of the experts that, provided suitable kinds of clay were used, unburnt bricks were capable of resisting the weather, and were, from a technical and constructive point of view, quite unobjectionable material for small houses in rural districts. It is recommended that the necessary plant be erected in the neighbourhood of building sites where supplies of suitable clay are available, in order to prepare unburnt clay bricks, which, after four to six weeks' drying in the open air, are ready for building purposes.

The question of the reappointment of Mr. Charles H. Broughton, described as a conscientious objector, as head of the Modelling Department of the Leeds School of Art, has roused a strong feeling in the city. At a meeting of the Education Committee last Wednesday discussion took place on the minutes of the staffing sub-committee, which included a resolution reappointing Mr. Broughton. Alderman W. H. Clarke (Chairman) said that at a previous meeting it was decided not to reappoint Mr. Broughton on the ground of his being a conscientious objector, and the City Council confirmed that decision. If the Committee desired to avoid friction in the schools over this, they should not appoint Mr. Broughton. The man who

was Mr. Broughton's competitor for the post was Mr. Walter Marsden, a sculptor of ability and promise, who had won the M.C. and Bar in the war, and was also the recipient of numerous medals and prizes for his work. The voting resulted in a tie, and the Chairman gave his casting vote for the matter to be referred back.

At a meeting of architectural assistants, building surveyors, and technical assistants, held in London last week, it was unanimously agreed to form a union, under the title of the Architectural Assistants' Professional Union, open to salaried architects, quantity surveyors, draughtsmen, and technical assistants employed by Government and municipal offices, practising architects, surveyors, and builders. Hundreds of members were enrolled. Cases were cited where it was alleged assistants are being paid salaries less than half those of builders' labourers.

In a circular to the County Councils and the local authorities, the Secretary to the Local Government Board dwells on the necessity for economy in the acquirement of land for housing schemes, and asks that in all cases before negotiating for the acquisition of any land selected as a housing site, every council will apply in writing to the office of the District Valuer of the Land Valuation Department, asking him to supply a valuation of the land, and that a copy of this valuation shall be sent to the Housing Commissioner when laying proposals for the acquisition of the site before him. No inspection of any land, however, is to be made by a District Valuer on behalf of the Council until the Council have notified the owner of the land to that effect. If desired by the local authority, the Inland Revenue Valuation Officer will undertake negotiations for the purchase of sites, provided that prior notice of their intention to acquire has been given to the owner by the local authority.

"Inhabited House Duty," by W. E. Snelling (London, Sir Isaac Pitman and Sons, Ltd., 12s. 6d. net), is a much needed and well-compiled treatise for the use of lawyers, architects, builders, accountants, property-owners, and others interested in the complicated laws relating to a tax which, not free from objectionable features itself, is the outcome of a series of imposts commencing with the odious Hearth and Stove Tax of 1662, which, however, in spite of the detestation in which it was held, lasted for 150 years, and wrought only less evil than Mr. Lloyd George's Finance Acts of 1909-10, which seems likely to last as long, in spite of the coming select committee thereon, and Dr. Addison's apparent intention to find new jobs for the Valuation Duties' valuers in connection with the Housing Bill. We congratulate the author on his masterly treatment of his subject, and the welcome elucidation of the salient points in the cases he quotes by sketches which enable the reader promptly to grasp the facts brought out. This is an innovation which might well be followed by legal commentators in similar text-books.

Okehampton has decided to build a town hall and municipal offices as a war memorial.

The war memorial scheme for Peppard (Oxon) includes a village institute and a memorial cross.

A tender for the erection of 52 houses, for £30,000, at Shotton has been accepted by the Hawarden (Flintshire) R.D.C.

Mr. R. H. Lucas, borough surveyor of Kingston-on-Thames, has been appointed borough engineer and surveyor of Hammersmith.

A gift of £3,000 is announced for the decoration of the interior of St. Saviour's Church, Heckmondwike, as a war memorial. Plans have been prepared by Sir Charles Nicholson.

Sir A. Brumwell-Thomas, F.R.I.B.A., Mr. A. N. Prentice, F.R.I.B.A., and Mr. James Clark, R.I., were last Friday elected members of the Royal British Colonial Society of Artists.

A company has been formed, with a capital of £20,000, to acquire Nos. 10-14, Sydney Place, Bath, for conversion into hotel and clinic. Plans have been prepared by Messrs. T. B. Silcock and Son. The alterations are estimated to cost £10,000, and a further sum of £8,000 for furniture and equipment.

LIST OF TENDERS OPEN.

COMPETITIONS.

May 15.—Designs invited for a war memorial cross at Truro. No premiums offered. W. S. Sitwell, Hon. Sec., 2, Prince's Street, Truro.

May 17.—The Housing Committee of the Newcastle-on-Tyne Corporation have increased to 137 guineas the first premium in connection with their competition for designs for laying out a portion of their Walker Estate, and have extended the time to May 17.

May 30.—Designs invited by the Buxton War Memorial Committee for a War Memorial Monument at prices not to exceed £500 and £1,000. No premiums offered. Designs and prices to J. M. Scott, Information Bureau, Buxton. See advt.

BUILDINGS.

May 10.—Alterations and additions to the English Baptist Church, Deri. Plans and specifications at the office of H. G. Jones, architect and surveyor, Bank Chambers, Hengood. Tenders to him.

May 15.—Erection and completion of about 170 houses in Dudley.—For the town council.—Plans, specifications, and other particulars at the Borough Surveyor's Office, Town Hall, Dudley, on or after April 28, on payment of £1 1s. Sealed tenders to the Borough Surveyor's Office.

May 15.—Tenders, required in the erection of a new picture house between Bar Street and Eyre Street, Bradford Road, Batley, are invited from masons, plumbers, plasterers, joiners, slaters, ironfounders, engineers, and electricians.—For the Regent Pictures (Batley), Ltd.—Bills of quantities and plans seen at the offices of Messrs. W. Hanstock and Son, architects, Branch Road, Batley, until May 15. Tenders to the offices of the architects.

May 19.—For a 24-bed hospital pavilion in connection with Linaere Hospital, Linaere Lane, Bootle.—For the Bootle Corporation.—Bills of quantities and further particulars at the borough engineer's office. Tenders to J. S. Tumilty, town clerk.

CHIPS.

Sir Aston Webb, President of the Royal Academy, is preparing a design for the Dover Patrol monuments to be erected at Dover and near Cape Grisnez.

The Swansea Corporation Highways Committee have passed plans for a number of houses to be built on the American type, half-timber and half-plaster.

Plans have been approved by the Aberdeen T.C. for extensions to the engineering department at Robert Gordlan's Technical College. Mr. J. A. O. Allan is the architect.

Out of 57 candidates, Mr. Walter Farrar, deputy borough engineer and surveyor to the Todmorden Corporation, has been appointed assistant to the borough engineer of Wigan at a salary of £300 per annum.

At the recent vestry meeting of the parish of St. Martin's, Birmingham, plans were approved for an annex to the church. The building will accommodate 260 to 300 persons, and the architect estimates the cost at £6,000.

At the request of the committee on a war memorial, Mr. W. D. Caröc has suggested a stained-glass east window, the subject being our Lord in Glory, at a cost of £1,700. A triptych, designed by Mr. Bernard Gaymer, will also probably be placed in the north-east chapel.

At the annual meeting of the Association of Land Valuation Assessors for Scotland, held in the Caledonian Station Hotel, Edinburgh, Mr. R. D. Tamahill, Kilmarnock, was appointed President; Mr. D. W. Cawl, Inverness, Vice-President; and Messrs. A. Wark, Kilmarnock, and James Smart, Edinburgh, were appointed Treasurer and Secretary respectively. It was agreed to hold the next annual meeting in Inverness.

At a meeting of the British Archaeological Association, held last Thursday at 22, Russell Square, Mr. William A. Cater gave a lecture dealing with the Mansion House district. He made particular reference to the market adjoining the Church of St. Mary Woolnoth, and authorised by Edward I. The Walbrook, it was thought, at one time was wide enough to enable boats to proceed along it as far as Bucklersbury Bridge.

Three portrait groups of those who have played leading parts in the organisation and conduct of the war have been commissioned for presentation to one of the public galleries. Sir James Guthrie has agreed to paint the group of British and Overseas statesmen; Mr. J. S. Sargent has undertaken that of the military leaders; and Sir Arthur Cope will paint the naval group. The groups will be on the scale of life, and each picture will include from fifteen to twenty figures.

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Currente Calamo.

Ousted for the second time from its cosy home in Suffolk Street, the Royal Society of British Artists, which was indebted to the Royal Academy for the facilities of its last exhibition, has to acknowledge the hospitality of the City for the use of the Guildhall Art Galleries wherein its summer exhibition will be on view till the evening of June 28. There are quite a respectable number of good things, and City men with artistic proclivities and too little time to spare to travel West after lunch may be glad to avail themselves of the opportunity afforded them to refresh their souls with the contemplation of the delightful places at home and abroad which it is the good fortune of the members of the R.S.B.A. to have appreciated to such good purpose. There is only one picture shown by Mr. S. J. Solomon, the President—a portrait of Mr. Joel Emanuel (250), which is a present to the sitter, who has been the Society's honorary solicitor for thirty years. Mr. Claude F. Barry is most successful with his "Autumn, Lake Como" (233), which we like better than his "Morning in an Olive Grove" (321). Mr. F. F. Foottet has a good "Cumberland Landscape, Loweswater" (86), and a perhaps less attractive, but quite typical, "Sun and Mist, Waterloo Bridge" (307). Mr. A. Warren Dow sends a pleasant little view of "Kensington Place, Notting Hill Gate" (15), and "A Stormy Day, St. Albans" (3). Mr. Leonard Richmond's four subjects are all welcome—the two Thames bridges most so, perhaps, because most familiar (171 and 176); but "The Lake" (51), and "The River" (57), will not lack admirers. Mr. E. Handley-Read has a fine "Interior of Arras Cathedral" (275). Other architectural subjects are Mr. Harding Smith's "Christchurch Gate, Canterbury" (7), "Chartres Cathedral: West Front" (21) by Mr. Barry Pittar; "Lisieux," by Mr. H. P. Weaver; "Dunster Church" (98), by Mr. Walter S. S. Tyrwhitt, who also sends an interesting view in the "Interior of the Picture Gallery of the Bodleian Library" (146), and "Coming to Prayers: Ibrahim Aga Mosque, Cairo" (44). Mr. W. E. Riley, F.R.I.B.A., favours us with two more nice seascapes, "Amongst the Rocks" (11), and "A Purbeck Cliff"

(158). Other good things are Mr. C. S. Spackman's "The Bay" (136), "In Brixham Harbour" (111), by Mr. W. T. M. Hawksworth, and "In the Heart of Dartmoor" (114), by Mr. C. E. Hanford.

There are some interesting things at the Spring Exhibition of the International Society of Sculptors, Painters, and Gravers, at the Grosvenor Gallery. Among the best are the five exhibits of Mr. A. J. Munnings, the new A.R.A., especially his "Trooper in Marching Order" (3), who looks—man and horse—the title to a "t." "A Point to Point Meeting" (19) and "Saddling Up for the Grand National" (27) will delight all sportsmen, and "A Lonely Shore" (20) gives us a welcome taste of the author's quality in quite another but as satisfactory a direction. Mr. William Strang is well represented. We don't quite gather what she is "The Messenger" of (19), but she is pleasing to look upon, and Mr. Strang has done his best with her. "The Tire Women" (56) is also good. Mr. Glyn Philpot has given us a rather unattractive Cleopatra in his "Meeting of Antony and Cleopatra after the Battle of Actium" (29). Mr. William Nicholson's "Flower Piece" (34) is nice. Mr. S. J. Lamorna Birsh is equally commendable in "A Western Shore" (39), "The Bridge at Etaples" (42) and "A Model on the Cliffs" (49). Sir John Lavery is equally satisfactory in his "Afternoon in the Woods, Tangier" (75), and "The Harbour, Saint Jean de Luis" (79). He also shows a portrait of Miss St. John Graham" (263). Mr. J. J. Shannon's one picture is "The Mermaid and the Maid" (33). The only sculpture worth mention is a "Group of War Sketches" (130) in plaster. All the seven groups are good, and we hope the colossal group of "The Returned Prisoners of War," for which it is a model, may find realisation. It well deserves to.

We fear some of us who have not unnaturally hastened to get back to our pre-war size and space did not foresee the appointment of such a Committee unduly weighted with paper-makers, and the new restrictions of the Board of Trade with regard to the paper on which newspapers are printed, which give us back entirely into the hands of the Federation of Paper Makers which the war has consolidated into a ring.

There is, it is true, an appeal to the Board of Trade, but we know what that means. The Paper Controller arranged during the war that consumers should get their wretched ration of paper at mill cost, plus 7½ per cent. Mill costs were to be taken on a system average, thanks to which a difference to the consumer worked out at over 50 per cent. To-day the consumer is to pay to the manufacturer what the latter likes, and he cannot even get a licence to buy elsewhere. Of course, newspapers are not to suffer alone. The millions of other paper users are to be mulcted for the sole benefit of the few paper-makers, and the workers in all the industries in which paper plays so large a part are to pay, as well, in decreased employment.

The Finance Committee asked permission at the meeting of the Liverpool City Council last Wednesday for the erection of the statue of King Edward VII. in a central position on the terrace in front of the south entrance of St. George's Hall. They also recommended that the necessary steps should be taken to prepare the site for the statue, and that £500 should be contributed towards the cost of providing a suitable base. Mr. F. A. Goodwin opposed the scheme, which was, he said, merely a repetition of the scheme which was put forward and condemned by public opinion in 1911. If the statue was already cast, and it was imperative that it should be brought to Liverpool, the old George's Baths' site might be temporarily used as a resting-place for it. But the obviously fitting place was between the statues of King Edward's parents, in front of St. George's Hall. At this stage it was discovered that a quorum was not present, and the council was accordingly adjourned until Friday afternoon, when the proposal to place the equestrian statue of King Edward VII. on the podium of St. George's Hall was withdrawn by the chairman of the Finance Committee in deference to the strong opposition shown to the scheme both outside and inside the council. So Liverpool is back where it was in 1911, and the statue seems likely to wait for the next squabble about its ultimate destination.

Now that some of the commonest wall-papers have jumped up from about 1½d. to 2s. 3d. a piece, those responsible for the building of the houses of the people will do well to use none of them. They are

mostly ugly, and generally insanitary. At present prices they will be allowed to remain till they become more and more the harbourage for disease germs. In better-class houses the wall paper is giving place more and more to the cleanly, artistic, and cheaper washable distemper paints and enamels which the enterprise of the great firms who produce them has put on the market. We hope it will continue to do so, for the more recent wall-papers have to a great extent lost the beauty of design that characterised the efforts of Morris and some of his contemporaries to help us to rid our rooms of the horrors of the Mid-Victorian years, and the prices to-day of most wall-papers are simply prohibitive.

The Local Government Board has issued a sixteen-page penny booklet on "Housing by Public Utility Societies," which can be had through any bookseller or any of the Government Stationery Offices. As is stated, the public utility is the readiest channel through which working people themselves, or others willing to build, can produce working-class houses, provided they secure proper direction by a competent architect and an honest builder. Possibly the larger co-operative trade societies and the trade unions which have plenty of capital might have done this before, had Government been really desirous to help, and had not crippled builders by unfair taxation. Even now there is a good deal of red-tape about the regulations under the new Act. Still, any group of seven or more persons can form such societies, and borrow up to three-quarters of the cost of their land and buildings. They can also obtain subsidies. Thus, supposing a society decided upon a building scheme to cost £40,000, and borrowed from the State three-quarters of that amount, namely, £30,000. Supposing, for the sake of example, that the rate of interest was $5\frac{1}{2}$ per cent. per annum. Allowing for gradual repayment in fifty yearly instalments, the yearly charges for interest and repayment to be paid on this £30,000 loan would amount to roughly £1,770. The Government subsidy to which the society would be entitled would be two-fifths of this £1,770, namely, £708, every year during the period of repayment, leaving the balance of £1,062 and the charges on the £10,000 capital privately subscribed, together with cost of management and upkeep, to be met out of the rent of the houses built. The subsidy, it will be noticed, amounts to a grant of roughly one-third of the total cost of the building scheme. Wisely managed, if not smothered by the Housing Commissioners and the non-official organisations they are advised to consult, any well-managed utility society should be able to pay 6 per cent. on its undertaking, which is to be the limit under the new Act, instead of 5 per cent. as at present.

A new Bill providing for the Registration of Architects has been submitted to the Washington State Legislature, with an appeal for its enactment, by the Washington State Chapter of the American Insti-

tute of Architects. The Bill proposes to regulate the use of the title "Architect" by requiring all persons using it to have a certificate of registration, which may be obtained from an examining board upon proof of an established practice in the State, by presentation of certificates obtained in other States, or diplomas from accredited universities or schools, or by passing an examination. The Bill is not intended to, nor does it, prevent any person of any calling whatever from making drawings for buildings of any character, but regulates only the use of the title "Architect." It is generally conceded that the public at large is almost universally ignorant of the functions of an architect and of the minimum qualifications for the practice of architecture. And this ignorance is but natural when we recall how seldom the individual undertaking to build employs an architect. And still further, having once built, and by experience having gained some knowledge of the functions and the necessary qualifications of the architect, how seldom he again builds without employing an architect, making of value the experience thus gained. It is to protect this individual that this Bill is designed. It affords him some assurance of at least minimum qualifications in the architect he employs, of which, in the present conditions, he is likely to have little. It sets a standard of education for the time being, and gives evidence that the architect so registered has had the proper training and experience in subsequent practice, or that he has acquired in practice for a long period a comprehensive knowledge of architecture, and has presented proof of this knowledge.

To encourage the use of and demand for British timber, and the encouragement of forestry, a Conference representative of all branches of the British timber industry is to be held in London in the near future, of woodland owners, estate agents, architects, builders, timber merchants, and all who use or specify timber. It is notorious that the home-grown timber trade has been too long neglected, and that now is the time to take steps with the object of securing a largely extended use of the British product. It is admitted by all authorities that there is a large quantity of oak, elm, beech, and other timber in this country which is admirably suited for many superior purposes, and which possesses qualities far superior to the foreign product. Mr. M. C. Duchesne, of Farnham Common, Slough, who is the honorary secretary of the Royal English Arboricultural Society and also of the English Forestry Association, is making the arrangements for the Conference. According to the Report of the Forestry Subcommittee of the Reconstruction Committee, the United Kingdom before the war was dependent for more than 60 per cent. of its timber on the virgin forests of foreign countries, which are being steadily depleted. The proportion derived from sources within the Empire fell from 22 per cent. in 1899 to 10 per cent. in 1913. In the latter year we imported 10,431,309 loads of timber. Before the war there were approximately

three million acres of wood in the United Kingdom, and the total annual felling has been estimated at 45 million cubic feet, of which 30 million cubic feet were conifers and 15 million cubic feet hardwoods. On the basis of this estimate the yield was less than 15 cubic feet per acre per annum—a result which it is hoped to considerably improve in the not distant future. If a revision of railway rates could be effected it would lead to a considerable reduction in the cost of timber to the consumer. This aspect of the position has been emphasised more than once by timber growers, who contend that the railway rates should be no more than the timber will reasonably bear, having regard to the price obtained at the consuming centre, which hitherto has been fixed by the price of imported timber.

THE ROYAL ACADEMY.

If there is not as yet much beauty given for ashes, as the motto of the catalogue this year intimates is the desire of the Academicians, let us all fairly admit that any sense of incoherence which may affect the ordinary visitor is, after all, but a symptom of progress towards at least a recognition of the fact that new forms of beauty in art which have had it elsewhere, and new methods of fostering and regulating it, instead of excluding it year by year from the sacred walls hitherto monopolised by orthodox if somewhat tedious practitioners. Probably reform is coming ere long, and the new influence which has gained a footing will make itself more and more felt year by year, as far as painting is concerned, even if architecture is still relegated to its tiny chamber, and sculpture is left powerless to produce results of the sort which this year more than ever engender pessimism. Anyhow, the popular verdict evidently is that it is a better Academy show than we have had for several years, and that the best pictures have something about them which is a change for the better, though why possibly few can say.

Of these the most striking is undoubtedly "Gassed" (120), by Mr. John Sargent, which, some nine feet in height, covers nearly the whole end wall of Gallery III. A line of our gassed soldiers, blinded and bandaged, is being led to hospital, while from another direction is advancing another group of victims. A crowd of others lying down visibly manifest anxiety for relief from their anguish; and their swollen lips and contorted limbs suggest all too plainly, but not horribly, the tortures they have endured. In the background are some soldiers playing football. Realistic enough, the picture is in no way a mere theatrical parade of human agony. Many times, doubtless, some such groups of sufferers passed from some clearing station towards hospital, and paused at dawn beneath the rays of the pale full moon, too pain-smitten to pose as the heroes they were, but, all unconsciously, embodying such an appeal to humanity against a recrudescence of such barbarities of warfare as Mr. Sargent has shown the poor blasted fruits of as one devoutly trusts his great picture may long make to posterity.

Of the other "pictures of the year" we should unhesitatingly name Mr. Walter Bayes' "Pulvis et Umbra" (564); Mr. Gerald Moira's "Dartmoor" (339); and Mr. G. Spencer Watson's "The Donkey Ride" (285). The first-named is that of a wrestling match in the courtyard of some French inn, and the extraordinarily lifelike delineation of

the combatants, and the figures encouraging or avoiding them, is remarkable. The dazzling shaft of sunlight, full of dust, but which yet irradiates the picture, and, like limelight on the stage, concentrates attention on the principal actors in the scene, is rendered with a mastery which, if at first it overwhelms the beholder, and, indeed, puzzles him, as it did some of us on Press day, permeates him with an exhilaration which only real art and not the mere tricks thereof can inspire. So after another fashion does Mr. Moira's "Dartmoor," and to a degree which will compensate not a few, who, thankful for past relief from the worries of the world and the troubles of the flesh, in the ecstasy induced by the matchless moorland air and scenery will have to forgo once again the chance of their enjoyment and give place to the monopolists thereof with well-lined pockets. How one envies them the house with the verandah, and the round pond in the foreground, and the assurance of comfort and real happiness that gathers appreciative admirers round the picture. Similarly, it is evident that Mr. Spencer Watson's "Donkey Ride" catches the eye of nine out of ten as soon as they enter Gallery VI. It is such a pleasant picture. The lady, the boy, and the donkey are so real and such likeable specimens of their sort that one forgets that the sky and the sandhills have hardly had their share of the artist's care, in the additional pleasure contributed by the dwarf sand-plants in the foreground.

The portraits are, generally speaking, of more interest than usual, though we miss more than one artist whose contributions are welcomed by the public. Sir William Orpen, for instance, only sends one, that of "Michael Wemyss, Esq., Royal Horse Guards" (22). Mr. Sargent has two, each in its way excellent, especially the first, of "President Wilson" (135), who appears at his best; resolute of will, and with strong capable hands indicative of impatience with the slow progress lately of some of his colleagues at Paris. The other, of "Mrs. Percival Duxbury and Daughter" (46), is the one which fetched ten thousand guineas at auction in response to the Red Cross offer. The standing position of the lady is perhaps too rigid, but the little girl in her fur coat, nestling in the folds of her mother's dress, is charming, and Mr. Sargent has rendered her at her best. His other two contributions are "San Virgilio" (15) and "The Cathedral of Arras in August, 1918" (103). Sir Edward Poynter's small three-quarter length of "King Edward VIII." (147), painted in 1909, is the only Royal portrait exhibited this year. Mr. Arthur Hacker has given us "The Right Hon. Sir William Bull, M.P." (164) at his best—genial and jolly, as usual. "The Marquess of Londonderry" (6), by Sir John Lavery, looks as distinguished as in real life. "Lord Birkenhead" (197) hardly so much so, although Mr. Glynn Philpot has given him the full benefit of his gorgeous official robes. Possibly the new Chancellor was meditating on the lack of the bath in his new quarters at the Palace of Westminster, which was amusingly discussed in Parliament last week. Mr. Fiddes Watts' "The Right Hon. Arthur James Balfour, M.P." (229) is an attractive rendering of our philosphic ex-Premier, shown in his frequent attitude, with his hands grasping the lapels of his coat; and Mr. Watts has another, of "The Right Hon. Sir John H. A. Macdonald, K.C.B., late Lord Justice Clerk of Scotland" (310). Mr. Solomon J. Solomon gives us "Charles Gill, Esq., K.C." (137), as fresh as pink paint, and

with beautifully-cared-for hands and finger-nails. "Mr. Justice Darling" (18), by Mr. R. G. Eves, looks as serious as when of late grieving over the shortcomings of a brother on the bench; we like him best when the serio-comic smile on his face precludes an encouraging joke for the benefit of counsel, and shall doubtless soon see it again at some other exhibition. We should hardly forgive Mr. William Strang's disguise of himself (628) in that cloth tweed cap and dressing-gown but for his really fine portrait of a girl in a red blouse, "An Exile" (205).

There seem fewer good landscapes this year than usual, though the Scottish artists contribute their fair share. One of the best is "A Summer Evening" (70), by Mr. J. L. Wingate, the new President of the Royal Scottish Academy. Two others, by Mr. D. Y. Cameron, "April Snows, Ben Vorlich" (12) and "The Sound of Kerrera" (116) are welcome scenes from the Highland hills amid which their author is master in his own house. Amid other rural scenes of which he is a favoured exponent Mr. Arnesby Brown makes up for the absence of his favourite cattle pieces with four small landscapes: "The Line of the Plough" (34), "The Distant Marshes" (92), "A Village by the Sea" (96), and "April" (151). Among the best in the exhibition are certainly Mr. George Clausen's "New Moon in May" (146) and "The Little Garden" (463).

There are several War pictures of considerable interest. Among those by Sir John Lavery, the "Fore Cabin, H.M.S. 'Queen Elizabeth,' Rosyth, November 16, 1918, Morning" (99) and again at night (107) will claim attention as faithful records of a momentous occasion. "The Merchant Service" (87), by Lieut.-Commander Norman Wilkinson, is a huge seascape, showing in the foreground a small boat nacked with fugitives from a torpedoed ship, upon whom a big submarine, seen in the distance, is firing fiercely, after the murderous German fashion which we are all going to forget now we are to have a "good peace!" In the delightfulness of so much "bruderschaft" the valour and endurance of our gallant merchantmen, "nothing daunted by submarine or mine, who maintained the traditions of our race," may well need pictorial record against the day when our children or children's children are making better preparation against German "friendship" than we did! Mr. Ronald Gray's picture of "The Metropolitan Observation Room during an Air Raid" (551) is well rendered. Already, we fear, the patriots of Fleet Street and the Strand are too eager for the "Late News" of the brazen-throated heralds of "Winners" to care much for Mr. George Harcourt's picture, which bears that title (201); indeed, the "Times" has told him "he had done better if he had forgotten the war altogether!" Mr. James Paterson sends "The German Fleet After Surrender, Firth of Forth, November 21, 1918" (325); Mr. W. L. Wyllie, "The German High Seas Fleet caged in Scapa Flow" (108), and Mr. Julius Olsson "A Lame Duck in the Channel" (649). Mr. John Bowie gives us good illustration of the famous "Scrap of Paper" interview (321). Mr. F. O. Salisbury sends a large group, showing "King Peter Retreating across the Albanian Mountains" in November and December, 1915 (393).

The subject pictures of interest are not numerous. Among the best are Mr. Anning Bell's "The Way from Calvary" (180). Whatever the grief of mother and child is, it is most pathetically rendered.

So is Mr. Frank Spenlove-Spenlove's "And Belgium Prayed" (357). Mr. Andrew C. Gow's "Refugees" (112) is a mournful epitome of suffering; and all sympathy will go out to the old woman and the young mother nursing her child. We are not greatly taken with the Hon. John Collier's "Myrrh, Aloes, and Cassia" (303). It is not a bad colour scheme, but the sensual life of the East is hardly the theme of sybaritism which attracts voluptuaries to-day. Of idealistic decorative figure studies we prefer Sir Edward Poynter's "Love Philtre" (154). There is plenty of good fun and fancy in Mr. Charles Sim's "And the Fairies Ran Away with Their Clothes" (27), though what the sprites are to do with the big hat in the foreground we do not know. We do not care much for "The Vase" (79). Mr. J. C. Dollman's "For He Believed in His God" (Dan. vi.) seems to embody a new idea of the "den" into which the prophet was cast, and though the text says he was "taken up" out of it, Mr. Dollman's conception of the abode of the lions seems a more likely one. Rather in too good condition, by the way, seem the animals, and hardly ready for the eager participation in the subsequent plentiful banquet afforded by the false accusers described in the narrative.

Among others, we can only mention the capital hunting picture of the new Associate, Mr. Alfred J. Munnings, "Drawing for an April Fox" (598). The horses and dogs are splendid. Of the comparatively little good new work visible this year we were rather taken with Miss Olver's "Tanya" (65), a brilliantly sketched fancy portrait of a girl in a red cloak. Among the water-colours some of the best are Mr. Walter Tyndale's "The Forage Bazaar, Cairo" (863) and Mr. Douglas Snowden's "Interior of St. Martin's, Ypres, 1914." Very picturesque are the grouping and the gables of Mr. C. Tattershall Dodd's "The Sundial, Corpus Christi College, Oxford" (687). Of the etchings, none will pass unnoticed Mr. Hedley Fitton's important plate of "The Canongate, Tolbooth, Edinburgh" (1271), or the exceedingly delicate needle-point study of "La Bibliothèque, Bruges" (1290), by Mr. Sidney Tashingham, with its clever rendering of florid detail.

THE SCULPTURE.

There is, unfortunately, little to say, about the sculpture. The placing of the equestrian statue of "H.M. the King of the Belgians" (1674) in the courtyard is doubtless a fitting tribute to the valour, and endurance, and loyalty of the subject, but Mr. Walter Winans and Mr. Alexander J. Leslie are a little unfortunate in that comparison thereof has followed so soon after that of Mr. Walter Baye's masterpiece of last year. The King is doubtless a good horseman, but his posture would, we fancy, be difficult on the fiery steed on which he is mounted. Mr. Paul R. Montford's group "Peace" (1496) is one of the best things shown. Sir George Frampton shows a "Sketch model for the statue of the late Marquess of Linlithgow, erected at Linlithgow" (1649). Sir W. Goscombe John sends a large sketch model, one-eighth full size, of the "War Memorial for Port Sunlight" (1499), and a "Memorial Tablet to the late Earl of Cromer" (1591), to be placed in Westminster Abbey. There is a passable bronze group "The Kiss" (1660), by Mr. Alfred Drury, and "An Adventure in Borrowed Plumes" (1653), by Mr. W. Robert Colton, the newly-elected Associate. Mr.

William McMillan, the winner of the first premium awarded in the War Medal competition, has a creditable relief, "The Refugees" (1937). Of the War Memorials it is the truest charity to say nothing, except that if they bear the stamp of approval of the Academicians who are ready to counsel the very numerous subscribers and committees charged with the infliction of the shoals of these things in store for us all over the country, we fear the kindly proffered help will not be of much advantage to anybody!

Our Illustrations.

WAR MEMORIAL AT GLOSSOP, DERBYSHIRE, TO LIEUT. THE HON. PHILIP G. J. F. HOWARD, WELSH GUARDS.

The obelisk was to be executed in local stone, with bronze cartouches and panels, and black marble inscription panels. The monument has been designed for Lord Howard of Glossop in memory of Lieut. the Hon. Philip Howard, killed in action. It is proposed to place it in the Market Place, opposite the Town Hall. The design and drawing are by Sir Reginald Blomfield, R.A., architect, of New Court, Temple, E.C., and the original, from whence our plate was taken, is now at the Royal Academy Exhibition. This design has now been altered.

PROPOSED ARCH OF REMEMBRANCE, ACTON.

The marginal notes on this sheet of sketches contain all the information needed by way of description of the illustration showing the design which was unanimously adopted by the Sites Subcommittee. As a shrine for the Roll of Honour this arch was planned to occupy a site adjacent to the Passmore Edwards Cottage Hospital, built twenty-one years ago in Gunnersbury Lane. It is proposed to enlarge that building, as the utilitarian part of the town's war memorial, but these additions and the exact form of the commemorative memorial will have to be determined by the amount of money collected; the estimated figures advertised are £20,000.

NEW OFFICE BUILDINGS FOR MESSRS. HOULDER BROTHERS AND CO., LTD., BUENOS AIRES.

The situation of the site of this building is in the heart of the commercial centre of the city, with frontages to three streets, viz.:—Calle Lavalle, Calle 25 de Mayo, and Calle Paseo de Julio. The ground floor will be built upon archways covering the pavement, similar to the treatment of the Ritz Hotel in London on the Piccadilly side. This part of the elevation will be entirely of granite, the iron structure generally in the bottom stage being faced with stone quarried in the Argentine, from the province of Cordoba. Above the first-floor balcony, which will also be of granite, the façade is to be of native brickwork, rendered with stucco imitating dressed stone work, a usual treatment in Buenos Aires. The cornice and entablature at the sixth-floor level will be cast in this same material. The eighth and ninth floors will be comprised of a mansard roof of iron framework and reinforced concrete, covered with slates and zinc flashings. This mansard is designed to be as vertical as possible on the central pavilion in order to ensure the greatest amount of floor space. The door and window architraves and the ornaments between the ground-floor windows and the first-floor balconies will be executed in marble, toning in colour with the grey

granite. Each entrance door will be closed by a bronze grille, and the window frames will be also of bronze. The drawing here reproduced is in this year's Royal Academy Exhibition. Mr. Robert W. Prentice is the architect.

THE FUNDAMENTAL PRINCIPLES OF ARCHITECTURE.*

The first necessity for anyone undertaking to prepare themselves for the practice is to realise that architecture is a branch of engineering and requires the kind of preparation that any engineering undertaking requires.

Work in any field done with high degree of perfection becomes a work of art.

The civilisation of a people is expressed in any of its arts, but recorded most permanently, because of the nature of the medium, in its structures. Comprehension of this fact leads us to realise the absurdity of expression of amazement at the beauty of the architecture of barbarous peoples. The fact of the beauty is unmistakable evidence of their divination, as the ugliness of our own works is unmistakable evidence of our own barbarity.

The civilisation of peoples as recorded in books may be entirely misleading, for words can be made strangely to distort facts. So much so that at times we are tempted to refuse to allow our children to read records if we are eager that they should be fed on truth instead of lies, but in buildings and communities the actual facts are unescapably set forth, and try as we may to conceal ourselves behind false fronts, the rear and interior of buildings are as visible to the naked eyes as the fronts, and tell the tale of sham and pretence. Just so in spite of the struggle of our architects as a whole to conform to the superficial forms of Classic buildings, no one, walking down our streets, would for a moment be led by the street as a whole or by any building to think he was in Greece. It is merely plain as the nose on your face that here is a people who were aping the Greeks or Goths, as the case may be.

No one would for a moment call any of the buildings Classic. To any observer of the future they would be nineteenth or twentieth century architecture, not architecture of the fifth century B.C., and would be stamped as superficial, insincere, and without significance.

Style is, in fact, a matter with which an architect has no concern whatever. It is a part of the province of the historian, who, looking back into the past, can see relationships in work done at certain times under certain conditions. If the builders are concentrated on solving the problems of their times, relationships will be certain to be evident. An architect should not only refuse to accept superficial prescriptions of appearance, but should refuse to think of externals first. Thinking in three dimensions requires more of an effort than thinking in two, but it must be made, and the consideration of purpose and form must be simultaneous. Beauty will be the result of the perfect solution of the problem.

We find that this building, which at a glance appears to be constructed of stone, is not stone at all, being merely surfaced over with plaster, shaped to deceive the public into believing that it is stone. This alone is enough to condemn the building. If it was not necessary to build it of stone, it is not necessary that it should be made to appear so. There is no material which, if used properly and honestly, is not beautiful, whether it be concrete or bamboo. If it does the work required of it there need be no deception practised, and the deception can lead to nothing but ugliness.

Drawing-board architecture we commonly call this method, and only achieving its purpose clumsily and inefficiently; the location necessarily obscuring the light from many of

*Extracts from a paper read before the members of the V.A.S.S. at the rooms of the Royal Victorian Institute of Architects at Melbourne at a recent monthly meeting by Mrs. Walter B. Griffin.

the rooms. It is not fair to call such a building an example of architecture. It is an example of sham, extravagance and incompetence, if not of actual dishonesty, and if an exhibition of such characteristics can be beautiful, beauty is surely nothing to strive for. However, such buildings probably never cause a thrill of admiration, nor even attract the attention or arouse the interest of a dozen people in the community, though architects go about complimenting each other on such perfunctory performances, and the architects as individuals and collectively spend much time and effort in condemning and spreading very widely their condemnations of any building which breaks away from the artificial restrictions the erudite have laid down. An architect who designs, independently of traditions, need never fear the national judgments of the laity, but only the bitter attacks of a class trying to establish its superiority.

Architecture, in the general conception of it at the present time, is a term applied to erection of buildings. The limitation is an artificial one, and we find, in fact, that the term is used technically in other fields, as naval architecture, and so forth. It is, in fact, a department of civil engineering, civil engineering being that science which deals with construction as opposed to military engineering, which devotes itself to destruction; and the sooner we realise that architecture is engineering the better, as a lack of that comprehension sends our students far afield when they undertake to fit themselves for its practice, the consequence of which is that the profession of architecture is not at present respected in our communities, nor is it on the whole deserving of respect.

Great achievement is simply being dependent on the full use of two faculties directed in whatever line circumstances surrounding the individual or his own choice may determine.

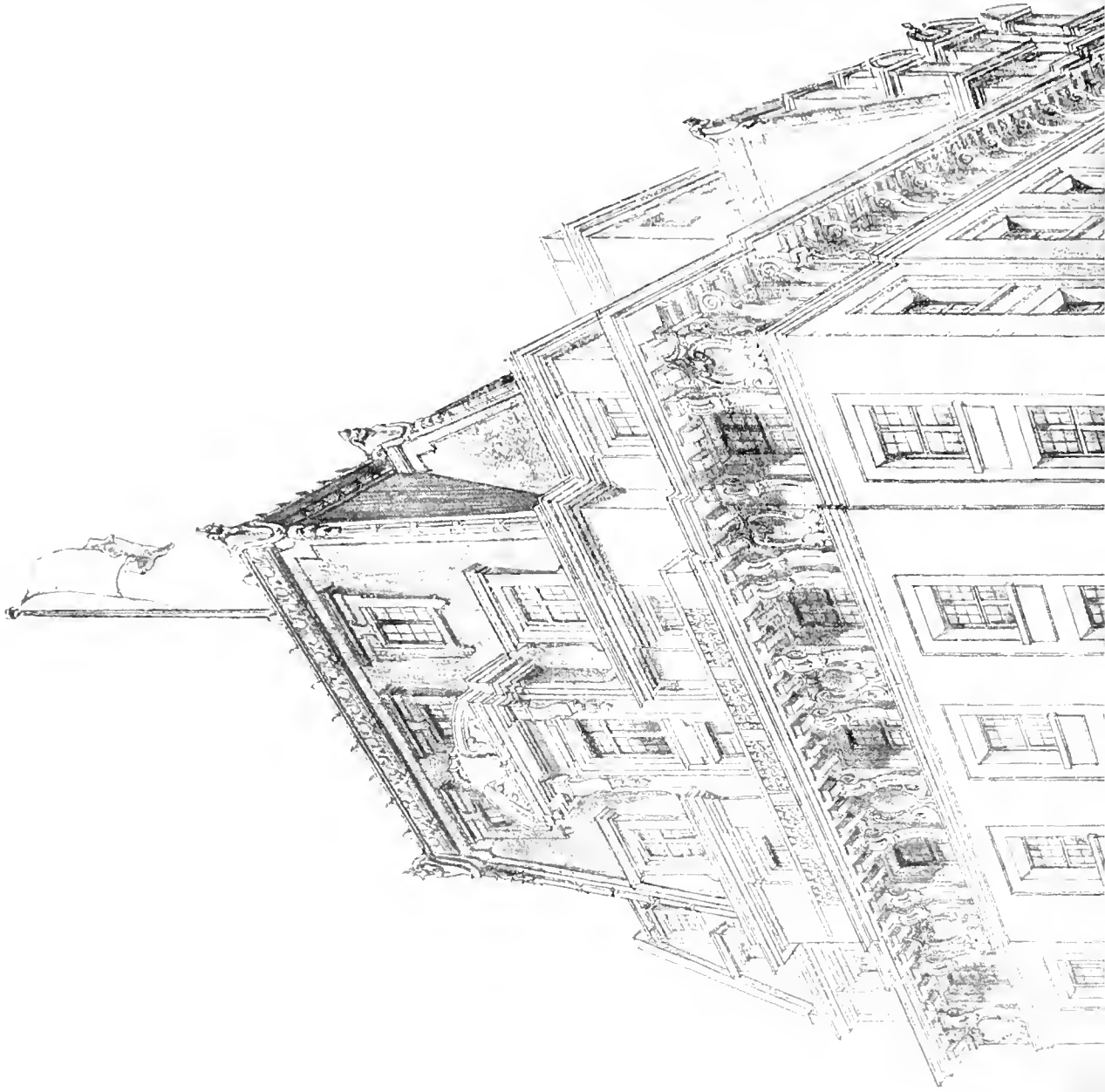
The tendency to monopolise extends even into the professions. Sydney Webb, in commenting on this fact says that the adoption of the profession of architecture is practically limited to 10 per cent. of the people, and they render service to no more than 10 per cent. of the people. The absurdity of this is apparent when we realise that 100 per cent. of the community require buildings of some sort or other, though that was not the case in the time of Rome, when no provision was made for the habitation of the lowest classes, who, when not on active service, skulked in cellars or holes or gutters, which condition will undoubtedly recur if we continue to approve and develop monopolies as we are doing at present.

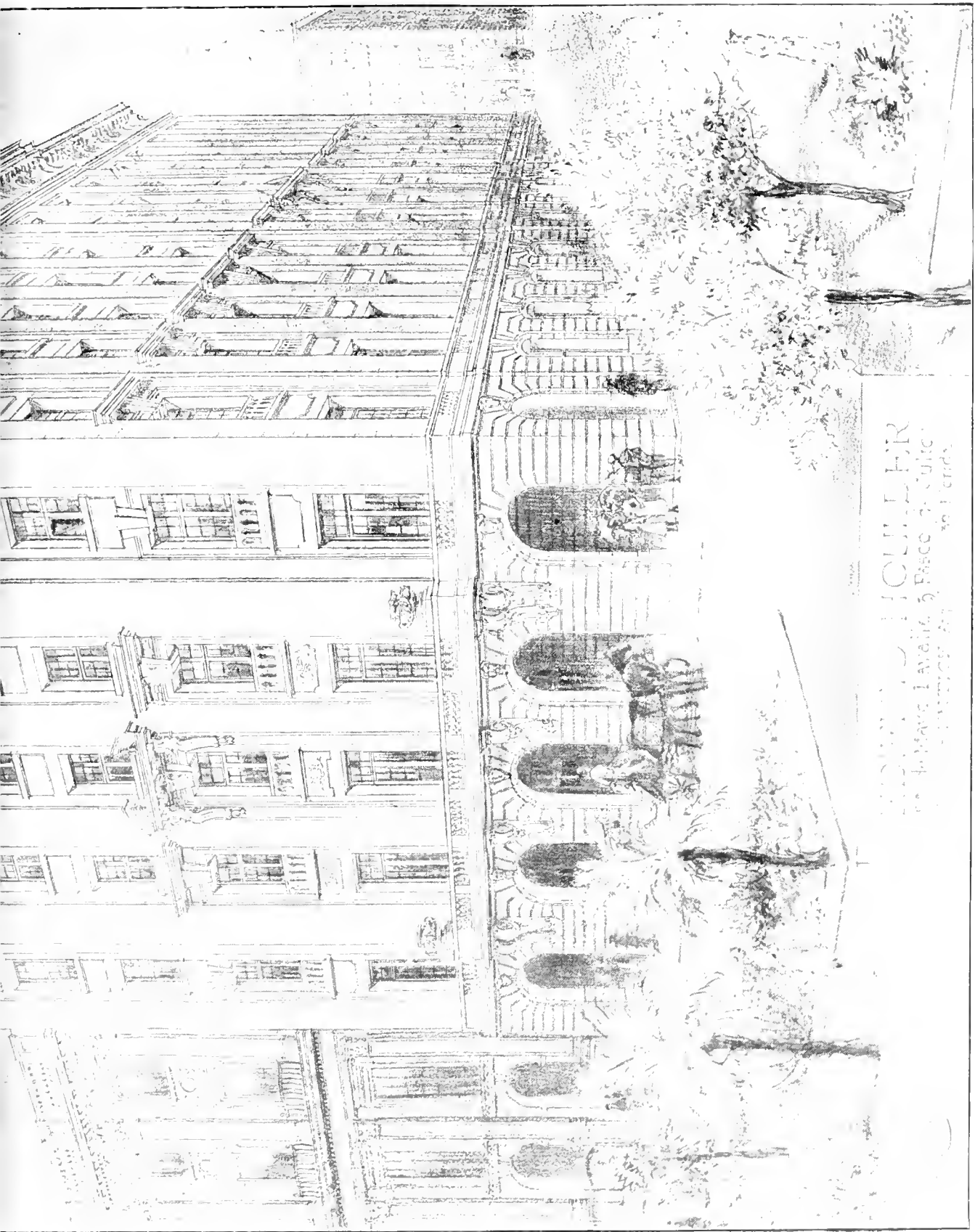
If an architect is given a house or a school to do, common honesty would suggest that his first duty was to fulfil the requirements of the problem given him and the needs of and advantages to be given to his client. But, no, you must live in a dungeon, with a few holes for windows, because your ancestors did. That they lived in a region of cold, in a time when the problems of artificial heating had not been solved, and you are living in a land of sunshine, makes no difference. It is considered immoral to solve your own problem your own way. Having built your house you can afterwards adjust yourself to living as best you can. Your bedrooms you can leave empty and sleep in excrescences, tacked on some old way; but to build a house without the old-fashioned dungeon of a bedroom would be a thing to shock the community. Since the Greek temple or the Gothic cathedral are the ideal achievements in architecture, your school must first of all be at least recognisably allied in form and detail to these. That the Greeks would not be so absurd as to make their domestic buildings like their temples is no matter. Our schools don't go so far as to show us their minor buildings. It is enough if we pack into our heads the highest forms. In our work, of course, we must be satisfied with nothing but the ideal. The consequence is that huge columns make proper lighting impossible, stairways zig-zag across fenestration, the buildings where children spend so many hours are gloomy and oppressive.

(Continued on page 297.)



THE BUILDING NEWS, MAY 14, 1919.





HOULDER
Buenos Aires, 3 Pasco y Suñer
1910

NEW OFFICE BUILDINGS, BUENOS AYRES, FOR MESSRS. HOULDER BROS., LTD.
Captain ROBERT R. PRENTICE, Architect.



AN ARCH OF REMEMBRANCE, ACTON WAR

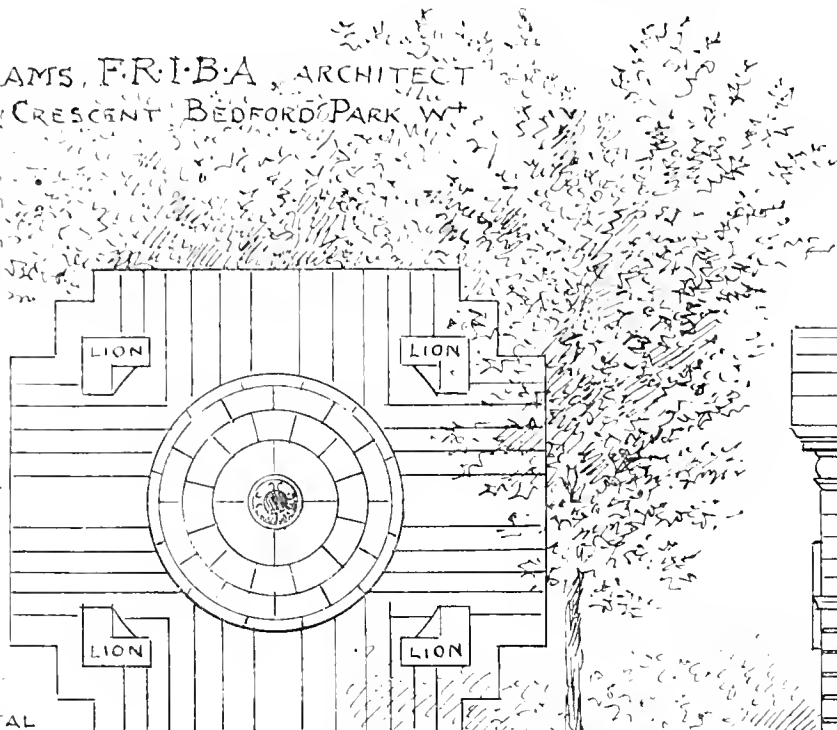
MAURICE B. ADAMS, F.R.I.B.A., ARCHITECT
1 MARLBOROUGH CRESCENT, BEDFORD PARK, W.



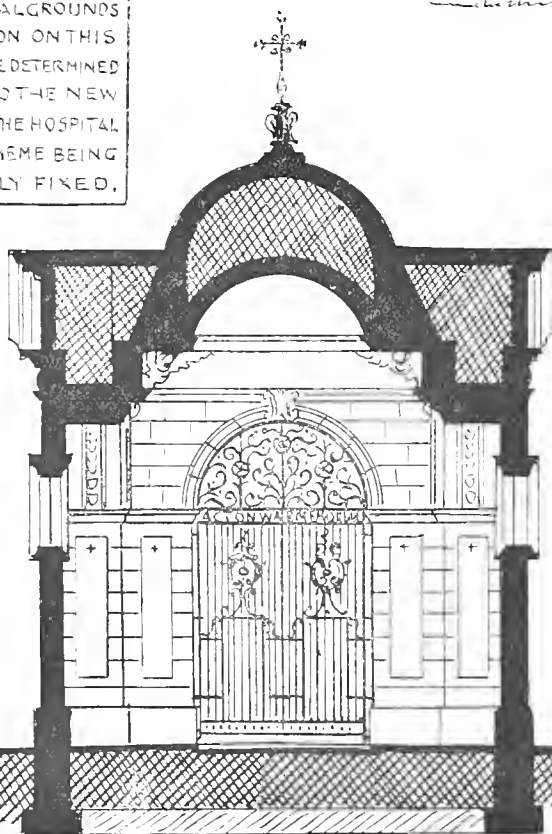
ANGEL
OF
HOPE

FIGURE TOWARDS HOSPITAL

THIS ARCH WILL STAND IN GUNNERSBURY LANE FLUSH WITH THE NEW FRONTAGE LINE OF THE HOSPITAL GROUNDS AND ITS POSITION ON THIS PROPERTY TO BE DETERMINED IN RELATION TO THE NEW BUILDINGS OF THE HOSPITAL THE WHOLE SCHEME BEING CORRELATIVELY FIXED.



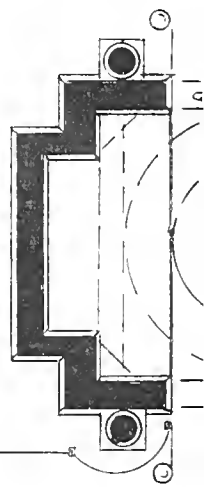
PLAN OF ROOF



TO PROVIDE SPACE FOR THE ROLL OF HONOUR OF ONE THOUSAND NAMES OF ACTON MEN WHO LOST THEIR LIVES FIGHTING FOR KING AND COUNTRY BOTH THE SIDE ALCOVES INSIDE THE ARCH OF REMEMBRANCE ARE REQUIRED AND IN THIS SPACE TWENTY FOUR SLABS WILL BE OCCUPIED WITH INCH LETTERS PERMANENTLY INCISED

A —

HOSPITAL



INSCRIPTION PANELS SHOWN

MARCH 17, 1919

SECTION A-A



HOUSING ROLL OF HONOUR . AD 1919 . MEMORIAL MONUMENT .

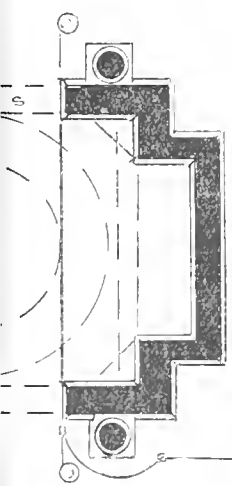


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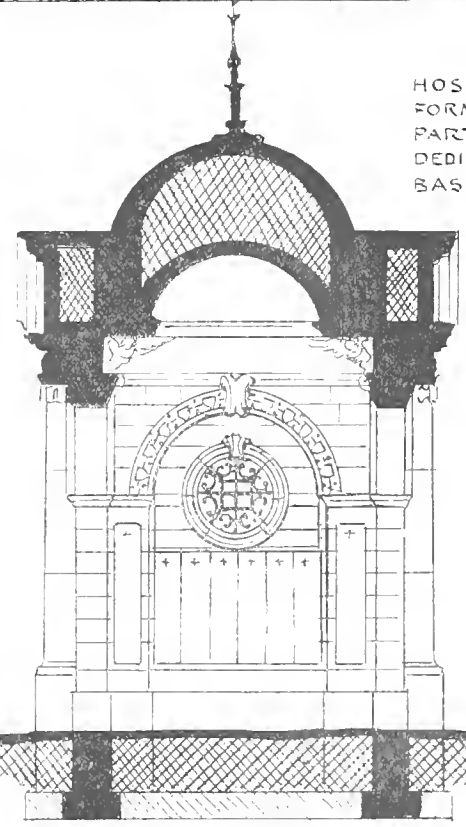
SIDE

THE HERALDIC COLOURED AND CARVED BADGES OF THE REGIMENTS & SHIPS REPRESENTED ARE RANGED ROUND THE SIDE ARCHES AND ALSO ON THE UNDERSIDE OF THE ARCHED HEAD OF EACH ALCOVE. THE GATES OF THE HOSPITAL IN REAR ARCH ONLY THE WORDS "ACTON WAR MEMORIAL" ARE PART OF ARCH GRILLE

HOSPITAL EXTENSION FORMS AN ESSENTIAL PART OF THE SCHEME DEDICATION STONE AT BASE IN FRONT COLUMN



CARDENS



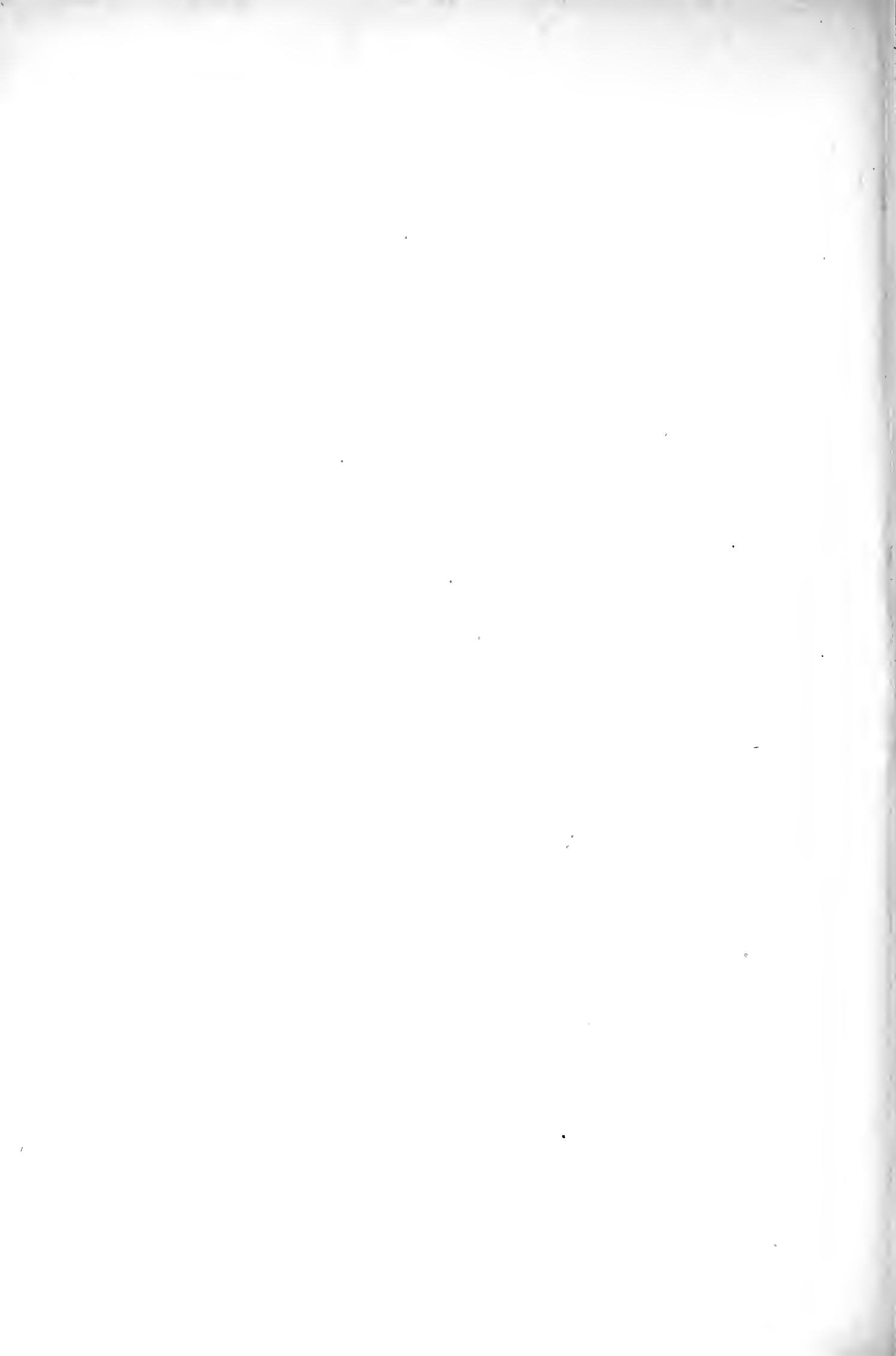
OTHER SECTIONS MARKED BY +

OF FEET

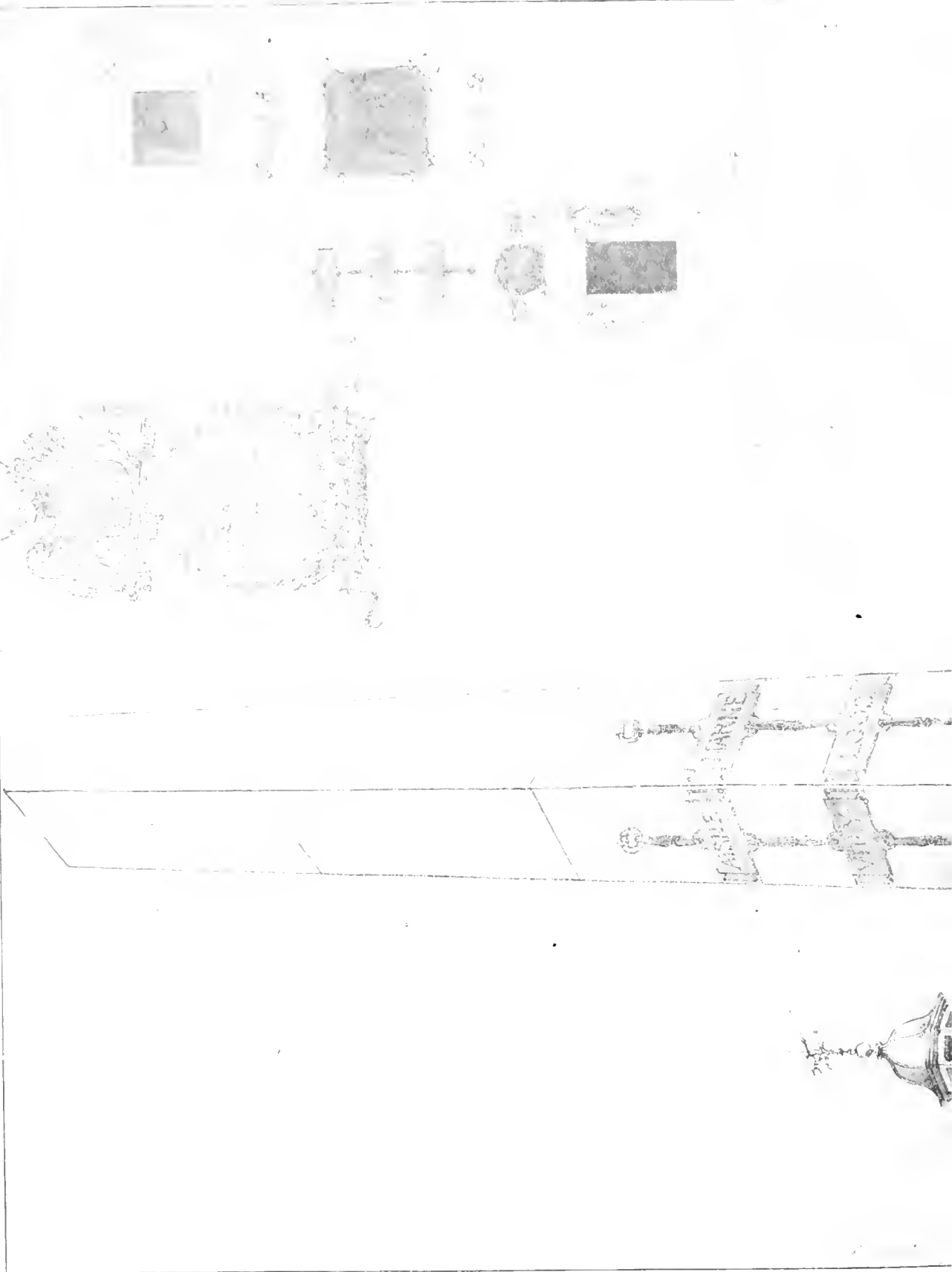


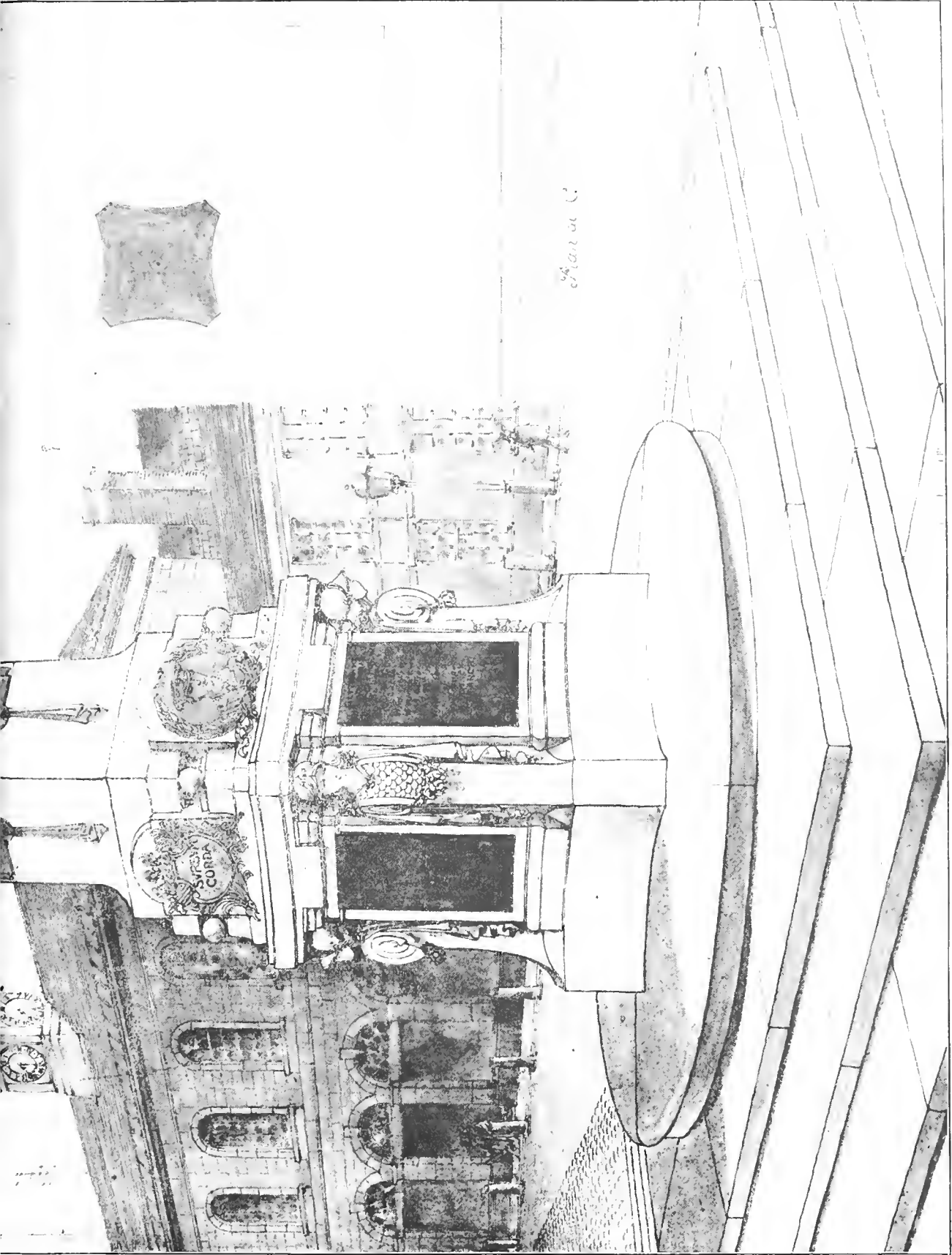
SECTION B-B

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284 ✓





WAR MEMORIAL AT GLOSSOP, DERBYSHIRE, to Lieut. the Hon. PHILIP G. J. F. HOWARD, Welch Guards,
SIR REGINALD BLOMFIELD, R.A., M.A., Architect.

(Continued from page 284.)

We do not say that students should not study the work of their predecessors. A course labelled "Study of Former Types of Building," with students told outright to go to the libraries and draw and combine, so as to familiarise themselves with many beautiful forms as training to the eye and hand, would be of great value, and would not bar out the honest student from free and full use of the libraries. But such a course has nothing whatever to do with design. It is of the utmost importance that students should be taught design, of which they get not the slightest hint in the schools.

Now, architecture is that branch of engineering which undertakes to provide shelter for the various human undertakings. To practise it requires very broad and very thorough education. It requires the most thorough education our communities can provide in the humanities so that we may be able to comprehend and analyse the varied human necessities. This education must include languages, music, history, economics, natural, social, and political sciences.

It reduces technical education, which shall give power to use and develop materials to fit a great variety of purposes. This means a comprehensive knowledge of mathematics, physics, and chemistry.

It is high time we worked out some orderliness in this great field of human endeavour, and I am here to-night to urge you all to help to the extent of your capacity in this very necessary work.

Mr. William Lucas (F.), in moving a vote of thanks at the request of the President of the V.A.S.S., said the address of Mrs. Griffin was packed full of matter, was lucidly presented, and deserving of most careful thought. There were undoubtedly a few main lines for a student to determine for himself early in his career in order to form a working basis. Was architecture a branch of engineering, as laid down by the lecturer, or an art as distinct as that of engineering? Did architectural design depend upon knowledge of its structural material? In his opinion, architecture was not a branch of engineering, and successful designing therein was, in its essence, irrespective of material. The lecturer's contention for the three dimensions rather than the two he strongly supported; and would also similarly stress that architecture was essentially plan, and elevation was very subsidiary thereto.

In the mental process of each architect there was what might be termed an immutable diagram—a line, either horizontal or vertical; or a figure, either square, triangular, polygonal, or circular—and obedience to that specific diagram was of substantial assistance in designing. As all architectural work consisted both in plan and elevation of the expression of alternating solids and voids, it was well to determine which class was to have the fuller recognition, and therefore the more careful treatment; and since a very small proportion of void (if wisely disposed) was sufficient for light and ventilation in such a climate as Australia, the item of fenestration ought not to be embarrassing. The extent to which reverence for past achievement swayed the mind, linked with fidelity to those forms and features which appealed to the individual as peculiarly beautiful—irrespective of their use or disuse, hitherto—would be bound to substantially influence the architecture of the future, as had been the case in the past.

The London County Council have decided to start with the clearance of the notorious Brady Street slum area, which was recently visited by the Queen.

A bequest of £5,000 by Dr. J. L. M. Finch, for the endowment of a university for Leicester, is announced. There is, however, no scheme for a separate university for Leicester, but it is proposed to build a university college as part of the East Midland University scheme. Dr. Finch's bequest follows a gift for that purpose by Mr. Fielding Johnson, senr., of the site and buildings of the 5th Northern General Military Hospital. The value of the site and buildings is between £60,000 and £70,000. Of the £250,000 required nearly £100,000 has been secured.

FORMS OF CONTRACT FOR BUILDING WORKS.

By W. E. H. BURTON, Assoc. M. Inst. C. E.,
Engineer to the West Riding Asylums Board,
Wakefield.*

In the first place it may be taken for granted that the pernicious system of inviting tenders solely upon plans and specifications has disappeared, for no self-respecting contractor in pre-war days would give a tender under such circumstances. It was at one time argued that supplying quantities added to the cost of work, but if that work is to be properly executed their provision is absolutely essential and correct in principle. A contractor had perforce to take out some rough form of quantities in order to frame his estimate, and would assuredly include the cost in his price. The system was little better than guess-work, particularly when only cubing was resorted to, and therefore productive of much scamped work, as contractors endeavoured to recoup themselves for losses incurred through errors in estimating.

EXISTING FORMS OF CONTRACT.

Leaving this method out of the question, the forms of contract hitherto in vogue have been either:—

1. A contract for a lump sum based on a schedule of quantities which form no part of the contract.

2. A contract based on a schedule of quantities which forms part of the contract and the work measured up on completion.

The former system has, up to the present, been followed by the majority of local government authorities. It is usually stated in the general conditions of contract that the quantities are not guaranteed, and that the contractor has to take the responsibility for their correctness, which, in a work of some magnitude, involves him in no little trouble in checking. Under this form of contract a contractor can legally refuse to allow his priced quantities to be consulted during the carrying out of the work; but as a rule any addition to or deduction from the work shown on the drawing or mentioned in the specification is measured and valued upon the prices therein given, though no allowance is made for items omitted or any shortage of measurement. It is claimed that by this method the final cost of a building is fixed in advance; but it is extremely doubtful whether such a contract would be legally upheld could it be proved that the work had been seriously under-measured, while on the other hand a contractor is not likely to draw attention to any over-measurement, and therefore the system is satisfactory to neither party.

It is also impossible to defend the absurd attitude of a surveyor in disclaiming responsibility for the accuracy of quantities he has himself prepared. A contract of this nature affords no provision for changes in the cost of labour or materials during the progress of the work, and it is questionable whether any contractor would to-day enter into it.

The second method is quite fair to both parties, for only work actually executed is paid for, and the contractor is recompensed for everything he carries out. The final cost of the work is also likely to work out less than by the previous method, owing to the absence of sporting items for which a contractor has to cover himself. When quantities are so prepared that labour items are billed apart from those of materials for separate pricing, facilities are provided whereby adjustments can easily be effected in the event of any extraordinary change in the labour market.

THE PRIME COST BASIS.

There are other forms of contract founded upon a prime cost basis, and which, although not new, have come into more extensive use consequent upon the exceptional conditions prevailing during the period of the war viz:—

3. A contract upon the cost price of executing the work plus a percentage as profit.

* Paper read at a North-Eastern District meeting of the Institution of Municipal and County Engineers held at York.

4. A contract upon the cost price of executing the work plus a fixed lump sum as the contractor's profit.

5. A contract upon the cost price of executing the work plus a lump sum carrying a bonus or penalty according as to whether the contractor effects a saving on or exceeds the estimated cost and time for completion.

One advantage common to the above methods is the saving of time that can be effected in being able to make a start with the erection of a building before the whole of the working drawings and details are complete, which in work of urgency may be an important factor. The work is also likely to be carried out at less cost, for they eliminate the hazards a contractor has to face appertaining to fluctuations in rates of wages, cost of materials, and other contingent risks against which (though they did not necessarily materialise) he has to cover himself.

It may be argued that No. 3 system places too much power in the hands of the contractor, as it offers him no incentive to reduce the cost of the work, but has rather an opposite tendency. With the selection of a reputable contractor such arguments would be groundless, but probably in the majority of cases it will be found more satisfactory to adopt a fourth method which also tends to a more expeditious carrying out of the work.

More progressive firms of contractors have for many years advocated contracts upon the basis of the fifth method, though it has not, as yet, been largely put into practice in this country. Under this system the architect estimates the cost and time of completion of the work. Should the contractor complete the work below this estimated cost he receives 10 per cent. of the amount of the saving, in addition to his lump sum profit; but should, on the other hand, he exceed this sum, 10 per cent. of the excess is deducted from his profit. If the time of completion is anticipated, the fixed profit is increased by a pre-arranged amount for each week short of the stipulated time, while for each week in arrears the profit is correspondingly reduced. The conditions are therefore more favourable than in any of the previous methods for securing the completion of a contract in minimum time and at minimum expense, and it is somewhat remarkable that the form has not been more generally adopted.

Such are, in brief, the chief forms of contract in vogue for building works to-day. A business man will at once appreciate the advantages offered by any of the three last methods, particularly the last, and not hesitate to avail himself of their provisions; but, unfortunately, a local authority is not so favourably situated. It is claimed, and rightly so, that all contracts entered into by local authorities shall be free from favour and open to competition, and hence difficulties arise in the application of the latter methods. With such forms of contract the best policy undoubtedly is to select an experienced contractor of proved business acumen and well supplied with plant, rather than to invite tenders upon what would probably be an arbitrary basis, and select the lowest bidder.

Where competitive tendering cannot be dispensed with, the adoption of Form No. 2 is advisable. In that case the whole of the plans and detail drawings should be finished, and complete bills of quantities prepared in order to obtain satisfactory tenders.

LOCAL AUTHORITIES' CONTRACTS.

In works carried out by local authorities, it is frequently a much-debated point whether the contract shall be let as a whole to a single contractor, who would be responsible for all the trades, or to have a separate contractor for each. The latter procedure generally appears at first sight to be more advantageous, especially if the acceptance of the lowest tender in each trade is made a hard-and-fast rule. Such a course, however, frequently works out the very opposite in practice. A contractor of standing, in submitting a whole-trade tender, naturally selects sub-contractors of integrity to work under him, and from his superior insight is able to eliminate those unfitted to carry out work of the particular class required.

It is most necessary, therefore, in accepting separate trade tenders, to subject them to a searching scrutiny, and that done, it is advisable to place the whole under the charge of one of the contractors, and make him responsible for the complete control, subject to the payment of an additional percentage upon the other tenders. To bring five or six contractors upon a job, each independent of the other, is to create friction and to involve the clerk of works' time being taken up in adjudicating upon the various petty troubles which arise between them instead of interpreting the plans and specifications. With a whole-trade contract, the progress of the work is considerably expedited, and the saving of time in completion will generally outweigh any difference in price a separate trade contract appears to offer.

Under the peculiar conditions in which the vast amount of building work will have to be done in the various housing schemes about to be entered upon, it is doubtful whether a more satisfactory form of contract than No. 5 will be evolved. Given a carefully drawn up contract, in which all that it is to include is clearly defined, this method, coupled with the most efficient organisation as to costing, etc., should result in the expeditions executing of the work at a fair cost, and ensure the contractor a profit proportionate to his dexterity.

TARRED PAVING BRICKS FOR FACTORY FLOORS.

Apart from the cost of construction, the question of floor surface in a factory may be in some measure bound up with the quality of the produce. Wood flooring has become expensive. Moreover, wood is not now readily obtainable. Substitute material has had, therefore, to be sought after. One such substitute has, we are informed, been found in specially made bricks and tile impregnated and coated with tar. A suitable material for the bricks is hard-burned clinker. This must be perfectly dry, or the finished bricks must be dried before submitting them to the process of impregnation. This process is most effectively carried out under pressure in a suitable containing vessel holding a large number of bricks. Where air-pressure of several atmospheres is not readily obtainable, it is sufficient to soak the bricks in a tar bath for at least 72 hours. A good mixture is four parts of creosote and one part of very fluid tar. Where the former material is not to hand, tar alone may be used. Experience has shown that low-burned bricks are in several respects inferior to hand-burned clinker bricks.

These flooring bricks and tiles should be laid upon a bed of silicious sand, or, for cheapness, sifted ashes. When, however, a firmer and more lasting flooring is required, the bed may, as in the case of wood-paving, be of concrete. Good results have accrued from sifting hydraulic lime, one kilogram to the square metre of floor-space, over the floor and then flooding the surface with hot tar. The lime combines with the tar to make a continuous waterproof surface that is practically noiseless. Hard and unelastic articles, such as cast-iron parts of machines, dropped on to such a flooring are less likely to be broken than when allowed to fall on concrete.

Another advantage is a hygienic one, namely, no appreciable amount of dust is generated to vitiate the atmosphere.—*Zeit schrift für angewandte Chemie*, Feb. 18, 1919.

The proposed building of a new church of St. Columba, to take the place of the present temporary church, at a probable cost of £15,000, was announced at the Easter Vestry meeting of St. Andrew's Church, Drypool, East Hull.

To give guidance and concrete suggestions to those concerned, the Scottish Advisory Committee on War Memorials proposes to organise an exhibition, to be held in July within the National Gallery, Edinburgh, in rooms lent for the purpose by the Board of Trustees. The exhibition will consist of two sections, one of representative examples of memorials erected in the past or in recent times, and the other of designs and models for new work to be contributed by artists in all parts of Scotland.

MESSRS. ROBERT INGHAM CLARK AND CO.'S HUNDRED GUINEA TRADE MARK COMPETITION.

An interesting gathering of journalists and others concerned assembled at the works of Messrs. Robert Ingham Clark, West Ham Abbey, on Monday, to inspect the designs submitted in competition for the new rendering of the trade mark "Britannia," so familiar to all who know and appreciate the varied products of this the leading firm, noted for its eminence here, and by the many users of its specialities and its wide ramifications in France, the United States, Australia, and other centres familiarised by its enterprise and the standard qualities thereof.

Mr. F. Walter Fell Clark, the managing director of the firm, and his son, Mr. Robert Clark, who has joined the firm after his release from active service in the field in France, who had only returned from a week's stay in France and a visit to the war-blasted scenes thereof, the night before, in order to receive them, welcomed their guests, and the opportunity was afforded of the inspection of the designs, many of which attracted eulogistic notice. The successful competitor is No. 6, submitted by Mr. J. Newbould Sanders, of 7, Cromwell Road, Lancaster.

At the luncheon which followed, at which Mr. F. Walter Fell Clark presided, he stated that he thought the general approval of the choice of the selected design was manifest, and he thought the impression would be confirmed when he told them that while their offer had evoked 400 applications for conditions of the competition and the receipt of about 260 designs, on the committee of selection the voting was 50 in favour of the premiated design to 26 for the next. The satisfactory result of the competition was undoubtedly due to the wide publicity the press had given it. In publicity by advertising the firm had always believed, and still believed. Perhaps that element of success, provided the thing advertised was a good one, was, he thought, more universally recognised in the United States than here. He had learned during a recent visit to America that as much as £1,500 had been paid to a leading New York journal, and he had no doubt it was worth it, and that his own firm would not hesitate to follow on the same lines to secure continuous and, as he hoped, still further wide extensions as had marked its career.

Mr. Herbert W. Wills, F.R.I.B.A., the editor of the *Architect*, who was invited by the chairman to respond for the Press, insisted that it was the modesty of the chairman that had failed to appreciate the fact that it was the widely known standing and eminence of his firm that had secured the numerous and effective responses to its invitation, and that the Press had full reason to be grateful for its numerous and well-placed advertisements, and assured him that each member thereof would be delighted to receive that £1,500 advertisement when it came along, a declaration which evoked evidently appreciative laughter all round the table.

The company then adjourned to view the works, the numerous extensions of which evidently surprised many whose last visits had not been recent, and a very pleasant gathering separated, many expressing their gratification at the retention of the rural amenities of the place, still pleasant in the midst of the vast aggregation of factories and workshops in the district, and reminiscent of the domestic comfort of the home—as it then was—of the founder of the great business which his enterprise and that of his descendants and successors have developed so successfully.

Captain L. St. G. Wilkinson, M.C., Huddersfield, was last Wednesday appointed borough surveyor of Crewe, in succession to the late Mr. George Eaton Shore. The salary is £400 a year. There were 112 applicants.

The Rochdale Housing Committee have decided to seek sanction to increase the municipal houses to be built to 2,000. Twelve months last October the Council agreed to plans for 250 houses as an experiment. Last year it was found desirable to increase the number to a thousand. Now that figure is proposed to be doubled.

THE BRITISH SCHOOL AT ROME.

NOTICE OF RESUMPTION OF ROME SCHOLARSHIP COMPETITIONS.

The open examinations for the Rome Scholarships in architecture, sculpture, and decorative painting (offered by the Commissioners for the Exhibition of 1851), and for the Henry Jarvis Studentship in architecture (offered by the Royal Institute of British Architects), due to be held in 1915, but postponed on account of the war, will be resumed in 1920 under the direction of the Faculties of Art of the British School at Rome.

The age limit for the 1920 competitions will be increased to 35 years. The last day for submitting work for the open examinations will be January 31, 1920.

The Rome Scholarships, value £250 per annum and tenable for three years, are open to British-born subjects of either sex. The Jarvis Studentship, value £200 per annum and tenable for two years, is limited to students or associates of the Royal Institute of British Architects competing for the Rome Scholarship in architecture.

The Commissioners for the Exhibition of 1851 have undertaken to award, on the recommendation of the Faculties of Art, additional Travelling Studentships, value £100, for meritorious work done in the final competitions for their scholarships in 1920.

Special attention should be given to the fact that the value of the scholarships has been increased from £200 to £250 per annum, that the age limit for the next competition in 1920 will be 35, and that additional prizes in the form of Travelling Studentships will be awarded on the recommendation of the Faculties of Art for meritorious work done in the final competitions.

Particulars regarding the competitions may be had on application to Mr. Evelyn Shaw, Hon. General Secretary, Office of the British School at Rome, 54, Victoria Street, London, S.W.1.

LEGAL INTELLIGENCE.

HEAVY BUILDING FAILURE.—Last Wednesday, at the London Bankruptcy Court, an application for an order of discharge was made to Mr. Registrar Hope on behalf of Mr. Henry Cresswell Foulkes, builder, Finsbury Pavement House, E.C. Mr. D. Williams, Official Receiver, reported that the bankrupt failed in June, 1908, returning his unsecured liabilities at £10,708, but so far as he (the Official Receiver) could judge they exceeded £400,000, while the assets, valued by the applicant at £10,313, had realised only £158. Between 1875 and May, 1903, the bankrupt erected over a thousand dwelling-houses and shops in the neighbourhood of London, and formed two companies to acquire them. He attributed his insolvency to the failure of the chief of those companies and to depreciation in the value of house properties. The application for discharge was opposed by the Official Receiver on various grounds, including that of bringing on the bankruptcy by rash and hazardous speculations, and it was further reported that the bankrupt had lost £35,000 on the purchase of shares and by "differences" on stock and share transactions. The Registrar, suspending the discharge for two years, remarked that having regard to the fact that the bankrupt embarked upon the erection of a large number of houses with only a capital of £100, his building operations were not only rash and hazardous, but disastrous speculations.

LORD FURNESS MEMORIAL CHURCH.—Armitage and Hodgson v. Lady Janie Furness.—Judgment was given, with costs for the defendant, Lady Janie Furness, of Grantley Hall, Ripon, in an action brought against her by Messrs. Armitage and Hodgson, builders, Leeds, by Mr. Justice Lawrence, at Leeds Assizes, last Friday. For the plaintiffs it was stated that the contract price for the church was £8,080, but as the work proceeded, and wartime prices of labour and material increased, an assurance was given that Lady Furness would do what was reasonable to complete it. The extra cost was stated to have been £1,684, and the plaintiffs thought they were entitled to half that sum. For the defence it was stated that no promise of increased remuneration had been made.

Mr. Alexander Inglis, Hawick, has been appointed architect for the Selkirk housing scheme.

COMPETITIONS.

DESIGN OF THE BRITISH WAR MEDAL.—In response to invitations, designs were submitted by fifty-one artists, and the works of the following have been judged to be the three best in order of merit:—(I.) Mr. William McMillan, 14A, Cheyne Row, Chelsea; (II.) Mr. Charles Wheeler, 2, Justice Walk Studios, Chelsea; (III.) Mr. C. L. G. Doman, 18, Bonneville Road, Clapham Park. These three have been awarded monetary prizes, the first prize being £500, the second £150, and the third £75. Mr. McMillan's design will be the one adopted for the reverse of the medal. The design represents St. George on horseback trampling on the Prussian shield. The author is a native of Aberdeen. When war broke out he joined the Oxford and Buckinghamshire Light Infantry, and served in the Ypres salient in 1915, being eventually discharged with shell-shock, from which, however, he has quite recovered. Some years ago he visited Canada at the invitation of the architect to the Government of Saskatchewan, and there designed a pediment, 70 ft. long, for the Parliament building at Regina. Two of his statuettes of soldiers are exhibited at the War Museum, and this year he has a relief entitled "Refugees" (No. 1537) in the Royal Academy.

REGINA WAR MEMORIAL.—Further details of the competition for the plans of the proposed war memorial museum at Regina are available. Mr. Septimus Warwick, architect, Montreal, and Professor R. Traquair, professor of architecture at McGill University, have been appointed assessors in the competition. Among the architects invited to compete are Brown and Vallance, E. and W. S. Maxwell, and Nobbs and Hyde, all of Montreal. Unsuccessful competitors will receive an honorarium of \$1,000 each. All drawings are to be delivered to the Deputy Minister of Public Works on or before July 7, and the assessors will come to a decision within 21 days of that time.

RUISLIP HOUSING COMPETITION.—The R.I.B.A. Competitions Committee request architects who have been invited to compete in the above competition to withhold work upon their designs until the conditions have been brought into conformity with the R.I.B.A. Regulations for Architectural Competitions.

RUISLIP HOUSING COMPETITION.—Members of the Society of Architects are requested not to take part in this competition or to withhold their designs until they are notified that the conditions have been amended to conform to the regulations adopted by the society.

Our Office Table.

A special general meeting of the Royal Institute of British Architects, held at the Institute offices in Conduit Street last Monday night, passed by a large majority a resolution the purport of which is to increase architects' professional charges throughout the kingdom from 5 per cent. to 6 per cent. on contract amounts. The increase is to come into effect forthwith. A motion to suspend it for a year was lost by only two votes. The meeting, which was presided over by Mr. Henry T. Hare, President of the Institute, was fully attended. It is understood that the resolution, which had been approved by the General Council, was supported with practical unanimity by affiliated bodies in the provinces.

As a memorial of the men of Dorset who have fallen in the war, Major Frederick Wingfield Digby, of Sherborne Castle, proposes to restore to the Abbey Church for use in daily worship the 13th-century Lady Chapel and the 15th-century Bowe Chapel. They were originally additions to Sherborne Abbey, but from 1561 to 1860 formed the house of the headmasters of Sherborne School. The interior will be restored to its original state by the removal of floors, but

the picturesque Tudor exterior will be left untouched. Mr. Caröe will be the architect in charge of the work of restoration. The chapels, it may be added, were bought by the late Mr. G. Wingfield Digby with the intention of carrying out the restoration which is now proposed. It is hoped that the county will support the establishment of a memorial in what was once its cathedral church. The Rev. S. Wingfield Digby, Vicar of Sherborne, or Mr. A. F. Grimley, honorary secretary to the Lady Chapel Committee, will give information to any who desire it about the details.

The Glasgow Society of Painters and Sculptors, formed only two months ago by a group of young artists, opened last Sunday an exhibition of their work. The members are artists who, though they have exhibited in the Scottish Academy, have been denied space in the institution of their native city. "Masters of older artists," they declare, "are not the masters of their younger comrades. No more in art than in literature . . . do the idols of past decades appeal to the imaginations of to-day." The cleavage from older standards is apparent. James Millar shows a virile water-colour. A. A. McGlashan sends an ambitious "Susanna and the Elders" and a decorative "Landscape and Figures." Robert Sivell has a "Portrait of John B. Campbell, Esq." James Wood, with fantasies in tempera; C. Cameron Ramsay, three portraits; W. Sinclair Gordon, a portrait and allegory; and Saul Yaffie, a study of a playing child. In a room apart James Cowie has numerous sketches; T. Gentleman satirises in "Reconstruction," and J. C. Lamont exhibits a comprehensive vision. The sculpture is poor, apart from a head by Benno Shotts, a study of a blind boy by A. C. Giuliani, and a torso by Archibald Dawson. The exhibition is helped by the "Kerensky" caricature and the "Russian Gipsy" of Jacob Kramer.

Great disappointment and bitter resentment have been aroused in Wales, so says the *Liverpool Daily Post*, by the action of the National Heroes' Memorial Committee in their method of selecting an architect to carry out the scheme decided on—the provision of a science building at Bangor University. The committee resolved to ask some half-dozen architects to submit plans, and, remarkable as it may seem, not one of them was a Welshman. "What a good many Welshmen are asking," we are assured, "is this: Is there a 'hidden hand' minimising the rightful aspirations of a nation one of whose sons is First Minister of the British Empire? Perhaps he may yet give a hint, for it is not too late to rescind what looks like a boycott of Welsh architects, among whom there may quite possibly be an Elmes or a Scott."

The first section of the Exhibition of War Memorials will shortly be held in the Victoria and Albert Museum under the auspices of the Royal Academy War Memorials Committee with the co-operation of the staff of the museum and that of the British Institute of Industrial Art. In addition to memorials of the past (mainly from the museum collections), this exhibition will include examples selected by the committee, of memorials executed in recent times by deceased and living artists. The representative exhibition of projected designs is reserved for the October Exhibition at the Royal Academy, but designs for definite memorials already in hand or about to be executed will also be admissible for the Museum exhibition.

The London County Council Shoreditch Technical Institute, Pitfield Street, N.1, will hold an exhibition of cottage furniture, from May 12 to 24 inclusive, 10 to 12 a.m., 2 to 4 p.m., comprising a complete set of furniture for a five-roomed cottage, including a living-room, parlour, and three bedrooms. Some of the articles are duplicated as alternative designs. It is not claimed for the furniture that it exhausts the possibilities of design and construction in articles for cottage use. The main object of the exhibition is more for

the purpose of suggestion and experiment in form and finish. As far as possible the guiding principles in construction have been lightness with strength, fitness for use, comfort, and ease in moving and cleaning. Consideration has also been given to the cost of production. Non-essential details, such as a cornice and pediment on the wardrobe, have been discarded, whilst wooden drawer knobs and racks for mirrors have been used in place of brass fittings. The painting of the two bedroom sets has been done by the students of the L.C.C. Brixton School of Building, and is purely an experiment in the use of a medium which has long been neglected as a "finish" for furniture. The colours and the "combed" patterns suggest a wide range of possible applications of a simple process which hitherto has been confined to poor imitations of oak or maple in graining. All the furniture has been set out and made by the elder boys in the Technical Day School from designs prepared by Mr. P. A. Wells, head of the Cabinet-making Department of the L.C.C. Shoreditch Technical Institute. The curtains, bedspreads, and chair cushions were prepared and made by girls in training under the supervision of Miss H. J. Plowright, Lady Superintendent of the Institute.

The best architect's house that was ever built, and one which we have more than once said we hoped would be "nationalised" on its merits for the benefit of all desirous of its preservation as a treasure house of real art, is that designed for himself at 9, Melbury Road, Kensington, by William Burges, who spent many years in decorating it and in the design of the furniture. In this he was assisted by several of the pre-Raphaelites, and the furniture includes specimens of work by Sir E. Burne Jones, Stacey Marks, Henry Holliday, and other members of the pre-Raphaelite brotherhood. A few of the pieces, many of which are reproductions of ancient models, are to be sold by auction by Messrs. Knight, Frank, and Rutley on the premises on June 5.

Within the next few days the town-planning clauses of the Housing Bill will be considered by the Standing Committee of the House of Commons, and in this connection Reuter's representative has had an interview with Mr. Henry R. Aldridge, secretary of the National Housing and Town-Planning Council, who has just returned from a visit to France, undertaken for the purpose of inquiring as to the scope and character of the new French Town and Village Planning Law, and, more especially, its value in regard to the control of the rebuilding of the devastated areas. Under the French Act, all local authorities controlling areas in which growth is taking place must prepare and submit schemes within a period of three years, added Mr. Aldridge, whereas, in the case of the English and Scottish Housing Bills, the preparation of town-planning schemes is left in a permissive stage, as if the orderly development on modern lines of areas was a matter of minor importance. Town or village planning schemes in France must be prepared within three years of the passing of the Act by:—(1) All towns with upwards of 10,000 inhabitants; (2) all the towns of the Department of the Seine; (3) all towns with from 5,000 to 10,000 inhabitants in which an increase of not less than 10 per cent. has taken place in a period of ten years; (4) all health resorts; (5) all towns and villages, however small, possessing picturesque, artistic, or historic characteristics; (6) all garden villages or towns developed by public utility societies and other agencies. Provision is made for the granting of subsidies in aid of the preparation of schemes, and, in addition, both Departmental and State Commissions are to be set up to aid local authorities. The Act is also applicable to every town or village which has been wholly or partially destroyed by acts of war, and no buildings, except of a temporary nature, may be erected in these villages or towns until the planning scheme has been prepared. Asked his opinion as to the spirit in which the question of town planning was being dealt with in England, Mr. Aldridge declared that he had come back from France feeling disappointed that the British Government should be lagging so far behind France on this vital question of national life.

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DOMANSTOWN (YORKS.).—For taking down hut at Angram and erecting same at Dormanstown, for the North Riding Education Committee:—

Ridsdale, J. Skelton £130 0 0

Recommended for acceptance.

PILL, SOMERSET.—For re-building river wall at Pill, for the Long Ashton Rural District Council:—

Coles, J., and Sons, Clevedon .. £570 0 0

Accepted.

PRESTON.—For the raising of Ave Hundred Bridge and a length of main road adjoining, for the Lancashire County Council:—

Parr, A. E., 8-10, Great St.

Helens, London, E.C.3 £5,801 16 0

Accepted.

WALWORTH.—For extension of garage and factory premises, Walworth, for Messrs. Alford and Alder, Messrs. Briant and Son, 200, Kennington Park Road, S.E.11, chartered surveyors:—

Marsland, J., and Sons £1,803 0 0

Rice and Son 1,785 12 3

Potterton, J., and Son* 1,664 16 0

*Accepted.

WESTON SUPER-MARE.—For erection of a bandstand on the Marine Parade, opposite Rozel Kiosk, for the urban district council:—

Jones, Ltd., Cardiff £391 10 0

Accepted.

A sum of 25,000 fr. (£1,000) has been voted by the governing body of the Ecole des Infirmières, Brussels, where Miss Edith Cavell formerly acted as matron, for the purpose of erecting a monument to commemorate her murder. The monument, designed by M. Paul Dubois, is to be placed in the garden in front of the school.

It is stated that the number of official valuers required for the purposes of the Acquisition of Land (Assessment Compensation) Bill will be eight—five for England and Wales, two for Scotland, and one for Ireland. The salary of an official valuer will not, it is estimated, exceed £5,000, and the total amount required for salaries of the official valuers will, therefore, not be more than £24,000 a year.

Freezing plant has been erected on such a gigantic scale in Australia that a reservoir containing one million gallons has been constructed to supply the Government refrigerators in Western Australia. The reservoir was built of waterproofed concrete, which stood all the tests, the executive engineer expressing his satisfaction with the economy resulting from the use of the powder "Pudlo," the medium employed for waterproofing.

LIST OF TENDERS OPEN.**COMPETITIONS.**

May 17.—The Housing Committee of the Newcastle-on-Tyne Corporation have increased to 137 guineas the first premium in connection with their competition for designs for laying out a portion of their Walker Estate, and have extended the time to May 17.

May 30. Designs invited by the Buxton War Memorial Committee for a War Memorial Monument at prices not to exceed £500 and £1,000. No premiums offered. Designs and prices to J. M. Scott, Information Bureau, Buxton.

BUILDINGS.

May 19.—For a 24-bed hospital pavilion in connection with Linaere Hospital, Linaere Lane, Bootle. For the Bootle Corporation.—Bills of quantities and further particulars at the borough engineer's office. Tenders to J. S. Tummity, town clerk.

May 21.—Extensions of the electricity substations at Dalston Lane and Balcombe Street, Hackney. For the Hackney Borough Council.—Plans and form of tender at the office of the borough electrical engineer, 306, Mare Street, Hackney.

May 21. Tenders are invited by the Commissioners of H.M. Works for the erection of partitions, etc., on the basement floor of the new Science Museum, South Kensington. Tenders to be addressed to the Secretary, H.M. Office of Works, etc., Storey's Gate, Westminster, London, S.W.1.

May 21.—Structural improvements at the Union Infirmary, Pendleton, Salford.—For the Salford Board of Guardians.—Particulars from Messrs. Telford, Gunson, and Sons, architects, 10, Marsden Street, Manchester. Tenders to E. H. Inchley, clerk, Poor Law Offices, Eccles New Road, Salford.

May 22.—Amended tenders are required for the erection of two workshops at the rear of the technical college, Cardiff.—For the Education Committee.—Plans from the architects, Messrs. I. Jones and P. Thomas, 6 and 7, St. John's Square, Cardiff. Tenders to J. J. Jackson, Director of Education, City Hall, Cardiff.

May 27.—Erection of a permanent administrative block at the Sanatorium, Morton Banks, Keighley.—For the Keighley and Bingley Joint Hospital Board.—Drawings and bills of quantities obtained at the offices of Messrs. Moore and Craibtree, architects, Station Buildings, Keighley, on and after May 20. Tenders to N. Clarkson, North Street, Keighley.

Mr. J. Dick Peddie, F.R.I.B.A., Edinburgh, has been appointed consulting architect for the £138,000 housing scheme of the Dumfries Town Council.

At the first vestry meeting of the Church of the Saviour, Blackburn, it was announced that Sames and Green, of Blackburn, had been appointed architects for the new memorial church to be built to the memory of the fallen of the Longshaw district.

The city engineer of Hull, Mr. F. W. Brickwell, has prepared a number of alternative schemes for the rebuilding of the North Bridge over the river Hull. The joint committee considering the matter are nearly unanimous in advocating the scheme showing a straight thoroughfare from St. Philip's Church, Charlotte Street, to Witham, on the east side of the river. The estimated cost is £295,000, and this and another scheme, estimated to cost £270,000, will be submitted to the city council.

CHIPS.

Mr. Sheriff Banister Fletcher, C.C., F.R.I.B.A., has been elected a member of the Athenaeum Club.

Mr. H. A. Newman, Cupar, has been appointed architect under the Government housing scheme for Alloa.

Application is to be made by the Wardens of St. Bartholomew's Church, East Ham, for a faculty to erect a reredos, at a cost of about £720.

Mr. W. Waite Sanderson, of Newcastle-on-Tyne, is the new president of the Auctioneers and Estate Agents' Institute, in succession to Mr. W. H. Wells.

The Tivoli site in the Strand has been sold for approximately £150,000, and as soon as the V.M.C.A. Beaver Hut is demolished a music-hall will be erected.

Mr. Frank Brangwyn, R.A., has been elected a Governor of the Latymer Foundation, Hammersmith, in succession to the late Sir William Crookes.

The Corporation of Newbury has appointed a sub-committee to obtain further information respecting sites for a proposed town hall and to report to a future meeting.

The death is announced on May 5 of Geoffrey Gilbert Scott, son of Mr. Giles Gilbert Scott, A.R.A., 4, Campden Hill Square, Holland Park, age 3 years 5 months.

It has been decided by the London County Council not to remove from the bronze sphinxes at the base of Cleopatra's Needle the marks of damage done by aerial attacks on London during the war.

A gift of £10,000 has been offered to the University College of Wales, Aberystwyth, by Mr. Laurence Philipps, of Llanstephan House, Radnorshire, for founding a plant-breeding institute at Aberystwyth.

At the entrance to the wing of St. Bartholomew's Hospital, in which wounded soldiers were received, a tablet is to be fixed bearing an appropriate inscription. Over 5,400 wounded were passed through the ward during the war.

A memorial is to be placed in St. George's Church, Stamford, to take the form of an oak reredos and oak panels, with the names of the fallen from the parish in the war. The approximate cost is £200. Mr. H. F. Traylen, architect, was invited to submit designs, and the work will be entrusted to Messrs. Bowman and Sons.

The Commissioners of Works have requested the London County Council to grant a site on the Victoria Embankment, in the gardens opposite Cleopatra's Needle, for a Belgian national memorial to be erected at the expense of Belgian residents in this country as a testimony of the gratitude of their country, which will be a sculpture by M. Rousseau. Permission has been given, subject to certain conditions.

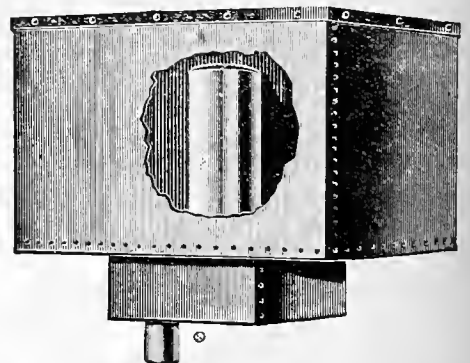
Derby Town Council last Wednesday endorsed for presentation to the Local War Memorial Committee a scheme for the provision of public walks and pleasure grounds on the banks of the Derwent, at an estimated cost of £200,000. Three miles of promenade will involve the razing of various large blocks of buildings. Part of the cost of the outlay is to be obtained by voluntary subscriptions, but a suggestion was made that rate aid will eventually be necessary.

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Imperial Delhi, the Carriage Entrance, the Secretariat Buildings. Mr. Herbert Baker, Architect.
"Daily Express" Model Homes Competition (Exhibition opened on Monday at the Central Hall.

Strand, W.C.2

Westminster, by Mrs. Lloyd George). Plans of the 1st and 2nd Prize Designs in Classes 1 and 2. Messrs. R. J. McBeath, W. Rosser, H. E. Moss and A. T. Scott, Architects.
"Daily Mail" Ideal Homes Competition: Prize Designs. Messrs. Evelyn Simmons, Lic.R.I.B.A., and Leslie Glenecross, A.R.I.B.A. (Midland area); Horace L. Massey, A.N.Z.I.A. (Northern); and Capt. Arthur C. Martin (Southern and Midland Counties).
The British War Medal: First Premiered Design By Mr. William McMillan.

Currente Calamo.

Several letters for which, so crowded is our space this week, we cannot find room, lead us to the conclusion that opinion is divided as to the wisdom of the resolution passed on May 12, as announced by us on p. 299 last week, to lift the minimum commission to architects from 5 to 6 per cent., and in each case regret is expressed that the amendment suspending the charge for twelve months, which was lost by only two votes, was not carried. We confess we incline to that opinion ourselves. The decision to make the alteration at once is evidently resented, and may prejudice not a few architects. The practice is not favoured by the public, and a Manchester correspondent sends us a cutting from the *Manchester Guardian* which embodies comments which are hardly fair. Our contemporary says:—

"A very divided opinion is to be noted in the leading architectural circles here concerning the wisdom of the decision of the Royal Institute of British Architects to increase architects' professional charges throughout the kingdom from 5 per cent. to 6 per cent. on contract amounts. The fact that the resolve to bring this into effect forthwith was carried by only two votes is sufficient indication of the reluctance felt by many architects to challenge public opinion in this drastic fashion; and it is very likely that it would be found, on examination, that in the main the rash resolve was fostered by the strugglers and strivers in the profession, and not by those of established position. The claim, indeed, is one that is a direct incentive to the non-employment of architects, and therefore to retard the solution of the housing problem. The majority ask that not only shall they receive the old allowance of 5 per cent. on the larger prices paid for building materials and labour, which do not involve them personally in an additional penny of expense, but that they shall have an extra 1 per cent. on the top of all, for which they will do no further stroke of service. This is a claim those who have money to invest in houses will assuredly resent, with the consequent result of loss to architects all round."

We hope not, but we can assure the writer that in many instances the enormous increase in the cost of labour and materials have led to the very drastic limitation of pre-war purposes and estimates, which has saddled architects with much additional work, due to compulsory alterations of plans, etc., for which the additional 1 per cent. would be very moderate extra remuneration. That the change may prejudice architects commissioned by new clients is, we fear, probable, especially with local authorities just now considering the employment of architects in connection with housing schemes. It would have been better, we think, if the R.I.B.A.

had waited a while, well as architects—who have suffered to a far greater degree during the war than most other professional men—deserve the addition to their means, which it may be difficult to enforce.

Tenants of dwelling-houses are now at last coming into their own. Profiteering landlords are getting the worst of it, and even buyers for occupation are doing badly. The results of the two Increase of Rent Acts, 1915 and 1919, are shaking our ancient Land Laws. The latest case is that of "Vernon Investment Association v. Welch," in which plaintiffs sued for possession of a house at Kew, which was let to the defendant on an agreement ending in September, 1918. The rent was £45, but it was rated at £34, so it came under the Act of 1915. In June, 1918, plaintiffs had bought the house and told the defendant she would have to leave at Michaelmas, as her term expired. They then agreed that she could stay on until March, 1919, by paying them £5 extra, she not then knowing of her rights under the Act. Then, in January, 1919, plaintiffs sold the house subject to her tenancy, but agreeing to give the purchaser possession in September. The defendant, as tenant, refused to go, and plaintiffs now sought her ejectment. Plaintiffs admitted that the Act of 1915 applied, but urged that the Court could make an order under S. 1, subs. 3. As plaintiffs had bought since September 30, 1918, it was clear that they could not now be regarded as landlords of the house. Nor could they claim the house for their own occupation, but for that of their purchaser. The judge refused to use the general discretion given in the Act, and gave judgment for the defendant, with costs. This was the first case wherein the tenancy would run out by expiration of lease instead of by a notice to quit. The result here is that the tenant remains in possession, and the plaintiffs must arrange matters with their purchaser.

As will be seen from our report of the discussion in Select Committee on the Housing Bill, given on another page, Dr. Addison has accepted part of Mr. Locker-Lampson's amendment making it compulsory for certain local authorities to prepare town-planning schemes; characteristically, in a form which commits him to a minimum. Local authorities which repre-

sent a population of 20,000 must prepare some scheme, but they are under no obligation to report till 1926. The details of reference are struck out of the clause, and left to the tender mercies of the Local Government Board. Dr. Addison's apparent concession is worth very little!

A small but very delightful exhibition of paintings of the Florentine school prior to 1500 is now on view, and till July 27, at the Burlington Fine Arts Club. As Mr. Roger E. Fry well puts it, in his excellent introduction to the catalogue, to Florence of the 14th and 15th centuries, and to France of the 17th and succeeding centuries, we owe the creation of generalised—or what, for want of a better word, we may call "intellectual" art—and certainly at the beginning of the 15th century Italy was deeply affected by both kinds thereof; that, on the one hand, in which curiosity impels the artist to the consideration of every possible form in nature, and the other which impels him to reduce all forms to some common denominator which will render them comparable one with another. Thus he is led to discover some aesthetically intelligible principle in various forms, and even to envisage the possibility of some kind of abstract form, in the contemplation of which the mind attains a satisfaction akin to that of the intellectual recognition of abstract truth. Certainly in Florentine art one may see at happy moments of equilibrium the supreme advantages of intellectual art, and at other and less fortunate moments the dangers which beset the difficulties which pursue its culture. Among the principal exhibits are "The Fall of Simon Magus" (14), lent by the King; "Salvator Mundi" (2), by Giotto, lent by Lady Jeckyll; "Christ, the Angel of the Annunciation, and the Virgin" (8), by Agnolo Gaddi, lent by Mr. Herbert Cook; "The Virgin and Child with St. John" (12), by Sandro Botticelli, lent by Mr. J. P. Haseltine; "A Miracle of SS. Cosmas and Damian" (13), by Fra Angelico, lent by Capt. E. G. Spencer Churchill; "St. Joseph and St. Michael" (15), by Fra Filippo Lippi, lent by Sir Frederick Cook; "The Annunciation" (21), by Sandro Botticelli, lent by the Corporation of Glasgow; "Portraits of Francesca Sasselli and his son Theodoro" (23), by Domenico Ghirlandajo, lent by Mr. R. H. Benson; and "The Battle of the Centaurs

and the Lapithæ" (31), lent by Mrs. Henry Oppenheimer. In the writing-room downstairs are twelve very interesting drawings by Leonardo da Vinci, lent by the King; and a black chalk cartoon by Leonardo of "The Virgin and Child with St. Anne and the Infant St. John the Baptist," lent by the Royal Academy. There are several good pieces of furniture.

In his report to the Edinburgh Housing and Town Planning Committee Mr. A. Grierson, the town clerk, says, quite truly, that, incredible as it may seem, it is a fact that, although ten years have now elapsed since the passing of the Act, neither the Local Government Board in England nor the Local Government Board in Scotland have attempted to draw up these general provisions or code. The truth is the task is shirked by the Local Government Board, and the statute, unfortunately, gives the Local Government Board a loophole of escape from preparing the general provisions. It allows the local authorities to prepare schemes which may vary or exclude any of the general provisions if these are in existence, or if they are not in existence to prepare a scheme "providing for any matters which may be dealt with by the general provisions." Assuming, then, that no general provisions are in existence, the difficult task which the Local Government Board has shirked is thrown upon local authorities. If, however, it is difficult to frame a set of general provisions applicable to the whole country, there are much more serious difficulties if the alternative course is adopted of allowing each of the local authorities to frame general provisions for themselves and incorporate these in their schemes. Now, to put this duty on the shoulders of the local authority is to provide a very great deterrent in the path of town planning schemes. Another fruitful source of difficulty and delay is to be found in the regulations made by the Local Government Board under the provisions of the statute. Mr. Grierson points out that a simplified form of town planning is required, and also a simplified form of procedure. For the purpose of furthering town planning and removing the difficulties which have arisen, there is need both for administrative action and for legislative action, and, as regards the latter, the provisions of the Bill are not sufficiently comprehensive. Discussing these provisions, he suggests that the proposal in Clause 23 of the Bill, giving the local authority power to prepare a town planning scheme without the necessity of obtaining the sanction of the Local Government Board, should be approved of in the circumstances; that the position of the local authorities as regards the proposed new regulations to be made by the Board should be safeguarded; that the provision of Clause 26, giving power to the Board to sanction buildings being proceeded with pending the preparation of a town planning scheme, be approved; that provision should be made to enable the whole area of an urban local authority and a portion of the adjoining suburban area being included within the purview of a town plan-

ning scheme, and that the recommendation of the Scottish Housing Commission on this point should be given effect to and that provision should also be made, as recommended by the Scottish Housing Commission, dealing with restrictions in feu-charters.

The Manchester Town Hall Committee last Wednesday again discussed the draft plan under consideration for continuing the extension of the Town Hall, a new library, and the building of the new opera house which Sir Thomas Beecham is desirous of seeing erected, and which, if built to the dimensions he favours, would occupy at least half the space available. As at present advised, the Committee propose that the City Council should take possession of the blocks of buildings on the southern side of the Town Hall bounded by Lloyd Street, Cooper Street, Mount Street, and Peter Street; that they should clear the site and build thereon a library and other municipal buildings, and leave room for Sir Thomas Beecham to develop on the same site his opera house project. That the scheme will be a costly one is evident. Some say the site alone will cost about a million. Even in the economical times in which it was erected the Town Hall cost some £60,000 or £70,000 more than that, so that in these days of double prices for everything, and more for some things, the adoption of any scheme needs much thinking. The best of its buildings, as it is, can be but badly seen, and, all other things being equal, any plan that secures their better visibility should command the most votes. The next problem will be the extension of the Town Hall, and we commend to any architect likely to be selected a very careful study of Waterhouse's building which we illustrated in our issue of May 8, 1868.

Among the stories about the Peace Conference which are going the round, one, even if not true, is at any rate *ben trovato*. Nobody very much wants the island of Heligoland. The sea is rapidly eating it up, and under the German occupation its existence has been largely preserved by the construction of more and more sea-walls and sea-walls. These facts were duly discussed at the Conference. At the finish silence fell upon the assembly, broken at last by some one who asked whether anyone had any concrete proposal to make. "I thought you said," said Mr. Lloyd George, "that it was all concrete."

Amended plans have been approved by the Shanklin U.D.C. of the picture house to be erected in Palmerston Road. Mr. C. Cassell is the architect.

The Billingsgate Market Committee of the City Corporation is to consider and report as to a comprehensive scheme of improvements at Billingsgate Market, to provide increased facilities.

The Rochdale Master Builders' Association have appointed the president, Mr. T. Woolfenden, of the firm of Messrs. Ashworth and Woolfenden, as their representative on the Rochdale Housing Committee.

North London master builders and decorators have complained to the Minister of Labour that the Labour Bureau does not ascertain whether a person is qualified for his work before sending him to an employer.

IDEAL HOMES EXHIBITION CENTRAL HALL, WESTMINSTER.

(With Illustrations.)

It cannot be said that a satisfactory solution of the housing difficulties has been materially advanced by this competition, notwithstanding the opinion published on behalf of the assessors to the effect that the plans which they premiated "mark a distinct advance in the evolution of the housing of the working classes, both in planning and external design." The plans show several fundamental mistakes, such as the necessity of carrying slops from the bedrooms through the dayrooms to get at the w.c. In reply to detailed criticisms on points of this kind the upholders of the awards urged the excuse that, after all, the assessors did not profess to do more than give preference to the least imperfect among the many hundreds of plans sent in. Such statements do not harmonise, and people who understand the whole business will not be surprised at the comparative failure of the competition, and the models exhibited are not particularly attractive and emphasise the outstanding facts.

It will be remembered that the Local Government Board's initial competition last year, under the auspices of the R.L.B.A., for "The Better Housing of the Working Classes in England and Wales," with local boards of assessors in different areas, only carried the subject a very little way towards any improvements. The lack of workable suggestions in response to the "Daily Express" competition has arisen largely from the objectionable regulations imposed by the promoters, who reserved full liberty to make any use whatever they thought fit of all the designs submitted for adjudication, coupled with the right to make any plan public property by publication. This was particularly unfair, and has proved so in a case where the competitor happens to have set out a very original method in construction or design, but which for various reasons the assessors passed over in favour of more ordinary and perhaps superficially popular, but commonplace design.

The premiated designs copyright became by the conditions the absolute property of the proprietors of the "Daily Express," save that the authors might be permitted to use their plans in their own private practice. Such a concession is of little value, as clients do not pay for published designs, and it is, to say the least, very surprising that the best interests of the architectural profession should be trifled with in this way with the assent of the assessors.

The exhibition is very well arranged, the models and plans of the prize schemes being displayed in the centre of the hall, with stalls in alcoves round the outskirts of the show displaying a variety of incongruous things such as soaps, vacuum cleaners, smoke-preventing pots, plate powder, handy mops and the like. The basement is devoted to Mr. Pemberton Billing's system of housing and the central-heating stove bearing his name. It is a complicated and ingenious affair, very likely to get out of order after a little ordinary use. The workaday housewife probably would speedily bring it to grief, and the radiators, of which there are seven, would speedily begrime the walls to which they are attached.

The model of Mr. R. McBeath's first-prize plan, now illustrated, does not do the design justice. It has a shorn effect, and the same may be said of the model of No. 2 prize design in the same premier class by Mr. Rosser. The windows in pale blue lose their effect. This is rectified in the third prize house model by Messrs.

A. Gateley and Parsons, giving more realistic results; but as the whole block can be seen through in the absence of any inside, obviously the result is misleading. The slops do not have to pass through the living-room in the plan of the north aspect dwelling. Mr. Moss, in his first prize second-class ideal home model, keeps clear of the window transparency objection; it is, however, about 6 ft. long, and so emphasises the costly character of his scheme by arranging so shallow a plan and extended frontage with a vast amount of roofing to pay for. His plan is about a third longer than the second prize houses in the same class by Mr. Alex. T. Scott, also illustrated herewith. In his north aspect house the two best bedrooms face north. Messrs. T. Morgan and C. C. Voysey, the third-prize winners, show furnished sectional models of both floors. The exteriors have latticed porches with curved capped roofs, and the walls are plastered under good Italian-like eaves, which are attractive.

The plans of Mr. L. E. Cole in Class 3 have wasteful landings and winders to the stairs. The cube given is 20,660—not an economic figure for such a type of cottage. Mr. F. Birch, who takes the second prize, has three floors and dormers in his roofs, the top story being devoted to a third bedroom and a capacious store-room. It is a short house, but taller. No cube is given. The third prize block, by Messrs. Byrne and Scott, has bull's-eye windows to diversify the back façade and help light the living-room high up in the wall. Plastered facings with red-brick dressings to 9-in. solid concrete walls are the feature of this scheme. The poor model makes it unattractive.

The Amateur Class is very amateurish. Mr. W. J. Reed, the first prize man in Class B, has rubble-stone walling, which if done in red brick would better accommodate the design. The first prize in the next class, by Mr. C. W. Vaughan, is villa-like, shown by a capital model which indicates its expensive kind. The other plans call for no comment and furnish very few fresh ideas, if any.

The L. G. Board models occupy half the middle space of the hall with "approved" official buildings. They are incapable of harmonising with the country-side or in preventing slum-looking areas in urban districts. They are so monotonous, and, being plastered with brick cills, will soon discolour, and when streaked below the windows the rendering will be filthy. The models look dismal enough, but the plans are economic so far as vertical brick walling and ordinary roofs will allow. House No. 4 has a gas-stove in the very darkest part of the scullery, and the slops from upstairs have to be brought past the front door and through the day rooms to the w.c. In No. 5 the w.c. is set next the front door in the "hall," a most nasty arrangement; and winders are used in defiance of the Tudor Walter's Report. No. 6 avoids these faults, and the bedrooms are good. Externally the commonplace prevails, and the effect is paltry. No. 7 is an improvement in that respect; owing to the deeper proportions of the plan, a less shorn look being possible. No place for perambulators is given in any of these plans, whether bungalow or double-floor houses. The organ and the band made the proceedings on Monday very lively midst the flowers, but to the practical builder, having to pay his way, the superficial character of the show failed to commend itself.

Mr. J. W. Stevens, surveyor and inspector to the North Walsham Urban District Council, has been appointed surveyor and inspector to the Godmanchester Town Council.

THE "DAILY MAIL" IDEAL WORKERS' HOMES COMPETITION.

Three thousand five hundred designs were submitted, and from these the assessors—Messrs. Adshead, Guy Dawber, and Crickmer, acting as architectural experts, with Mr. Seebohm Rowntree, Capt. Reiss, the chairman of the Garden Cities and Town Planning Association; Mrs. Sanderson Furniss, of the Labour Party; and Mrs. E. Barton, of the Co-operative Union—have now made a choice of three sets of plans, those submitted for the Welsh industrial area being deemed too indifferent in merit to justify any award. £2,000 was offered in premiums of £500 each, and the balance of £1,500 has been allocated as follows:—I. Southern and Midland Counties Rural Area, £500; Capt. Arthur C. Martin, F.R.I.B.A., 9, New Square, Lincoln's Inn. II. Midland Industrial Area (Leicester), £500; Messrs. Evelyn Simmons, Licentiate R.I.B.A., and Leslie Glencross, A.R.I.B.A., 10, Gray's Inn Square, W.C. (competing in conjunction). III. Northern Industrial Area, £500; Mr. Horace L. Massey, A.N.Z.I.A., 15, Hereford Buildings, Church Street, Chelsea, S.W.

In calculating the cost of these schemes the estimates are set out at pre-war rates, so that their present values must be taken at about three times the amounts so tabulated. Herein rests the fundamental difficulty of the whole economic problem, because it is manifestly quite impossible to insure rents equal to the fair sum incidental to the site, sewerage, road-making, and cost of building. Under these inevitable conditions the prospect of realising any of these prize designs on business lines is out of the question. Judging from the published plans, no attempt has been made in either of the premiated designs to produce houses by new methods of construction or by using fresh systems of sectional economy by which loss of space is avoided, although the old expedient of a flat roof is adhered to in the prize pair of dwellings for the Northern Area by Mr. Massey. The roof, in fact, is the crucial difficulty both as regards saving of cost and insuring a picturesque simplicity of design. We had hoped that this competition might have demonstrated how these essentials could be obtained, and particularly while bricks and timber are practically unobtainable.

The prize design for the Southern and Midland Area, by Capt. Martin, is set down at £500 for the cost of the pair, his north-aspect houses working out at £20 less. The walls are solid and thick, and evidently are intended to be of rubble, as stone quoins and dressings are shown as appropriate to Oxford, Wilts, Gloucester and Dorset. The architectural appearance obtained is pleasing, the three chimney stacks rising from the main ridge being quite good, though the windows on the entrance front shown in the view appear to be very small. The ground floor of the north-aspect cottages has an ingenious device by which an A-shaped lobby is contrived out of the living room when the doors into the entrance lobby and scullery are shut. The door of the latter opens back on to the fireplace and the hall door opens back into the living room immediately on to the wall. When the cooking is done either in the living room or scullery the cook must stand more or less in her own light, though there is an end window which modifies this difficulty in the living rooms. The stairs rise right against the front door and immediately outside the parlour door two steps down are necessary to get head room for the larder, which is a very good one. The too small

bath is off the scullery nicely enough, but the coals have to be kept in the shed; consequently there is no other room for the perambulator. The third bedroom has a fireplace; but only a single bed is possible, and as the width between the door and the fireplace is only 6 ft. 9 in. there is not much space left. The landing is ample and there are no winders. The fireplace in the living-room of the south-aspect pair of houses is on the cross wall, and the lighting, through from front to back, is better. The larder is smaller, but the stairs in these houses are set back from the front door. No room for the pram appears. The w.c. in all four houses opens out of the shed where the coal bunkers are set. The front doors to the south houses have big, solid-looking porches.

The Midland area, round Leicester, is to have brick-faced houses, as shown by the £500 prize design by Messrs. Evelyn Simmons and Leslie Glencross, their blocks containing four dwellings very pleasantly treated with hipped tiled roofs. The end cottages in the southern aspect blocks have pram space well contrived under the stairs, which, however, commence with winders properly away from the front door. Winders are omitted in the intermediate tenements. The baths are upstairs, the w.c.'s coming off the half-space landings in the end ones. The bath, being over the larders, which are exceedingly small, would have the waste near enough. The intermediate houses are free from this; but the coal places are alongside the larders. The sculleries are capital and the doors are well set. The third bedrooms are better than in Captain Martin's plans, and all have cupboards. The end cottages' cost is put at £285 8s. 4d. cubed at 5d., and the intermediate ones work out at £291 16s. 8d., presumably on a pre-war basis, viz., nearly £600 a pair, which at current prices would come to over £3,000 for a block of four. That is what we are up against if brick and wood and ordinary roofs are used. Cob in such a competition (even if designated "pisé de terre") would probably be taboo, though possibly the old trouble of insects might be overcome by chemical admixtures. In Spain old cottages, existing for ages, are met with, built on decorative and economic lines in clay with arched ceilings, utilising cubic contents, and prettily patterned on the underside with elementary stamped enrichments, without plastering. Such out-of-the-way old homes, no doubt, have little in common with 20th century ideas as to sanitation or modern convenience, but they do at any rate suggest an idea worth following up, and concrete at once furnishes the ideal material. Georgian-like facades, with ample eaves and low-pitched roofs, such as those adopted by Messrs. Simmons and Glencross, are homely enough looking and unpretentious, set off by broad white-painted casement frames and plain set-off strings to mark the first-floor level; but they nowadays cost too much, plan them how you may, while they mark no advance really on what has been done by countless architects since Nesfield and Norman Shaw led the van in this direction in the last century.

The north-aspect houses, for which £500 has been paid to Messrs. Simmons and Glencross, are bisected by a 4 ft. through-way passage, the living-rooms being at the rear, overlooking the garden. All the main entrances face the roads, with hoods to set them off. The effect is quite pretty, even if the oval lights to the landings and stairs seem rather insufficient; in fact, most of the front bedrooms appear to have undersized windows, and this for broad architectural effect. The larders to

the end houses are larger than those above described, and pram spaces are furnished. The sculleries to the middle cottages are quite big, and being so deep would be none too light where the gas stove is, beyond the range piers. The bays to the living-rooms in this block for the intermediate houses much improve them; the baths and w.c.'s are upstairs, but in no case is it necessary to go through any room to gain access to the lavatory, and the w.c. door is nicely masked; indeed these plans are well thought out with reference to their drainage.

Messrs. Simmons and Glencross are now practising in partnership at No. 10, Gray's Inn Square, W.C. Both have had facilities for studying the housing question under existing conditions, as they were employed during the war in the Housing Section of the Ministry of Munitions, where they worked, under the direction of Mr. Raymond Unwin, on housing and town planning schemes at Gretna, Easttriggs, and Queensferry. They were subsequently transferred to the Housing Department of the Local Government Board and have gained valuable knowledge which should stand them in good stead in their future work.

The Northern Industrial (or Leeds) Area design, accorded a £500 prize, has a flat roof and a suburban villa appearance of the cement faced style. Mr. Horace L. Massey is the architect. The plans are direct and simple, with folding doors between the parlour and the living-room. To get head room for the cycle and pram recess next the front door under the stairs, two steps rise in the hall, and the objectionable expedient of winders is used—the very point which ought to be avoided, for the sake of children—whereas the intermediate step used in this case accentuates the objection. The sculleries are good and ample, with an open stove. The larders get ventilation and light indifferently within the recessed porch in each case at the ends of these semi-detached blocks arranged, as the perspective shows, rather too closely up one to the others, hampering the side windows. The objectionable winders do not occur in the southern-fronted dwellings, and the larders, though also set back, may perhaps stand the chance of better light. The chief entrances are at the ends, the "reception-rooms" fronting south. The third bedroom is ample, but only has a north window. Verandahs or sun porches are provided off the living-rooms. These tenements are priced at £450 per pair on pre-war estimates, or at least £1,200 now.

We cannot think that out of the 3,447 remaining designs received, this incongruous looking pair of cottages, taking one thing with the other, are not greatly surpassed in merit by some others. After all that can be said in its favour, the result is quite ordinary and by no means inspiring. Later on, when the book of designs is published, we shall be better able to tell whether this surmise is correct or not.

The Small Holdings and Allotments Committee of the Surrey County Council have appointed Major Charles Reginald Harding, F.S.I., as county land agent, in the place of Mr. H. E. Cooke, resigned, at a salary of £700 a year.

The total expenditure on the new County Hall, including site, building, and embankment wall, up to March 31, 1919, has been £1,221,104. The approximate estimated cost of completing Sections A, B, and C was, so far as could be ascertained, £1,294,800. The building of Section D has not yet been commenced, but the pre-war estimate of the cost was £295,200.

Our Illustrations.

BRITISH MILITARY CEMETERY: DESIGN FOR CHAPEL AND APPROACH, ST. SEVER, ROUEN, FRANCE.

The design shown in the Royal Academy this year is a detail of the great British military cemetery of St. Sever, about 1½ miles out of Rouen, across the river. This cemetery, which contains some 15,000 graves, is a large piece of ground, continuing the Communal Cemetery, and the problem here as elsewhere in the British military cemeteries, is to do the best one can with the existing facts—namely the position of the graves as laid out, often under very difficult conditions. This position is strictly preserved in all cases. In the design here illustrated it was possible to reserve a space for the memorial chapel, its approach, and the setting of the great stone, in a large circular sunk space, surrounded by the stone pergola and approached from the intersections of the two existing diagonal paths. Each cemetery is supplied with a plan showing the position of each grave, and this will be placed in small pavilions on either side of the main entrance. A cross 32 ft. high is to be placed at the further end, and on the highest point of the ground, in front of a colonnade and loggia for shelter, making the acute angle of the ground S.W. The materials will be stone and reinforced concrete for the domes. The design and drawing are by Sir Reginald Blomfield, R.A., architect, of New Court, Temple, E.C.

IMPERIAL DELHI: THE CARRIAGE ENTRANCE, THE SECRETARIAT BUILDINGS.

This double-page illustrates one of the most striking drawings now at the Royal Academy in this series of watercolours from the national scheme in progress in Delhi. The picture gives the carriage entrance of the secretariat, of which Mr. Herbert Baker is the architect. We shall shortly give the lay-out plan of the gardens and surrounding grounds, with the relative positions of the Government House and two great piles of the Secretariat buildings. On May 7 we printed the ground plan of the former, with two other perspectives. Sir Edwin E. Lutyens, A.R.A., and Mr. Baker are acting jointly throughout. Other plates will appear at an early date in further elucidation of this work, of which the authorised description was given in our issue of May 7, when the previous illustrations appeared.

"DAILY EXPRESS" MODEL HOMES COMPETITION.

The first prize (£200), in Class I, is shown by the top drawing of cottages for unskilled labourers. Mr. Robert J. McBeath, Sale, Manchester. The second prize (£100) was awarded to Mr. Walter Rosser, M.S.A., of Abergavenny, as shown by the lower drawing. The first prize (£200) in Class II is reproduced on our second single page at top of the plate. The cottages are for skilled artisans, and the prize was won by Mr. Harold E. Moss, A.R.I.B.A., Malden, Surrey. The second prize (£100) was awarded to Mr. Alexander T. Scott, of Muswell Hill. These latter are parlour plans. The assessors were Messrs. H. T. Hare, William Dunn, and A. E. Richardson, F.F.R.I.B.A. The exhibition was opened on Monday in the Central Hall, Westminster, by Mrs. Lloyd George. The

designs are now on exhibition at the Central Hall, Westminster.

THE "DAILY MAIL" £2,000 HOUSING COMPETITION.

The three selected designs, which have been awarded premiums of £500 each. For the Midland area, Messrs. Evelyn Simmons and Leslie Glencross; for the Northern area, Mr. Horace L. Massey; and for the Southern and Midland Counties, Capt. Arthur C. Martin. No premium awarded to any design for the Welsh industrial area, no design being considered good enough.

THE BRITISH WAR MEDAL.

The design submitted by Mr. William McMillan, which was awarded the first prize of £500.

FACTORY BUILDING CHIEFLY IN RELATION TO THE WELFARE OF THE WORKER.*

By H. T. BUCKLAND, F.

The first question would be the selection of a site. The location of this should be governed to some extent by the labour available in the district. The proximity of a canal is also very desirable. All large works will require their own railway sidings, and many of them a canal arm.

Owing to the shortage of steel during the period of the war, it became essential to resort to a type of roofing which dispensed with the necessity for its use, and at the same time did not make too great demand upon the timber supply; the result was that the Belfast type of roof was almost generally adopted. It has many disadvantages. The trusses have to be fairly close together and slightly restrict the daylight, and although countershafting can be suspended from it, it is not suitable for carrying a main driving shaft. Before the war the roof known as "saw tooth" was almost invariably adopted for one-story shopping and the north light regarded as a *sine qua non*; with the Belfast roof an ordinary top light became essential. I recently had the opportunity of discussing this question of roof lighting with a works engineer whose opinion I value very highly. I will quote his conclusions as they were given to me:—"I have no hesitation in saying that the 'saw' type roof facing north is the most suitable of all roofs, and particularly lends itself to easy and rapid construction. The principals can be made of steel, reinforced concrete, or wood. The gutters can be made of cast iron, and when made of such, pockets can be cast on the sides of the gutters to take and support the wood principals, which makes it a very satisfactory and fairly cheap job. If buildings are required for cranes, the building in such a case would have to be as follows:—Gantry, 20 to 25 ft. high, and the eaves of the building 8 to 10 ft. higher, making in all 30 to 35 ft. For such a building a span roof is very suitable, and the sun does not have the same effect when the roof is so high as when the eaves are only 12 to 14 ft. high; in fact, a shop of the latter height should never be built in such a way that the sun can shine through the roof; but this does not apply when the roof is 30 to 35 ft. high."

It is a curious anomaly that it should be generally agreed that sunshine is essential in a house, whereas a very large body of opinion regards it as a nuisance in a factory. With the large roof area one gets in a one-story factory of any size the question of the disposal of storm water is one which needs more careful consideration than is usually given to it; in a heavy storm the volume of water to be dealt with is considerable, and the size of the drains provided needs to be calculated carefully, especially as it is improbable that any great fall will be obtainable owing to the long lengths of drain and the level of the site, which obviously should be as flat as possible. And although the Belfast roof has stood us in good stead during the past few years, I should hardly think it is likely to be largely adopted when other forms of roof can be employed in which materials of a more durable description than felt and materials of a

* From a paper read before the Royal Institute of British Architects, Monday, February 17, 1919.

similar character can be used for an external covering. However this may be, the essential considerations will remain the same, and roof light and roof ventilation will present the same problems under both conditions.

It almost goes without saying that the raw material should enter at the one end of the machine and the finished product emerge from the other, or complete a circuit. If we regard our factory as the machine, the same condition should apply, although the process is longer and more complicated than that of a single manufacturing process. The raw material may come along either as a purely raw material or partly manufactured; in either case it will need to be stored. This will involve the provision of a warehouse, which will naturally be placed against the railway sidings, and as the finished articles will be despatched by rail it will probably be convenient to combine the two warehouses, one for raw material and the other for finished goods, in one building. The next problem will be the transport from the sidings or the warehouse to the building in which the first process is to be performed. This will probably be done by trolleys on a track, a number of trolleys being pulled by an electric trolley. So far we have only dealt with processes common to all factories, and it is now that we shall have to consider the type of manufacture to be provided for. Before commencing to plan any factory an architect should study in an existing factory the process of manufacture, and take particulars of the sizes of the machines and the areas which will be required round them for convenient working, and the relation of the different processes to each other. Having made a machine-setting-out plan, it will then be possible to arrive at sizes and widths of bays, and proceed to a solution of the problem so far as the manufacture is concerned; examination, sorting and packing will follow, and accommodation for them will need consideration. From the packing room the parcels of finished goods will be conveyed by trolleys to the finished warehouse ready for despatch by rail.

Our next problem will be the workers. The first point which presents itself is getting the worker in and out, at the same time providing some record of his coming and going. The old check system, in which each worker was provided with a metal check which he took from its place on a board when he entered the works and replaced when leaving, has been almost entirely superseded, at any rate in large works, by a system of clock registers. These record the hour of arrival and departure upon slips which are pushed into the machine and stamped much in the same way as the date is marked on a railway ticket, the slips being left in racks provided for them at the side of the clock, and while the employees are at work the necessary particulars are taken from the slips and entered in the books.

The next consideration will be the provision of cloakroom accommodation, and this is very important where women workers are employed. It is desirable that lockers with solid sides and expanded metal doors should be provided for each person so that the clothes do not hang against each other. There should be ample accommodation for changing clothes and boots and for drying of wet clothes. Good ventilation is essential, and means should be adopted to prevent pilfering or theft. Adequate lavatory and other sanitary accommodation should be grouped with the cloakrooms, in a separate apartment if possible, and all under the supervision of a special attendant. It will be readily recognised that the time occupied in taking off cloaks and hats, and probably changing boots, may be considerable, and if this took place during the employer's time the loss to him would represent an appreciable sum of money each day. This can be avoided if the work-people pass the cloaks after leaving the cloakrooms, and now that the hours of labour are being reduced I think it will be found that the cloaks will be placed in the workshops even more generally than they are at present.

As a general statement, I think it may be said that in the past, with comparatively few but notable exceptions, the manufacturer has not been alive to the importance of this sub-

ject, and as I have already remarked, it has needed a world-war to awaken him. The essential conditions for maintaining the health of the worker may be summarised as—Favourable conditions for the body itself, i.e. —food, air, exercise, cleanliness, warmth, etc.—and a satisfactory environment—i.e., a sanitary factory and good housing accommodation. I propose to deal first with environment. The Factory and Workshops Act, 1901, states the essential requirements for a proper environment, but offers no suggestions for satisfying them, so I do not propose to quote it, as the general conclusions which have been arrived at cover the ground it traverses.

LIGHT.—Whether natural or artificial, the lighting of the factory should be adequate and as constant as possible. Roof lighting is

sight in addition to affecting output unfavourably. Electric lighting is very successfully done with $\frac{1}{2}$ -watt electric lamps fixed at about 15 ft. centres. In addition, it is necessary to have independent lights where required.

VENTILATION.—In ventilating the factory, clean air as well as a stimulating atmosphere should be the aim in view, the essential requirements being freshness and movement. Cool air is more stimulating than warm, and dry air is preferable to damp. The proportions of carbonic acid in the air of a room are no longer regarded as the infallible test of ventilation as they were about ten years ago, and movement is now regarded as the chief essential. In this matter of ventilation the factory has passed through the same experience as the school building, and the same

THE BRITISH WAR MEDAL.



First Premiered Design, by William McMillan.

We give herewith an illustration of the design for the British War Medal, to which the first premium of £500 has been awarded.

The idea represented is St. George trampling on the Prussian shield, the shield being represented directly beneath the sun, as indi-

ating Germany's experience in endeavouring to secure a place there. The skull and crossbones, of course, represent the defeat of the submarine campaign.

The author of the design, as we stated on page 293 last week, is Mr. William McMillan, of 14a, Cheyne Row, Chelsea.

generally considered preferable to lateral lighting, and a north light is thought to be the best. Where lateral lighting is necessary, the question of the height of rooms in relation to their width is an important one. Pulleys and belting are greatly obstructive to light. Light-coloured walls and white ceilings add much to the general brightness of a shop. Dirty windows or roof lights cause a great loss of daylight, and it is important to give facilities for easy cleaning from within as well as from without. It may safely be said that it is impossible to give too much light.

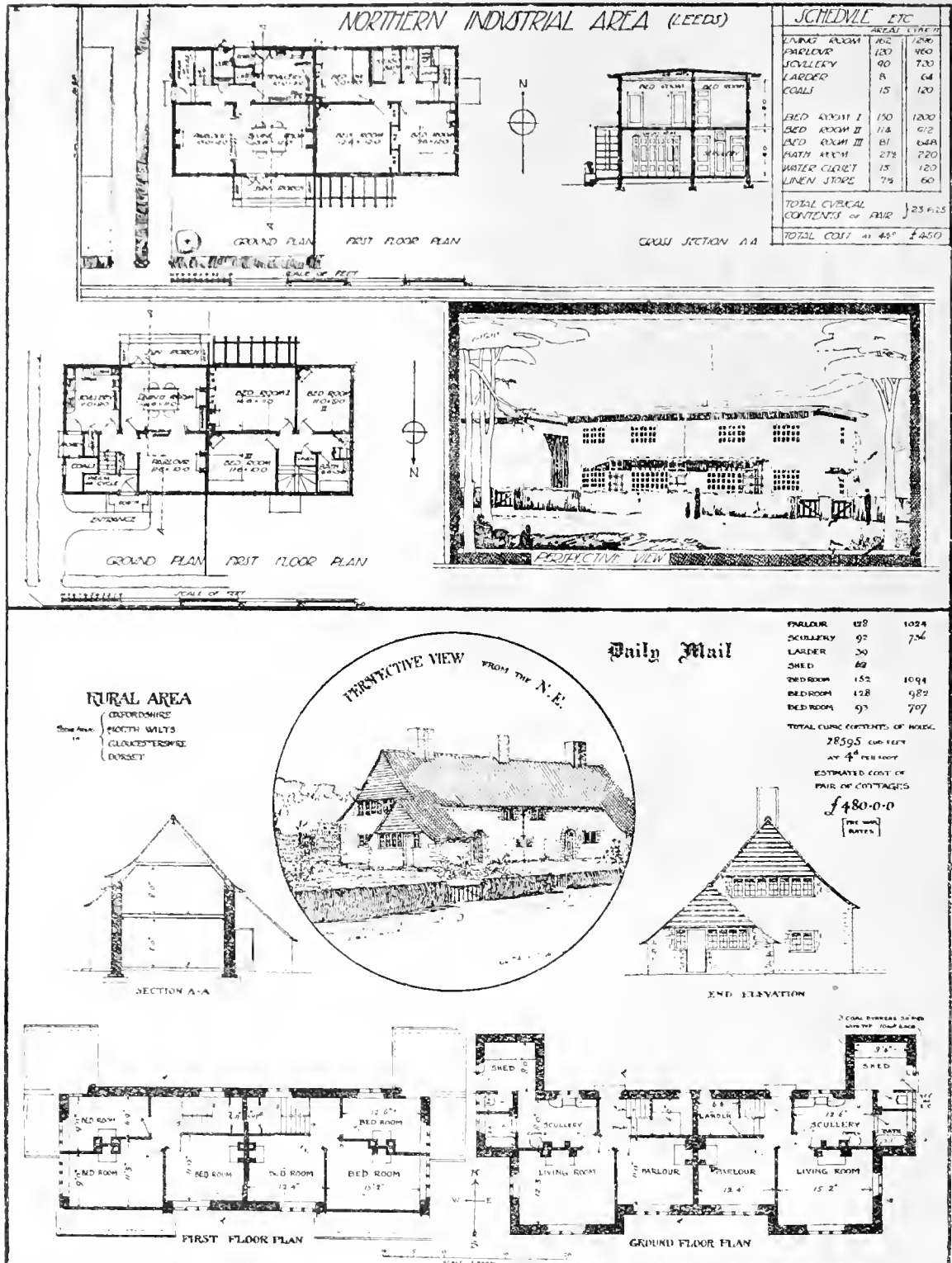
As regards artificial lighting, I do not propose to discuss the merits of gas as compared with electric light as an illuminant; each has its advocates, but there is no question that the use of the former makes the subject of ventilation more difficult. Common to the use of both is the importance of constancy and uniformity of illumination over the necessary area of work, and the arrangement of the lights so that the direct rays do not fall on the eyes of the worker or cast shadows on the work. Bad lighting results in damage to eye-

conclusions have been arrived at—viz., that a natural system is likely to prove the most efficient. However, like all other systems, it is necessary that it should really be in action, and this is only obtained when windows and other openings intended for the inlet or outlet of air are open. Not an easy matter to ensure, if the control is at the workers' discretion. There are, I believe, still a number of factories ventilated on the "Plenum" system, but one seldom meets an advocate of it, and I have heard of many cases where it has recently been taken out and a natural system substituted.

As a general summary of the ways and means of ventilation I cannot do better than quote *in extenso* the conclusions and recommendations of the Health of Munition Workers Committee as follows:—

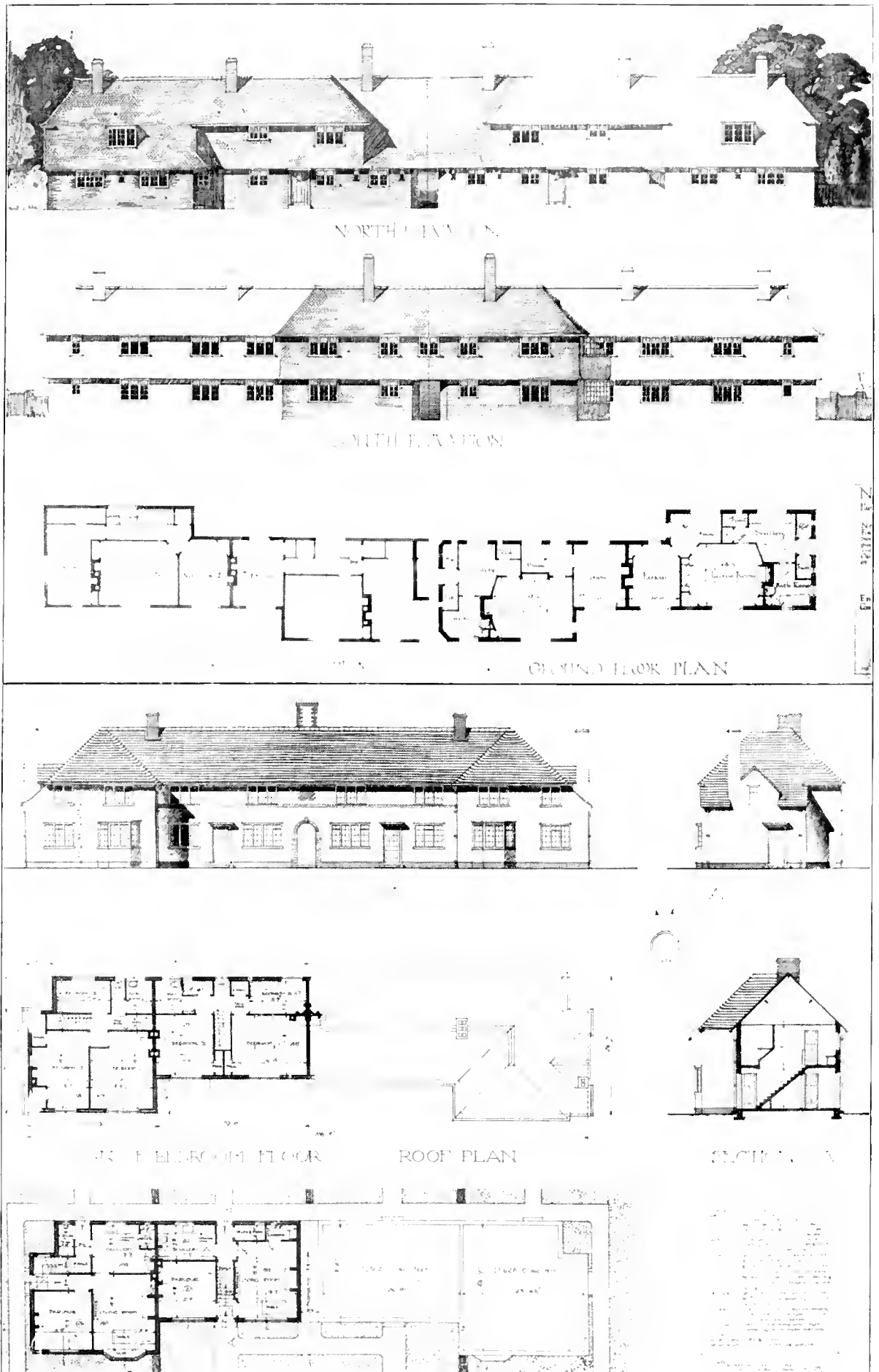
"The ventilation and heating of every workshop provides a separate problem. There is no uniform or stereotyped method which will give satisfactory results everywhere. The

(Continued on page 320.)



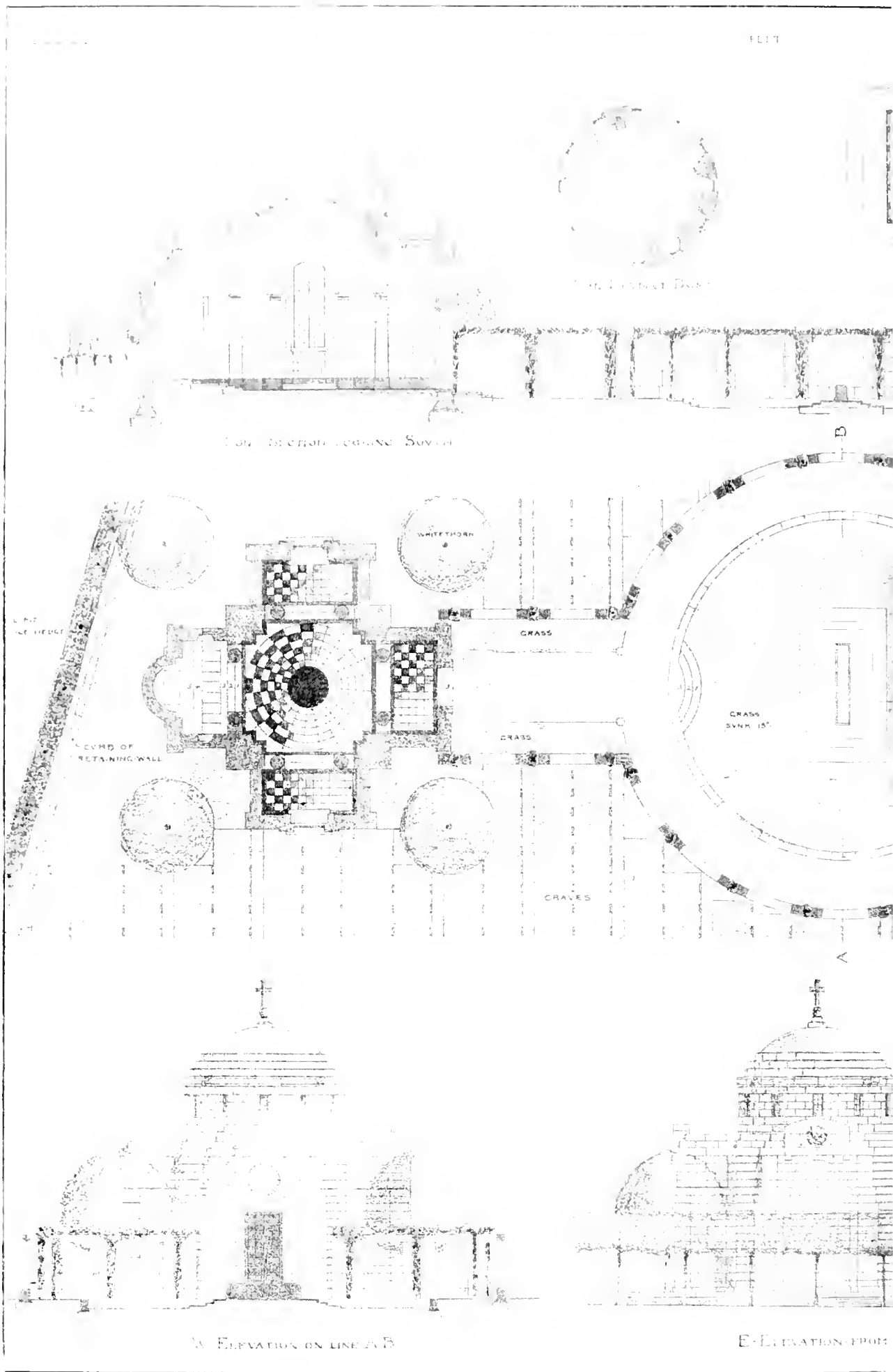
"DAILY MAIL" IDEAL HOMES COMPETITION PRIZE DESIGNS.
 Mr. HORACE L. MASSEY, A.N.Z.I.A. (Northern), Mr. A. C. MARTIN, F.R.I.B.A. (Southern).

306



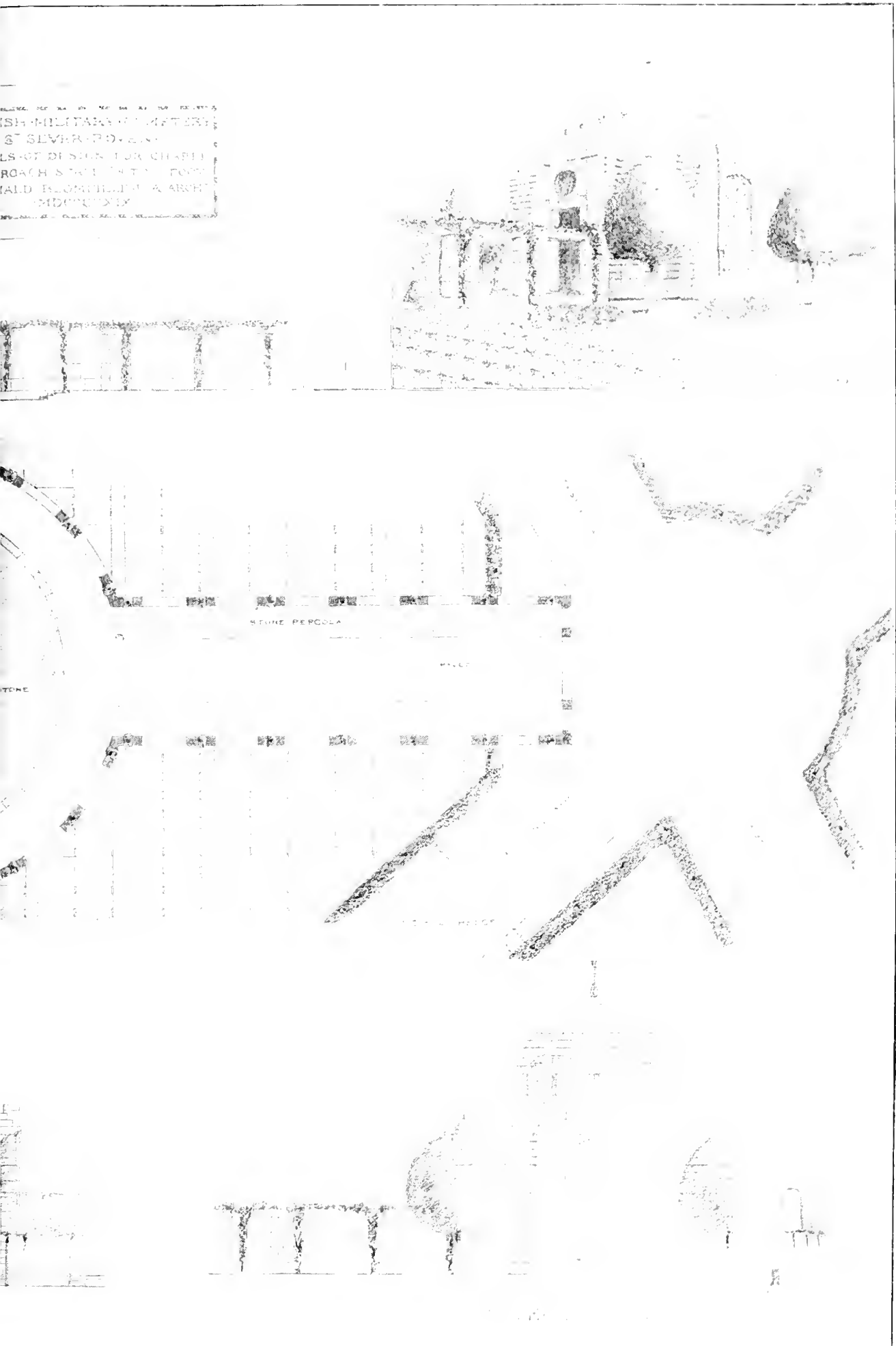
"DAILY EXPRESS" MODEL HOMES COMPETITION, CLASS II.
 First Prize (£200), Mr. H. E. Moss; Second Prize (£100), Mr. A. T. Scott, Architects.
 NOW ON EXHIBITION AT THE CENTRAL HALL, WESTMINSTER.



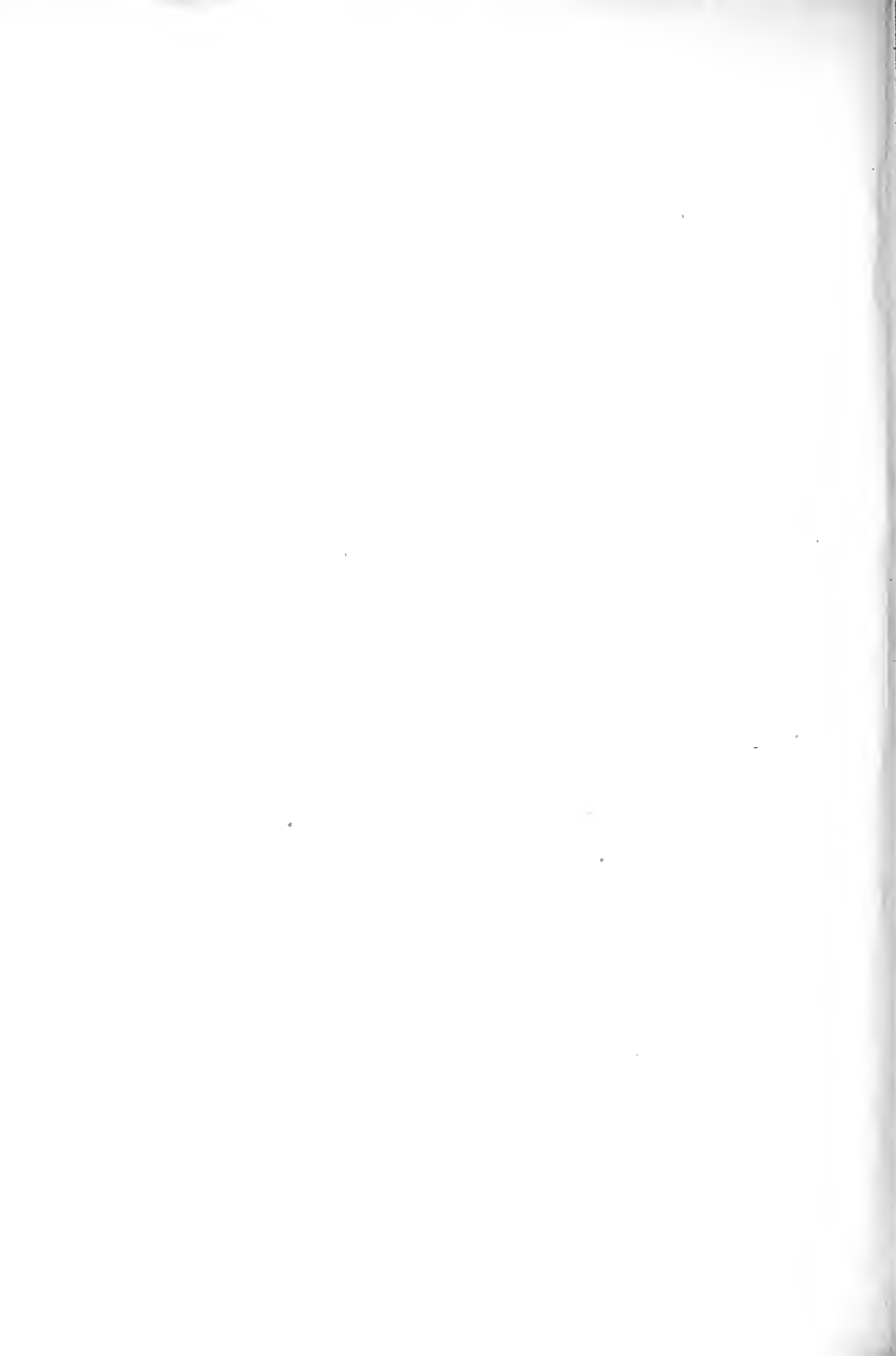


BRITISH MILITARY CEMETERY : DESIGN FOR C
SIR REGINALD BLOMFIELD

SH-MILITARY MASTERS
ST SEVER, ROUEN.
LS-OT DESIGN FOR CHAPL
ROACH ST. SEVER, ROUEN, FRANCE
ALD. BLOMFIELD & ARCHT
INDIANAPOLIS, IN.



EL AND APPROACH, ST. SEVER, ROUEN, FRANCE.
A., R.A., F.S.A., Architect.

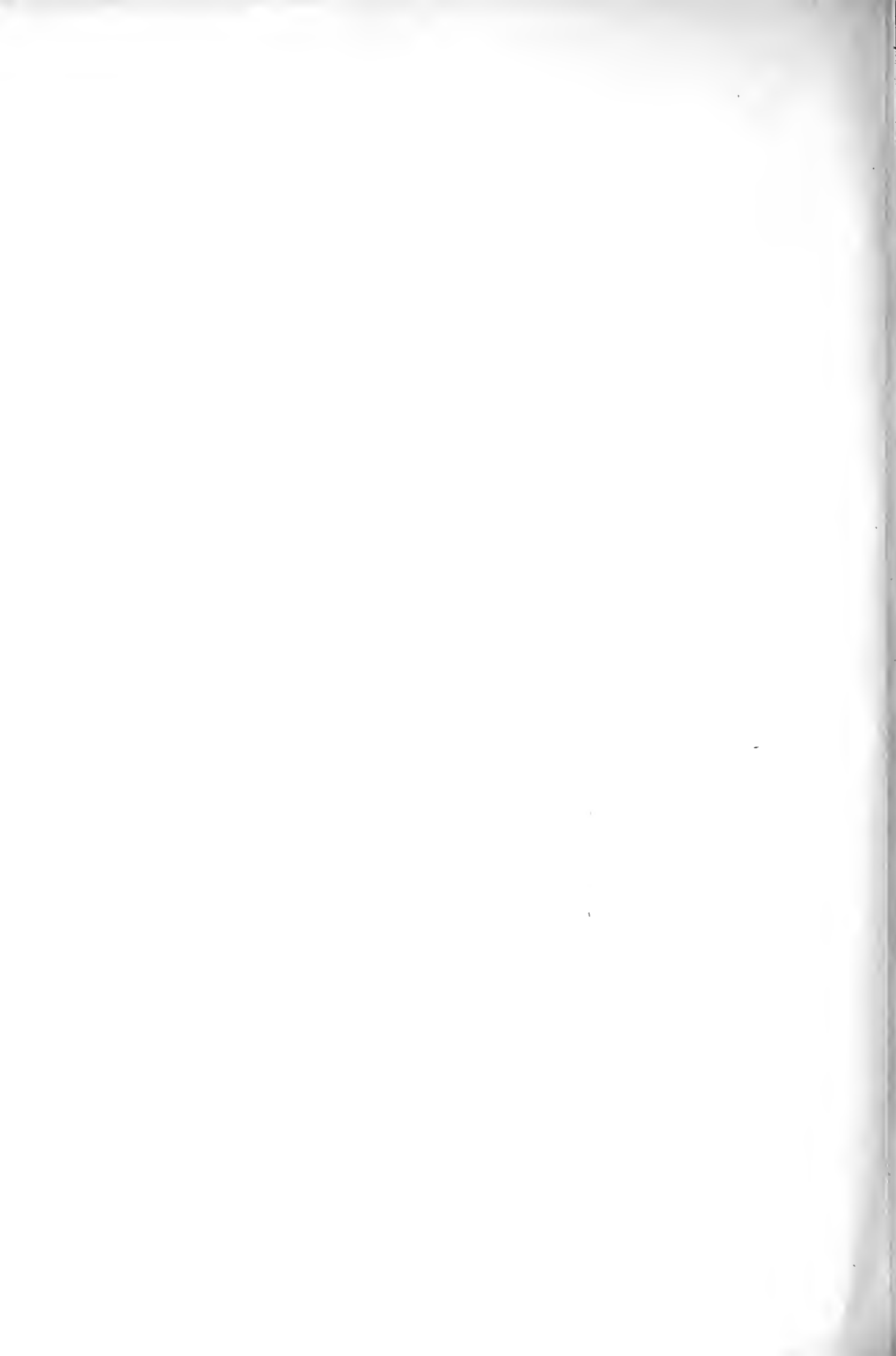


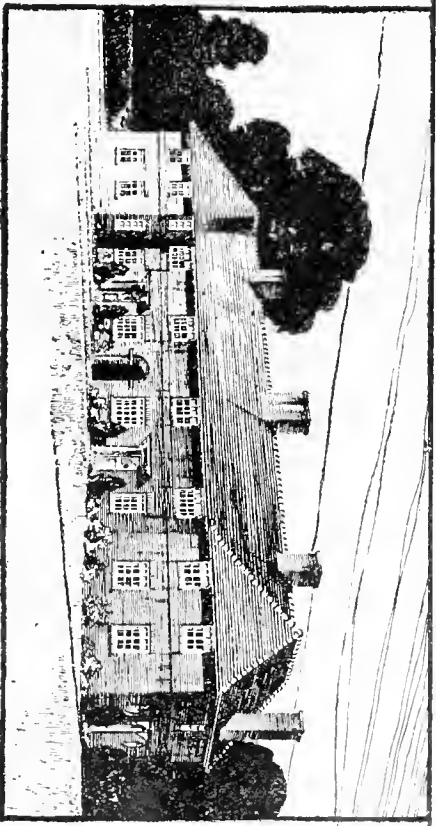
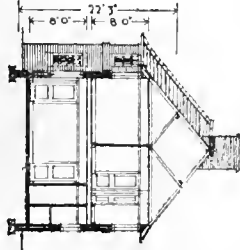
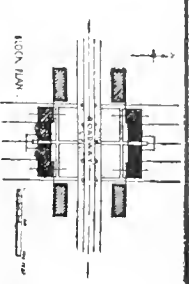


THE CARRIAGE ENTRANCE. THE S
M. HERBERT BAY

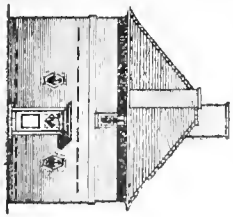


SECRETARIAT BUILDINGS, IMPERIAL DELHI.
F.R.I.B.A., Architect.





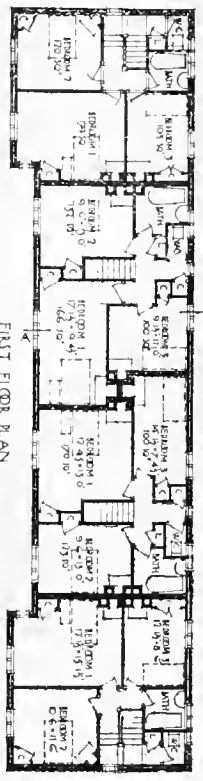
MIDLAND
INDUSTRIAL AREA
LEICESTER



END ELEVATION

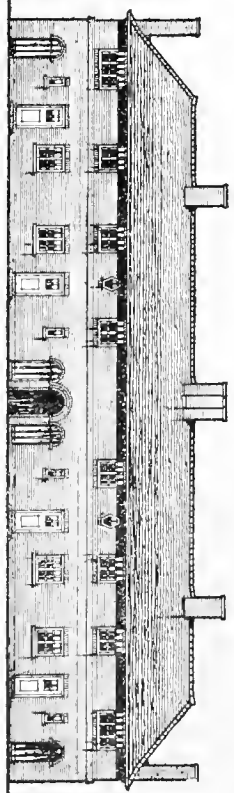
VIEW OF SOUTH FRONT

HEIGHT OF ALL ROOMS
FINISH CEILING 8' 6" CLEAR

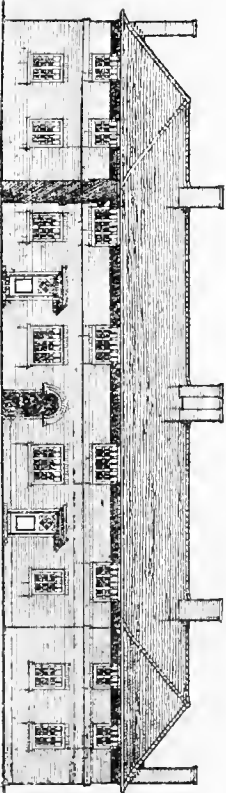


FIRST FLOOR PLAN

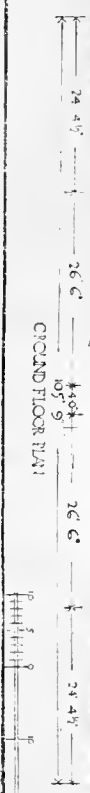
END COTTAGE	MIDDLE COTTAGE	MIDDLE COTTAGE	END COTTAGE
LANDING 120	LANDING 120	LANDING 120	LANDING 120
HALL 100	HALL 100	HALL 100	HALL 100
KITCHEN 90	KITCHEN 90	KITCHEN 90	KITCHEN 90
BATH 75	BATH 75	BATH 75	BATH 75
TOILET 45	TOILET 45	TOILET 45	TOILET 45
W.C. 45	W.C. 45	W.C. 45	W.C. 45
STAIRS 30	STAIRS 30	STAIRS 30	STAIRS 30
VERANDAH 15	VERANDAH 15	VERANDAH 15	VERANDAH 15
TOTAL GROSS	TOTAL GROSS	TOTAL GROSS	TOTAL GROSS
1400	1400	1400	1400
NET	NET	NET	NET
1200	1200	1200	1200



NORTH ELEVATION



SOUTH ELEVATION



GROUND FLOOR PLAN

"DAILY MAIL" IDEAL HOMES COMPETITION PRIZE DESIGN.

Messrs. EVELYN SIMMONS, Llc.R.I.B.A., and LESLIE GLENCROSS, A.R.I.B.A. (Midland Area).

(Continued from page 305.)

essential requirement is current ventilation and cross ventilation. The means to be adopted must be subject to local conditions in each case, and the general lines alone can be indicated here.

(a) Cubic Capacity. This is the first essential. Though the minimum of 250 cubic feet per worker (400 during any period of overtime) prescribed by S. 3. (1) of the Factory Act is seldom infringed, the provision of adequate ventilation may be rendered difficult owing to the close proximity of the workers to one another.

(b) Definite openings communicating with the outside air should be provided in every workshop, preferably opposite each other. The average machine shop and all similar one-story shops may be provided with louvres along the length of the roof ridges, or, better, with narrow openings where the roof meets the wall. Such louvres should be permanently open, and would generally ensure that the atmosphere will at least not be grossly bad.

(c) Fixed openings should be supplemented by the use of doors and windows (which will open) and fans. Fans are specially valuable to meet emergencies and abnormal conditions and provide for the thorough movement of the air.

(d) Local sources of impurity and heat production should be dealt with by the provision of hoods, exhausts, etc. Smoke and fumes from neighbouring chimneys may also have to be guarded against.

A close connection exists between ventilation and temperature. What is the best temperature depends on the character of the work and the habit of the worker. Sedentary workers require a temperature as high as 60° Fahrenheit, though it may be somewhat higher when the air is in motion.

Means of heating are usually restricted by practical considerations to some system of steam heating or hot-water pipes; the ideal form is no doubt by radiant heat, as may be seen from the excellent and invigorating conditions which prevail in many smithies and forges. Gas heated radiators in which the burnt gas escapes into the shop are not permissible.

Some responsible person should be specially detailed to supervise the ventilation and heating. The most complete installation for ventilation and heating—that is, the means—may be rendered ineffective by injudicious management or failure in proper or continuous maintenance. Rapid changes of temperature at different times of the day, varying circumstances of use and occupation, all require appropriate treatment. Mismanagement may arise through neglect to observe the prevailing conditions and to put in operation the appropriate appliance for the supply of air and heat. While it is for the management to provide the means, it is for the workers to aid in their use and application.

In commenting upon the above suggestions, it may be said that the general tendency in England is to under-heat rather than over-heat workshops. For high efficiency shops should be capable of being over-heated, so that on cold wintry mornings the workpeople will feel much more ready to commence work at once than if the shop is partly heated.

Cleanliness in the factory is essential not only for health but because of its bearing upon the self-respect of the worker, and it is desirable that floors should be of such a character that they can be washed down when necessary. They should thus be made of some smooth, hard, durable and impervious material as required under the Factory Act. A floor of this character, however, is not the most suitable for workers to stand upon, and consequently footboards for workers at machines should be provided.

Although the Factory Act and the regulations of the Home Office contain no regulations with regard to the provision of washing facilities, except where workers are engaged on processes in which poisonous materials are manipulated, there is a general agreement that facilities should be provided wherever possible. In the provision of lavatories there are one or two important details which should be borne in mind. Sufficient provision must be made for draining the floor, which should be

smooth, hard and impervious, and properly graded and sloped. Any walls against which basins are placed should be faced with impervious and easily cleaned material. The sanitary fittings should be very strong and durable and free from loose parts such as plugs and chains, and be adequately secured either to the walls or stands and have a good supply of hot and cold water. Waste pipes of a sufficient size are essential, and fewer stoppages are likely to occur if they discharge on to open floor channels at frequent intervals and avoid long runs of horizontal pipe. Washing troughs are regarded as preferable to separate basins.

Desirable as it is, no general provision of baths for workers has yet been achieved except in cases where the nature of the employment makes it compulsory under Home Office Regulations. In large factory communities, such as Port Sunlight, the problem is dealt with by the provision of bathing establishments, and although in some factories one or two baths have been provided, largely as an experiment, I have not heard of any ordinary factory being supplied with really adequate bathing facilities.

Drinking water should always be available, and is regarded as so essential that under the Police, Factories, &c. (Miscellaneous Provisions) Act, 1916, there is an order to the effect that provision shall be made at suitable points for an adequate supply of wholesome drinking water from a public main or other approved source, and at each point of supply it shall be clearly marked "Drinking Water." The provision of upward jets from which the workers can drink dispenses with the necessity for taps and cups.

Of equal if not greater importance than healthy working conditions, is the subject of housing, and though this does not come within the scope of my paper, I think it will be agreed that if Government control does as much for the workers in their houses as it has done for them in the factory during the past four years we may look forward to seeing them adequately housed.

For the maintenance of industrial efficiency the worker must be adequately fed. Apart from the recognition of the necessity for such provision, the great incentive in controlled factories to induce manufacturers to make the necessary provision for canteens and welfare work generally was the arrangement sanctioned by the Government under which the cost of the provision of canteen and certain other welfare work might be regarded as an expense chargeable upon Excess Profits Duty. Contingent upon this arrangement was the proviso that proposals for the provision of canteens must be submitted before the work is begun to the Secretary, Canteen Committee, Central Control Board (Liquor Traffic). In addition to the inducement just mentioned under the Police, Factories, etc. (Miscellaneous Provisions) Act, 1916, the Home Secretary is empowered to issue orders requiring the occupier of a factory or workshop to make reasonable provision for preparing or heating or taking meals for workers employed therein. The outcome of all this was the issue of a pamphlet by the Health of the Munition Workers Committee, a very useful document, stating the general principles which should regulate the planning of canteens. The site should be in a central position, easy of access to all parts of the works. No objection, however, was raised to placing the canteen outside the works altogether if no suitable site was available within the factory precincts. As a matter of fact, the best position for a canteen would be on the boundary of the works, so that it could be entered from within or from without the factory. If placed outside the building it can then be used for concerts, etc., after working hours. The building should include a dining-room, kitchen, scullery, larder stores, catering office and sanitary accommodation. The stores should open upon a yard, with easy access for tradesmen's carts, etc. The system of service would be from a counter, therefore the kitchen and scullery should abut directly upon the dining-room. Eight and a half square feet per person seated is suggested as the allowance in the dining-rooms. Separate dining-rooms for the two sexes are

advocated, and it is suggested that they should be so designed that they can be thrown together to form a single hall for social or educational purposes.

As regards the medium for cooking in small canteens, gas is suggested as the most efficient; in larger ones steam and electricity is recommended. For washing up, teak sinks are considered more suitable than earthenware for cleaning crockery, but earthenware or galvanised iron sinks are advised for the preparation of vegetables. Attention is drawn to the fact that there will be a percentage of the users of a canteen who require "warming up" facilities, and it will be necessary to provide warming closets or hot plates.

It was suggested that the building should not be like a barrack, but should have an agreeable and attractive appearance. This was not quite consistent with the recommendations as to construction and cost, which was considered should be about 5d. per foot cube, exclusive of central heating and lighting, or, taking a canteen seating 500 as an example, the total cost, including building and equipment, should be about £7 per seat. Many canteens were erected at these prices two years ago, but I doubt whether from an architect's point of view they quite adequately fulfilled the requirements with regard to appearance. Latterly, of course, it has not been possible to erect at anything like the price mentioned per foot cube or per head, owing to the continued rise in prices.

Quick service is essential. The customers are not waited upon at the tables (except under special circumstances), but go to the counter for what they require, taking it themselves to the tables. The method of payment is usually by ticket, or disc, which the customer buys at the ticket office when he enters the canteen, to the value of food required, and gives in exchange when he is served. The relation of this ticket office to the entrance and the counter is of considerable importance, and should be so arranged that there is no interruption to the flow of traffic.

In the majority of factories some provision is made for the treatment of injuries, but inspection shows that there is need for improvements, especially in treating minor injuries. No factory of any size can be regarded as well equipped unless it possesses a surgery with a trained nurse in charge. This should be specially designed for the purpose, and should comprise a surgery, rest room, store and nurses' room. In factories where both sexes are employed a second room is desirable. Without going into details, it will be sufficient to say that the general construction and finish should be such as usually appertain to hospital construction. In large factories a surgery of this kind, however centrally placed, cannot be equally accessible to all parts of the works, and it is considered advisable (and in certain types of factory demanded under an order of the Home Office) to maintain first-aid boxes in the workshops, which may take the form of a cupboard containing first-aid materials. Such a provision will enable a workman who sustains a slight injury while at work to have it dressed without losing the time required to go to the surgery.

Apart from the treatment of injuries is the question of sickness and ill-health, the importance of which is greatly increased owing to the widespread introduction of women into industry. Sickness, whether due directly or indirectly to the industrial occupation, is harmful both to industrial efficiency and output. This had been recognised before the conditions prevailing during the war brought it home with so much force, with the result that there has been an increasing tendency to appoint welfare supervisors, whose functions are to keep records of individual workers, investigate cases of lost time, sickness, low output, incapacity, working conditions, home visiting, feeding arrangements, training and instruction, housing, transit and recreation.

In the early stages of this movement it was chiefly the woman worker who was looked after, but the Committee sitting in January,

1916, recommended the appointment of welfare supervisors wherever 100 boys are employed, it being recognised that the demoralising influences, such as high wages, restlessness, lack of control, which had become accentuated by the war, were in special need of control. I have had an opportunity on one or two occasions of discussing this question with directors of large factories, and I was very much impressed with the view they took of the importance of the subject and its probable effect upon the relations of the employer and employed in the future. The plans they are making go very much further in their provision for the welfare and education of the boys than has yet been required or suggested. Of extreme importance to all, but especially to boys, is the question of recreation, a fact which has been recognised by many large employers of labour by the provisions of playing fields and parks in connection with their works, a movement which is rapidly gaining ground, and I think we may look forward to the time when every works of any size will be provided with its own playing field, gymnasium and baths.

NEW PRESERVATIVES FOR CONCRETE AND TIMBER.

On Tuesday, April 29, there was a gathering of engineers, architects and others interested in building and similar operations, to witness a practical demonstration of various specialities which are about to be put upon the market by The Torbay and Dart Paint Company, Ltd., of 26-28, Billiter Street, London, E.C.3 (a company promoted by the proprietors of "Torbay Paint," who will act as managers for the new concern).

These included "Novoid," a composition in powder form which, when added to the cement and aggregate used in the production of concrete, completely amalgamates with the cement and causes a chemical action to be set up when in contact with water, increases the strength of concrete, and, by filling up any voids (hence its name), renders the entire mass water, acid and oil proof, according to the proportion of Novoid used.

"Roxet," is a colourless solution, manufactured on the "Novoid" principle, for coating existing cement, concrete, stucco, etc., which "sets like a rock" (rock set), and renders the surface impervious to water on the destructive action of the elements.

"Rencrete" is a liquid solution similar to "Roxet," but carrying colour in a variety of shades, which "renders concrete," cement, plaster, etc., decorative as well as waterproof.

"Quelle" is a preservative and insect-rot-weatherproof stain, which renders timber fire-resisting and (beyond charring) impervious to flame. Green timber treated with Quelle will not absorb moisture, shrink or swell.

Mr. H. Craighill Badder, the manufacturing manager and an experienced specialist in building construction and concrete work, proceeded to demonstrate the utility and advantages of these specialities. He drew attention to a series of concrete tanks made as follows:—

"A" Tank consisted of three parts sand and one part Portland cement with 15 per cent. Novoid added. "B" Tank, two parts sand and one part Portland cement with 15 per cent. Novoid added. "C" Tank, two parts granite chippings with dust, and one part Portland cement with 15 per cent. Novoid. "D" Tank, two parts sand and one part Portland cement only.

After the weights of these tanks had been carefully checked by those present, they were submitted to a percolation and absorption test and possibly an hour later they were then re-weighed. In the case of the Novoid treated ones, it was found that the weights remained the same and were not affected in any degree, whereas the untreated one, weighing before the test 12 lbs. 14½ ozs., had absorbed over an ounce of water. The results were verified by the breaking of the tanks, when it was seen that the water percolated some 3.16th inch into the untreated concrete, while with the Novoid treated tanks there had been no absorption.

There was then undertaken a resistance test.

an alkali (hydrate of potassium) and pure hydrochloric acid respectively being poured into "Novoided" concrete tanks and left there for two minutes. The substance of the tank with the alkali was untouched, but, as might have been expected, the acid had slightly penetrated the surface of the other. Mr. Badder, however, explained that the tanks had only been made a few days, and had not had sufficient time to properly harden, but that if they had been allowed to "set" for forty days the acid could not penetrate.

Mr. Badder next pointed to a number of concrete slabs coated with Roxet and Rencrete, and remarked that Roxet was a colourless solution and Rencrete a coloured solution, each perfectly weather-resisting. Quite a large range of colours are available in Rencrete, and bricks can be treated as well as concrete or cement stucco. A couple of laboratory pieces coated three months ago he asked someone to scrub with pumicestone in water. This was done, but the endeavour to remove the coating was unsuccessful.

Two concrete slabs, one "Roxeted" and "Rencreted" and the other untreated, had hydrochloric acid poured upon them. The surface of the latter was disintegrated, while that of the treated specimen was practically untouched.

Mr. Badder then took samples of Novoid in solution and demonstrated the result, showing a solid product, and explained that this material sets in the concrete and hardens it and makes it solid. It all condenses, and the longer it is there the harder it gets. It rather slows the time of setting, but with 10 per cent. Novoid, he said, a 10 per cent. better result would be obtained than with ordinary concrete after the same interval. In fact, whatever percentage is put in, a proportionally better result in strength would be obtained—that is, with tensile and crushing tests—besides making it weather and water proof. In reply to a question, he stated that if not coke were turned on to a gas-retort house concrete floor made with Novoid it would not harm or crack the surface. He also stated that Novoid permits the adoption of seashore gravel as an "aggregate" for concrete, as it has the effect of neutralising the salt contained therein, which has hitherto prevented the use of this kind of gravel. Novoid does not kill lime; it makes a chemical union with it, and is based upon that very fact.

Mr. Badder then directed attention to the qualities of another speciality, Quelle. A large number of samples of wood, paper, linen, flannelette, and a sack, all treated with this material, were exhibited, all weather, fire, and rot-resisting. Matches were freely used, but without success, in endeavours to set fire to these various substances, charring only resulting. Pieces of wood were exhibited treated in different colours, for Quelle will carry certain colours—pitch pine, oak, mahogany, and walnut. There was also a piece of linen, stretched in a wood frame, both treated with Quelle. It was pointed out that the linen so prepared, in addition to being fire-resisting, does not absorb moisture. For aeroplane work dope can be put over Quelle and the linen will not catch fire. A powerful blow-lamp was requisitioned and applied close to the linen, and there was no more than charring. Mr. Badder explained that if the fire was so intense that it charred the fibres the fabric might give way; but it would have to be a very severe fire to do this. The blow-lamp was then placed inside the piece of sacking, and the sacking appeared to be none the worse for the experience. The same with the flannelette. The coating power of oil paint over a "Quelled" surface is said to be twice that of untreated wood, and the oil paint is protected from oathing fire by the Quelle underneath.

Quelle can be applied to practically any stuff, and as its effect is to prevent fire spreading it might be used for materials in theatres—on floors, scenery, etc.—but at present the company are directing their attention to treating building materials.

The Aberdeen T.C. has approved plans for extensions to Robert Gordon's Technical College. Mr. J. A. Allen is the architect.

THE HOUSING BILL IN PARLIAMENT.

SOME SWEEPING PROPOSALS.

The Housing Bill came on again last Wednesday before Standing Committee A of the House of Commons, when Dr. Addison said he had hoped to finish the Committee stage of the Bill during that week, and that he was aiming at obtaining the third reading of the measure before Whitsuntide.

On Clause 19, which relates to the making of by-laws respecting houses divided into separate tenements, long amendments were on the paper in the name of Dr. Addison.

One of them proposed that by-laws might be made, among other things, for fixing and from time to time varying the number of persons who may occupy a house, or part of a house, which is let in lodgings or occupied by members of more than one family, and for separation of the sexes therein; for the registration and inspection of such houses; enforcing drainage and promoting cleanliness and ventilation; requiring provision adequate for the use of and readily accessible to each family of sanitary and washing accommodation; accommodation for the storage, preparation, and cooking of food; for the keeping in repair and adequate lighting of any common staircase in such house; for securing stability, and the prevention of and safety from fire; for the cleansing and redecoration of the premises at stated times; and for the paving of the courts and courtyards.

NO FAITH IN LOCAL AUTHORITIES.

Dr. Addison explained that Section 15 of the original Act provided that local authorities should require as a standard that houses should be fit for human habitation. There were, however, thousands of houses shockingly unfit for human habitation. It was clear that they could not rely on a general phrase as a guide to local authorities in dealing drastically, as they might have to do, with owners. The local authorities must have specific guidance rather than a general phrase, which they might have to interpret for themselves. Therefore, he thought it better to set out what they required as the minimum of proper accommodation, bearing in mind particularly tenements let out for separate family accommodation. The best way of doing this was to take power to prescribe standard by-laws dealing with the minimum requirements. The clause, amended as he proposed, would go a long way beyond any provisions hitherto existing. It would also reenact a number of provisions contained in existing Acts. In enforcing the by-laws a local authority might find that the immediate landlord was unable—he might be an impecunious person—to make alterations required, and, therefore, power was taken to proceed against the owner or other person having an interest in the property.

SETTING ASIDE CONTRACT CONDITIONS.

A local authority, proceeded Dr. Addison, in the event of failure to carry out necessary alterations, would also have power itself to do the work and to recover the costs. It was further proposed that where an authority had failed to make any by-laws dealing with these matters the Local Government Board might make by-laws for the authority. In some cases neighbourhoods of fairly substantially-built houses had changed their character, the houses having been gradually let off in tenements, but there were conditions in the leases or covenants which prohibited the alterations which the by-laws required. This was the case in many parts of London. It was therefore proposed that in such circumstances the conditions of the covenant or contract might be set aside. In certain cases, or, for instance, where the local authority had done the work or it had been done by a superior landlord, a charging order might be made on the premises in order that the necessary costs might be collected. The question of the amount and duration of the charge, the annuity, was not one which the local authority was competent to decide, and therefore in respect to the amount and duration of the annuity which the charging order prescribed to defray the cost provision for appeal to an arbitrator appointed by the President of the Surveyors' Institution was made. Local authorities themselves might have acquired an interest in unsatisfactory property and be prevented from complying with their own

by-laws by the covenants. In such cases it was proposed to extend to them also the privilege of having the conditions set aside. The authority in London would be the London County Council, and in the City of London the Common Council.

"LEGISLATION GONE MAD."

Colonel Wedgwood (Co. L., Newcastle-under-Lyme) moved to omit paragraph (a), which gives power to fix from time to time the number of persons who may occupy a house. The provision, he said, sounded like grandmotherly legislation gone mad.

Dr. Addison replied that, as a matter of fact, the provision in question had been the law of the land since 1875, for it was taken word for word from the Public Health Act of 1875. The provision was a very desirable one.

Mr. Lorden (Co. U., St. Pancras, N.) hoped guidance would be given to local authorities as to how they should work this provision.

Sir J. Tudor Walters (Co. L., Brightside) said that the object in view was to prevent the working classes being herded like cattle by making it the duty of the local authority to provide a sufficient number of houses.

Colonel Wedgwood's amendment was eventually negatived, and the amendments outlined by Dr. Addison were adopted, the clause as amended being added to the Bill.

PURCHASE OF DWELLINGS.

On part three of the Bill, which relates to the acquisition of small dwellings,

Colonel Royds (Co. U., Grantham) moved an amendment providing that until 1924, £800 instead of £500 should be the limit on the market value of houses in respect of which advances might be made.

Mr. J. Parkinson (Lab., Wigan) asserted that if they made the figure £800 they would be getting beyond the working classes.

Sir A. Boscawen (Parliamentary Secretary, Board of Agriculture) said that the Government were willing to make the figure £700.

The amendment was withdrawn, and the figure of £700 was adopted.

An amendment proposed by Mr. G. Locker Lampson to the effect that 90 per cent. instead of 85 per cent. of the amounts might be advanced to purchasers was defeated by 22 votes to three.

USING DERELICT HOUSES.

Dr. Addison moved the following new clause:—"When it is proved to the satisfaction of the County Court on an application by the local authority or the lessee of a house that, owing to changes in the character of the neighbourhood in which such house is situate, the house cannot readily be let as a single tenement, but could readily be let for occupation if converted into two or more tenements, and that the provision of the lease do not admit of such conversion, the Court, after giving any person entitled to any interest in the house an opportunity of being heard, may vary the terms of the lease so as to enable the house to be so converted subject to such conditions and upon such terms as the Court may think just." He said the clause would apply to many houses, especially in North London. It would bring into use a great deal of accommodation which was now derelict.

The clause was read a second time, and passed through Committee.

Dr. Addison pointed out that in London there was a duplication of authorities, and moved a new clause under which the County Council would be the authority for clearance schemes, and the Borough Councils the authorities for reconstruction schemes and for new buildings within the boroughs. The County Council would be the authority for areas outside the boroughs. Where there was land available for the people of an adjoining borough the authority should be the County Council.

The clause was read a second time.

The Keynsham R.D.C. has agreed to build houses as follows: Keynsham, 60; Compton Dando, 6; Corston, 6; Kelston, 6; Priston, 8; Northstoke, 2; Queen Charlton, 2; Saltford, 8; and Whitechurch, 8. Mr. J. Bevan has been appointed architect for the scheme.

Correspondence.

CHEAPER THAN BOARDING AND BETTER.

To the Editor of the BUILDING NEWS.

Sir,—Page 12 of your issue of May 7 reveals the price of "Poilite" tiles. It would be of special interest, as we believe, to your readers to learn that "Poilite" lining sheets are now available—unrestricted by Government control.

Should you see your way to add words to this effect before the words "at present above prices are subject to a premium," etc., we think your readers will appreciate that even if 1 in. boarding is expensive, "Poilite" is available at much less money.—Yours faithfully,

F. R. LUKE, Manager,
Bell's United Asbestos Co., Ltd.,
Southwark Street, London, S.E.1.

[We are sure they will, and with good reason.—Ed., "B.N."]

OFFICES FOR DEMOBILISED ARCHITECTS.

Sir,—Many architects are experiencing great difficulty in finding office accommodation on demobilisation.

Those in practice who have been fortunate enough to retain their offices during the war, will be rendering a very real service to young demobilised architects by letting them, at reasonable rent, any spare accommodation they may have. Will those able to help in this way, please send full particulars of what they can offer to F. R. Yerbury, Secretary, The Architects' Demobilisation Committee, The Architectural Association, 35, Bedford Square, London, W.C.1.

LEGAL INTELLIGENCE.

RUISLIP-NORTHWOOD TOWN PLANNING SCHEME.—On Monday, Tuesday, and Wednesday, May 5, 6, and 7, Mr. Justice Bailhache heard a motion by Mr. James Ellis, at a Divisional Court of the King's Bench Division, to set aside an arbitration award under the Ruislip-Northwood Town Planning scheme. The respondents were the Ruislip-Northwood Urban District Council, Mr. Ellis, who pleaded his case in person, said it was a motion which sprang from the Housing and Town Planning Act of 1909, which was supplemental to the Housing of the Working Classes Act of 1890, the off-shoot being the Ruislip-Northwood Town Planning Scheme. On January 18, 1911, the Ruislip-Northwood Council made application to the Local Government Board to prepare a scheme, and from that date no dealings could take place in respect of his property at Ruislip, nor could works proceed. The scheme was submitted two years later, and the Local Government Board having modified it, approved it on September 7, 1914. He was the owner in fee of the Orchard Estate, Ruislip Street, with a frontage of 400 ft. This was within the area prescribed by the scheme, and his contention was that it was seriously affected and injured by the provisions of the scheme, and he claimed £2,801. The evidence occupied most of the three days' hearing, and the facts are set forth in the Judge's summing up, as follows: His Lordship said it was a case in which there was a dispute arising out of the town-planning scheme. In that scheme, Mr. Ellis was prohibited from building his houses nearer to the High Street, Ruislip, than a distance of seven or eight feet. Mr. Ellis contended that his property had thus been injuriously affected, and that he was therefore entitled to compensation. The District Council contended to the contrary. The matter then went to arbitration, and it was for him to decide on that. Mr. Ellis also had a motion to set aside that award altogether on a variety of grounds. He had decided, however, to dismiss the motion, and would therefore deal with the case of the arbitrator. The Housing and Town Planning Act of 1909 enabled District Councils to promulgate schemes for house and town plans under which it was desired that Councils should have greater control over the development of the district than they had had under the Public Health Act. In January, 1911, application was made by the Ruislip-Northwood Council to the Local Government Board for authority to prepare a scheme, which, with modifications, was finally approved in September, 1914. He was not concerned with the scheme in its general out-

line, but only as it affected Mr. Ellis's land, which was a long, narrow strip, 30 or 40-ft. in depth in places, and some 400 ft. in length, abutting on the ancient highway, 30 to 35-ft. broad, opposite the land in question. Mr. Ellis's land was bounded at the back by a cemetery, on the north by a police station, and on the south by a road some 18-ft. wide leading to the cemetery, and beyond the road was a shop set back seven or eight feet from the highway. The scheme as adopted provided a building-line beyond which no house on Mr. Ellis's land should be built, and set back the line of frontage by some seven or eight feet. Under these circumstances Mr. Ellis complained that his land had been injuriously affected, and claimed compensation. There was no doubt that his land was seriously affected, and that being so the question was whether compensation was permissible. Whether it was or not depended upon the Town Planning Act of 1909. Mr. Ellis had set up a claim within the specified time, and had been referred to the arbitrator, who had set up four alternative awards, one of which was that Mr. Ellis's claim was barred under Subsection 2 of Section 59 of the Act. Another paragraph of the award referred to the loss of income on the land from January, 1911. It appeared, proceeded his Lordship, that Mr. Ellis proposed in January, 1911, and shortly after the resolution of the Council, to build some sixteen shops upon that frontage, and entered into a contract with a gentleman now dead to build the shops, but the contract was never proceeded with. Mr. Hollidge built two shops near the police-station. They were built in defiance of the scheme, and the builder was summoned before the Uxbridge magistrates. The building-line at that time was said to have been constituted, not by the police-station, but by a house which had then been built beyond the southern end of Mr. Ellis's land, and divided by the road leading to the cemetery. The magistrates decided that the house constituted the building-line, and in consequence the contention of Mr. Ellis had gone through various courts till it had reached him. His Lordship was now of the opinion that the house at the southern side did not constitute the building-line governing Mr. Ellis's land and certainly not that portion near the police-station. It had to be borne in mind, however, that this Town Planning Scheme prescribed a building-line which was some seven feet behind the frontage of the ancient highway. What counsel for the Council had said was that this building-line was a line prescribing the space about buildings, and therefore land thus injuriously affected came within Subsection 2, and no compensation was payable in respect of it. He had come to the conclusion that the arbitrator, in holding that this claim for compensation was barred in respect of (a) and (b) by Section 59, Subsection 2, of the Town Planning Act, also came to the conclusion that it would be barred by Subsection 1 of the same Act. His Lordship concurred with that, and found that so far as the award was concerned, no claim for compensation by Mr. Ellis could stand. It seemed to him a case of singular hardship, for not only did the scheme take away a portion of the frontage—a small matter in itself—but it prevented him building at all on a small strip of land. Mr. Ellis asked for a stay of execution, pending an appeal, which his Lordship granted conditionally that he set down notice of appeal within three weeks.

OBITUARY.

The death has taken place of Mr. Alexander Skirving, F.R.I.B.A., one of the best-known architects in Glasgow. Among his work was the design for the memorial which marks the battlefield of Langside. Mr. Skirving took a share in the public life of Cathcart parish, and was also well known in Masonic circles. He was a past Crown Architect.

The sale by auction of the major portion of the town of Shaftesbury, Dorsetshire, is announced to take place on May 27, 28, and 29. An inset in the catalogue quaintly intimates that lots 75, 191, and 243—the fire station, the market house, and the cattle market—are "withdrawn from sale," having been purchased by the Corporation of Shaftesbury.

Several correspondents ask if some means cannot be devised for ventilating the public telephone cabinets in our railway stations and other places. During the warmer weather, when everybody seems to want to use the 'phone, the stuffiness is intolerable. Should you follow a flapper, the deadly atmosphere may be mitigated by traces of scent, but the prevailing odour is overwhelming.

Our Office Table.

It has been decided that the King's College London, war memorial shall take the form of an athletic ground and pavilion. A tablet or brass with a suitable inscription will also be placed in the chapel. An influential committee has been formed, and an appeal is being sent to all old students and friends of the college whose addresses are known. It is hoped that all interested who do not receive the appeal will communicate with the hon. secretary, War Memorial Fund, King's College, Strand, W.C.2.

Mr. J. Lawton Wingate, the recently elected president of the Royal Scottish Academy, was entertained at dinner by the Scottish Arts Club in their rooms at 24, Rutland Square, Edinburgh, recently. Mr. J. A. Ford, president of the Club, presided over a company of about a hundred. Mr. W. D. McKay, R.S.A., in proposing the toast of "The Guest," referred to the gradual but steady development of Mr. Wingate's art from the elaborate studies of the Hamilton days to those emotional lyrics of more recent times, which had given his work so unique a place in the history of Scottish landscape painting. That position was not lightly come by, for no man had spent more effort and brain sweat on the attainment to his present position. Mr. Wingate, in reply, expressed the hope that the Royal Scottish Academy would never know a period of diminished activity. Alluding to its early history, and to the self-denial of the founders, Mr. Wingate said the ideal in the minds of the men who founded the Academy was the formation of a national collection of pictures. They purchased the Etty pictures in the second or third year of the Academy's existence, and this stimulated the Royal Institution to make other purchases, and thus was laid the nucleus of the National Gallery of Scotland.

A Swiss company, the Société Romande d'Electricité, has pierced a tunnel for diverting the water from the lake through the valley of Ormonts, to the rivers Grand-Eau and the Rhone, and thence to the Mediterranean. Before the completion of the tunnel the water previously flowed by the rivers Saone and Rhine to the North Sea. The tunnel was driven from two sides, one length being nearly 2½ miles long, the other barely 1,000 ft. The setting out was so perfect that there was hardly any error either in plan or profile. The water is for the use of an important hydro-electric power works, the completion of which has been much delayed owing to the war.

The Council of the Society of Architects have under consideration the question of a War Memorial which shall serve to record the part taken in the war by the many members who served in H.M. Forces, and to perpetuate the memory of those who in doing so gave up their lives. The suggestions which have been made so far include a tablet or similar form of memorial, the extension of the Society's library, and the completion of the Society's building scheme. It is thought that many members would welcome an opportunity of subscribing to a special fund for this latter purpose. The Council invite members to express their views on the subject generally, and to make observations on any of the proposals already made; or to put forward others which they think might be more suitable.

In recognition of the public services rendered to the museums of the country by the National Art-Collections Fund, the trustees of the Wallace Collection have placed at the disposition of the fund for the purposes of an office an unoccupied room in the building. The practice originated by the corresponding society in France, the Société des Amis du Louvre, which has for many years past been accommodated in the building of this country, is thus being followed in this country. Communications should therefore in future be addressed to the Secretary at Hertford House, Manchester Square, W.1.

How far women have advanced in the exercise of crafts is happily demonstrated by an exhibition which has been promoted by a group of the members of the Glasgow Society of Lady Artists, and is being held in the rooms of the Society at Blythswood Square, Glasgow. It contains attractive examples of work in metal, leather, china, and other media, all combining utility and artistic design and treatment. Particularly noticeable are the tea and coffee sets by Miss Meikleham Brown, the embroidery of Miss H. Paxton Brown, jugs by Miss Amour Watson, and the bookbinding by Miss Mary Robinson; while a series of poster designs by Mrs. J. Haswell Miller deserve good mention.

Excellent progress is being made with the arrangements for the Housing and Health Exhibition, promoted by the Corporation of the City of Glasgow, which is to be held in the Kelvin Hall of Industries, Glasgow, from Wednesday, October 8, to Saturday, October 25. Accommodation for stands is being quickly taken up, the success of the show being now a foregone conclusion. Great interest is being taken in the enterprise by architects throughout the country, and there is little doubt that the various competitions, for which £6,000 is to be awarded in prizes and premiums, will evoke enthusiasm. A sum of £4,000 will be given for the most meritorious working plans, models, drawings, and descriptions submitted for:—(a) Housing proposals suitable for the requirements of the industrial population within the city; (b) the internal arrangements of fittings, equipments, and furnishings proposed for such buildings; (c) proposal for renovation, reconstruction, and/or removal of unsatisfactory or insanitary dwellings; (d) a treatment of long lines of tenements in crowded streets, and providing open spaces for children's playgrounds; (e) suggestions for the provision of temporary housing accommodation during period of renovation. The remaining £2,000 will be expended in the acquisition of the preparation of essential aids to the thorough investigation of housing in the city.

Some tests have been carried out by Dr. J. E. Stead to determine if slag wool had the effect of inducing rust on steel. A polished knitting needle was inserted in the centre of a cylinder of compressed slag wool about ¾ in. thick. The samples were immersed and saturated in water and then allowed to dry in a warm place. After drying they were again immersed in water and again allowed to dry, this operation being continually repeated during ten weeks. The needles were drawn periodically for examination to see if they had rusted. No rusting was observed at the end of ten weeks. That, we know, will have been the experience of all who have used the perfected slag wool supplied under the designation of "Slagbestos" by Messrs. F. McNeill and Co., Ltd., which is generally specified by architects; but any others who have never yet used what is undoubtedly the best material for fireproofing, sound-proofing, and cold storage installations may be glad to note it.

In Standing Committee on the Civil Service Estimates last Thursday the Postmaster-General made a statement concerning the re-building of the General Post Office East. The original total estimate was £210,000, and the revised total estimate provided for an expenditure of £525,000. The probable total expenditure to March 31, 1919, was shown as £12,750, and the Vote required for 1919-20 was £60,000, leaving the amount required to complete the work £452,250. In addition, provision was made for the expenditure of a sum of £175,000, chargeable to the Telephone Capital Account. Sir Alfred Mond, the First Commissioner of Works, replying to Sir Joseph Walton, said no contract for the work had been entered into. The original estimate was £210,000. The large increase in the amount of the estimate was largely due to the abnormal increase in the cost of materials. Bricks, which were 25s. a thousand before the war, were now 90s. a thousand, while Portland cement had gone up 98 per cent., timber 160 per cent.,

switches 137 per cent., electric light installation 100 per cent., lead 100 per cent., and cheap glass 153 per cent. He did not think any real economy could be achieved by postponing the scheme.—Major Newman moved a reduction in the vote for the Ministry of Labour. He said the Employment Exchanges run by the Ministry of Labour were a failure and very unpopular. Yet the Government was increasing and endowing them with further power. Sir Alfred Mond said the workmen of better class would not go into exchanges in back alleys. The Committee adjourned until Monday without having voted on the reduction.

Messrs. Kerner-Greenwood and Co., of King's Lynn, have issued a new edition of their "Pudlo Book," of which all should get a copy, especially if interested in housing schemes, and its republication at this moment is especially opportune, as there is some danger that, in striving towards economy, the durability of the houses may, to a certain extent, be lost sight of. The Local Government Board, in their recently issued "Manual on the Preparation of Housing Schemes," gives a warning to the effect that 9-in. solid external walls would not in most localities prove weather-proof, but state that if protected by rough-cast they may be found adequate, and at the same time cheaper than hollow walls. In view of this, the specifications Nos. 1 and 2, given on page 13, are of special interest. At a low cost a wall proof against the fiercest driving rains is provided. As the authority mentioned also advises that the ground floors should be of solid construction, the necessity for preventing rising dampness will be met by employing a 1-in. Pudlo cement floating (as specification 5, page 15), laid on the concrete either as a finished surface or to receive wood blocks, boards, or linoleum. The proportions and thicknesses recommended in the book are the best and most economical for the respective situations. Most of them are arrived at as a result of experiments with an apparatus which was specially designed for testing the effects of water under various pressures upon cement renderings and concrete.

We hear that up to the end of last week considerably over a hundred works of art have been sold at the Royal Academy. For some occult reason no official record seems available of the pictures and sculpture purchased by the Chantrey Trustees for the Tate Gallery. It is stated, however, that they have bought Mr. Aneway Bram's "Line of the Plough" (34), Mr. F. W. Elwell's "Beverley Arms" Kitchen" (225), Mr. F. Derwent Wood's statue of "Psyche" (1648), and one of Mr. Reid Dick's bronze masks.

A statement issued by the Local Government Board says:—"It has been brought to the attention of the President of the Local Government Board that the present high market prices of building materials are tending to deter or to prejudice the rapid promotion of State-aided housing schemes, and he wishes it to be known that, by organisation and large-scale buying, contracts for the supply of building material have been entered into by the Government which shows a considerable saving on the ruling market prices. Local authorities and other promoters of State-aided housing schemes obtaining their building materials from or through the Ministry of Supply will be given the advantage of this economy, which, though difficult to express in a general figure, amounts to from 10 per cent. to 15 per cent. on the present market prices and in some cases more. Application should be sent to the Director of Building Material Supplies, Ministry of Supply, Caxton House, Tothill Street, London, S.W.1."

At the meeting of the Governors of St. George's Hospital last Thursday it was announced that the proposal to sell the hospital and rebuild elsewhere, made before the commencement of the war, has been abandoned, and that it has been decided to rebuild the hospital on the present site.

LIST OF TENDERS OPEN.

COMPETITIONS.

May 30.—Designs invited by the Buxton War Memorial Committee for a War Memorial Monument at prices not to exceed £500 and £1,000. No premiums offered. Designs and prices to J. M. Scott, Information Bureau, Buxton.

June 9. The Salisbury Town Council invite competitive plans for laying out two housing sites of about 10 acres each in connection with their housing scheme. Premiums of £50, £100, and £10 are offered for the three best designs, which will be judged by a professional assessor, such designs to become the property of the Council. Competitive plans to F. Hodding, town clerk, Municipal Offices, Salisbury.

June 16. The Beverley War Memorial Committee invite designs in competition for a war memorial to be erected at a cost not exceeding £3,000. A professional assessor has been appointed. Further particulars of L. Huntley, The Public Library, Beverley.

BUILDINGS.

May 26. Construction of a timber-framed lifeboat house and launching slipway at Selsey, Sussex.—For the Committee of Management of the Royal National Lifeboat Institution.—Form of tender, conditions, etc., from the engineers, Douglass, Lewis, and Douglass, 15, Victoria Street, Westminster, S.W.1. Tenders to the Secretary, Royal National Lifeboat Institution, 22, Charing Cross Road, London, W.C.2.

May 27. Erection of 10 pairs of cottages in Greatness Lane, Sevenoaks.—For the Sevenoaks Urban District Council.—E. W. Tipton, clerk, Arley Road, Sevenoaks.

May 27.—Erection of a permanent administrative block at the sanatorium, Morton Banks, Keighley.—For the Keighley and Bingley Joint Hospital Board. Drawings and bills of quantities obtained at the offices of Messrs. Moore and Crabtree, architects, Station Buildings, Keighley, on and after May 20. Tenders to N. Clarkson, North Street, Keighley.

May 29. Labour and materials required in alterations and additions to 44, Prince's Street, Stockport, in converting the premises into ladies' lavatories, etc. J. Atkinson, A.M.I.C.E., borough surveyor, Town Hall, Stockport.

May 30. The Commissioners of His Majesty's Works invite tenders, addressed to the Secretary, H.M. Office of Works, Storey's Gate, Westminster, London, S.W.1, for the execution of works and repairs to the buildings in their charge in the (1) Potteries; (2) Bolton; (3) Derby; (4) Tottenham, Edmonton, Hurnsey, Wood Green, etc.; (5) Southampton and Woolston; (6) Gloucester; (7) Portsmouth and Gosport; and (8) Sunderland districts. Schedules of prices, conditions, forms of tender and all particulars may be obtained on application to the Director of Contracts at above-mentioned address. Tenders must have a workshop in the district for which they propose to tender.

May 31.—Erection of 133 houses and the construction of roadways, footpaths, sewers, etc., required in laying out a site at Whitehaven.—For the Whitehaven Rural District Council.—J. S. Stout, 36, Lowther Street, Whitehaven, architect. Tender to E. B. Cross-dell, clerk, Union Hall, Whitehaven.

PROFESSIONAL AND TRADE SOCIETIES.

THE SURVEYORS' INSTITUTION.—The Roll of Honour, containing the names of members who have fallen in the war, which is being presented to the Institution by the President (Sir John Oakley), will be unveiled by him on the occasion of the annual meeting at 5 p.m. on Monday, the 26th instant.

INCORPORATED CHURCH BUILDING SOCIETY.—The annual general court of the Incorporated Church Building Society was held at 7, Dean's Yard, Westminster, on Thursday, May 15, at 3 p.m., the Hon. Sir E. P. Thesiger, K.C.B., being in the chair. Among those present were Lord Clifden, Sir Edwin Grant-Burris, C.S.I., Mr. E. G. Antrobus, C.M.G., and the Rev. T. T. Norgate, F.R.G.S., F.R.Hist.S. (secretary). To fill vacancies on the committee, the following gentlemen were elected: The Ven. Archdeacon White-Thomson, the Rev. B. G. Bourchier, the Rev. Preb. S. G. Ponsoby, the Rev. H. J. Stewart, Sir Cecil H. Smith, C.V.O., LL.D., and Sir Henry Craik, K.C.B., M.P.

Mr. E. Lloyd Owen, of Cricketh, is sending a notice of motion to the Registrar of Bangor University College, expressing "intense astonishment" at the action of the Welsh Heroes Building Committee in recommending, not an open competition, but inviting six architects only, and not a chairman among them. He also urges that a Faculty of Building and Architecture is urgently needed at Bangor University College.

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TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender: it adds to the value of the information.

DELI, GLAMORGAN.—For additions and alterations to the Council School, for the Glamorgan County Council. D. P. Jones, Cardiff, county architect.—Makin, J., 220, Inverness Place, Cardiff. Accepted. £2,642 10 2

DOWLAIS, WALES.—For repairing, painting, and decorating work to the Victoria Cinema, High Street, Dolwais. T. E. Rees, M.S.A., Merthyr Tydfil, architect.—Davies, L. P., Dolwais. £303 0 0
Watkins, Z., Penydaren. 298 0 0
Delacey, M., Dolwais*. 295 0 0
*Accepted.

HAMMERSMITH.—For repairs to main flue of No. 3 chimney at the electricity works, for the Hammersmith Borough Council.—Steeplejack Contracting Co. (recommended for acceptance).

HAMMERSMITH.—For repairs to glass roof of engine-room at the electricity works, for the Hammersmith Borough Council.—Froy, W. N., and Sons, Ltd., Street, Hammersmith. £45 4 6
Recommended for acceptance.

HAMMERSMITH.—For supply of cement for road works, for the Hammersmith Borough Council. Tenders recommended for acceptance:—Wouldham Cement Co., Ltd., 35, Great St. Helens, E.C. 3, £3 4s. 6d. per ton, delivered alongside Chancellor's Wharf, 2½ per cent. discount. To hold good for six months. Sacks charged at 2s. 6d. and credited at 2s. on return. British Portland Cement Manufacturers, Ltd., 4, Lloyd's Avenue, E.C. 1, £3 4s. 6d., ditto; Associated Portland Cement Manufacturers (1900), Ltd., £3 4s. 6d., ditto.

KING'S NORTON.—For the erection of a house at Meadow Hill Road, King's Norton, near Birmingham, for Mr. J. O. Hudson. Ingall, Bridgwater, and Porter, architects and surveyors, County Buildings, Corporation Street, Birmingham:—Elvins, T., and Sons. £2,770 0 0
Loud, T., and Sons. 2,375 0 0
Bishop, W. 2,300 0 0
Bryant, C., and Sons. 2,070 0 0
Harper, J. E., 76, Lombard Street, Birmingham*. 1,902 0 0
*Accepted.

WESTMINSTER.—For repairs and decorative work at 167, Grosvenor Road, for the Westminster City Council.—Kendall, R., Ltd. £88 0 0
Sims, J. R., 85 18 0
Inns, A. H., 83 0 0
Townsend and Pearson, Ltd., 69 4 0
Lavington (1916), Ltd., 60 0 0
*Recommended for acceptance.

WESTMINSTER.—For taking up existing stair-treads and fixing new Boulton's patent silicon nosing treads, as required from time to time, at public conveniences, for the Westminster City Council.—Sims, J. R., day work, per foot run, 6s. 10d., night work, 11s. 2d. (recommended for acceptance); Burton Bros., 7s. 11d. and 12s. 6d.; Mowlem, J. and Co., Ltd., 11s. 3d. and 15s.; Bovis, Ltd., 15s. and 25 per cent. above price for day work.

WESTMINSTER.—For repairs and decorative work at 16, Arnieway Street, for the Westminster City Council.—Inns, A. H., £118 0 0
Lavington (1916), Ltd., 75 0 0
Townsend and Pearson. 69 15 0
Sims, J. R., 64 10 0
Franks and Simons. 55 2 0
Day, W., and Son*. 53 0 0
*Recommended for acceptance.

The committee appointed in reference to the provision of a suitable monument as part of Lincoln's memorial to those who have fallen in the war, have invited Sir Reginald Blomfield, R.A., to visit the city and advise as to the best site for the erection of the monument, and as to its character, and also as to the most suitable person to design the same. An endeavour is to be made to raise at least £20,000, out of which a monument will be provided, and the balance applied towards an extension of the Lincoln County Hospital.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

RECEIVED.—H., Ltd.—W. and Son—T. B. B., Ltd.—J. F. and Son—A. H., Ltd.—T. C. B. J.—W. H. S. and Son—B. B.—L. G. and Sons, Ltd.—I. L. G. Co., Ltd.—J. H. and Co.—H. and G.—F. E. P., Ltd.—W., Ltd.—Cannock U.D.C.—I. C. S.

FAR EAST.—No.
S. W. H.—Kindly send.
D. F. R.—Valueless, of course, legally.
P. C. SHELDON.—We have published nothing thereon, and know of no good book. Try H. K. Lewis and Co., Ltd., 136, Gower Street, London, W.C.1; or W. and G. Foyle, 121, Charing Cross, W.C.

CHIPS.

At a cost of £12,000, the Alton Cottage Hospital is to be enlarged as a war memorial and a "Victory" monument erected.

The Heywood Town Council has increased the salary of the borough engineer and surveyor, Mr. J. B. Nuttall, £100 per annum, and that of the deputy borough engineer and surveyor, Mr. J. W. Gleave, by £65 per annum.

Islington's War Memorial is to be a considerable extension of the Great Northern Hospital in the Holloway Road, at an estimated cost of £100,000. Designs will be sought by competition, and Sir Aston Webb, P.R.A., will act as assessor.

The Federation of Engineering and Ship-building Trades has, as we expected it would, declined the offer of the Government to sell the Chopstow and Beachley shipyards to the trade unions, urging that the yards should be run under national ownership.

Mr. G. D. Oliver has tendered his resignation of the position of county architect of Cumberland, which he has held for upwards of twenty-seven years, the resignation to take effect on September 30 next, or at the date of the August or November meeting, as the County Council may desire.

The weekly return of housing progress issued by the Local Government Board for the week ended May 10 states that the number of building schemes submitted was 155, as compared with a weekly average, for the preceding eight weeks, of 90 schemes. They bring the total number of schemes submitted to 1,262, representing an area of more than 20,000 acres.

The plans and a sketch of the proposed War Memorial to be placed in St. George's Church, Stamford, have been submitted by Mr. H. F. Traylen, architect, to a meeting of the Church Council, when it was explained that it would be impracticable to place panels in the chancel to include all the names of those from the parish who have served in the war. It was therefore resolved to adopt a revised scheme, which will embody a proposal suggested at the previous meeting to have the names of all who have served inscribed on panels in the west end of the church, as well as a carved list of the fallen in an oak panel on the south side of the chancel and adjacent to the new reredos.

**BY DIRECTION OF THE DISPOSAL BOARD.
MINISTRY OF MUNITIONS.**



G. R.
**FOR SALE,
130,000 ROLLS
No. 1 TARRED and SANDED
ROOFING FELT,
lying at
R.E. STORES DEPOT, CANNING
TOWN, LONDON.**

Offers are invited for lots of 20,000 rolls, f.o.r. Plaistow and West Ham siding G.E. Ry. Co.

Full particulars and permits to view may be obtained from the Controller, Huts and Building Materials Section, Disposal Board, Artillery Mansions, Victoria Street, S.W.1. Telegraphic address, Hutments, Vic., London. Telephone, Victoria 1281.

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AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

War Memorial for the Duke of Portland, Berridale, Cuthness, N.B. Messrs. Sir Ernest George, R.A., and A. B. Yeates, F.R.I.B.A., Architects.

Strand, W.C.2

A Bungalow, Nairobi, British East Africa. View and plan. Messrs. Ernest George, R.A., and A. B. Yeates, F.R.I.B.A., Architects.
Huntercombe Place, Oxfordshire. Major Oswald P. Milne, F.R.I.B.A., Architect. Garden front.
reinforced Concrete War Memorial Church to seat 800. Elliptical system of arched construction. Views of exterior and interior, with a ground plan to scale. Mr. Maurice S. R. Adams, A.R.I.B.A., Architect.

Currente Calamo.

The most practical papers read at the R.I.B.A. Conference on Tuesday week were those by Mr. A. A. Hudson, K.C., Mr. E. J. Hill, the President of the Institute of Builders, Mr. Paul Waterhouse, and Mr. S. L. Dove, the President of the National Federation of Building Trade Employers. There was nothing very new in either of them, but they all urged common-sense reasons for sane practice which has stood us in good stead in the past, and which will probably guide us again when this tyranny of Government interference is overpast, in spite of the admiration of Major Barnes for Dr. Addison, and his doubts whether building for housing will ever be a matter for private enterprise. We are glad that the proposed Joint Consultative Board was set up, but we doubt whether it will succeed in formulating any schemes for establishing better conditions in the building trade. It is so obvious, as Mr. Hudson said, as we have said again and again, and say once more elsewhere this week, that high cost of labour and materials, insecurity in the ownership of land, and unfair finance legislation are the root causes of our present troubles, and nothing is more certain than that till these are grappled with our troubles will last. The one fundamental remedy is that which the whole nation is determined to apply presently—the restoration of freedom to legitimate private enterprise. If that is long delayed there is nothing in front of us but national shipwreck and Bolshevism. From that there is no sectional salvation. Architects and builders will best work out their own by the one effective means—in-season and out-of-season propaganda against the coming General Election.

As readers know, the Hammersmith Borough Council have communicated with the Local Government Board asking that H.M. Government will appoint a Special Commission or make a departmental inquiry into the finances and methods of working of the Water Board. The London County Council and Metropolitan City and Urban Councils and other constituent authorities within the area of the Water Board have been asked to support the request, and a number of these authorities have accepted the invi-

tation and written to the Local Government Board accordingly. A letter of the 15th inst. has also been received from the London County Council on the proposal of the council of February, 1915, that the Water Board should promote a Bill for the establishment of a more equitable method of dealing with the deficiency in the Water Fund. The matter is again under the consideration of the council, who ask whether the Board are taking any steps with a view to securing legislation on the lines suggested. It is evident that the need for action in this direction is accentuated by the increase in the deficiency and the near approach of the time when the Board will have to commence contributions to a sinking fund for the discharge of their debt incurred in acquiring the water undertakings. The approximate deficiency for the year ended March 31, 1919, is £511,250, and the estimated deficiency for the current financial year is £681,000. To the last-named figure must be added the additional expenditure arising from a recent decision of the National Joint Industrial Council for Waterworks Undertakings under which the hours of labour are reduced. This is estimated to amount in the case of the Board to £75,000 for a complete financial year. Four years hence the contributions to the Acquisition Sinking Fund will commence, and these on the annuity basis will amount to £144,000 per annum. Taking the estimated deficiency for the current financial year, plus the two additional amounts mentioned above, the Board must therefore contemplate a deficiency of £900,000 per annum, subject to such savings, if any, as may arise from more favourable conditions following upon the declaration of peace. The Water Board is taking things very coolly, one thinks: "It may be well to refer the question to an independent and impartial tribunal constituted by H.M. Government, leaving it to the Water Board subsequently to promote legislation to give effect to their findings if and when approved by the Government." The opinion of most people is that something much more drastic than that is wanted, and better management.

The legal battles now so common in the Courts between landlord and tenant resulting from our emergency legislation are deeply interesting to all owners and

occupiers of houses. A great change is taking place, and this is not the first time that social and economic reforms have been worked out in the dry, dull atmosphere of the Law Courts. The Increase of Rent Acts, 1915, 1918, and 1919, are having greater and more widespread effects than those temporary measures proposed or promised. The High Court, in the recent case of "Crook v. Whitbread," in dismissing plaintiff's appeal from the Croydon County Court, took a large and liberal view of the new Acts which is entirely favourable to existing tenants. Here the plaintiff landlord had given notice to quit and the defendant tenant refused to go. Finding that he could do nothing under the Act of 1915 the landlord took up the old Statute of 4 George II., and under this he sued the tenant for double rent, adding also an alternative claim for use and occupation of the house. But the two judges of the High Court held that since the Act of 1915 it could not be said that the tenant was contumaciously holding over, and so this ancient statute was no longer applicable. They also decided that, to allow the plaintiff's claim for use and occupation of the house, especially as he had refused defendant's tender of a quarter's rent, would be to destroy the very purpose of the Act of 1915. So the tenant scored all along the line: the landlord must pay the whole costs, and the rusty old Statute of George II. has this time been dug out in vain.

The Air Pollution Advisory Board of the Manchester City Council, of which Mr. E. D. Simon, M.Inst.C.E., is the chairman, has published a report which should be read by all of us just now, when the country is confronted with the necessity for economising our coal supply. It states that the people of Manchester use at least 1,000,000 tons of coal annually for domestic purposes, and, assuming that one-half, or 500,000 tons, are wasted, as estimated by the Royal Commission, and reckoning coal at only £1 per ton, the preventable loss is £500,000, in addition to £750,000 worth of damage done by smoke. Better methods would thus result in a total saving of 1½ million pounds per annum in Manchester alone, in addition to the saving of labour and the greater cleanliness in the houses. One improvement on the present practice would, he points out, be attained by providing for every

group of houses a central supply of hot water with coke-heated boilers. The hot water would be carried in pipes to the different houses, to the baths and sinks, at a temperature between 120 deg. and 150 deg. Fahr. The water could be then quickly raised to boiling temperature by a gas ring, and the provision of gas cookers would render the use of coal unnecessary in the warm months. Coal fires would then only be required in the cold weather for heating the rooms. It is pointed out that with proper insulation water can be conveyed long distances without serious loss of temperature. Tests have been made at Baguley Sanatorium. Hot water has been conveyed through seven-eighths of a mile of piping and dropped from 154 deg. to 140 deg. Fahr.—a loss which could probably be greatly diminished. The Manchester City architect has supplied particulars of a scheme for a supply of hot water for an estate of 600 houses where surplus heat from a destructor is available, and estimates that an additional sixpence per week on the rent would cover the cost on present-day prices. The report does not appear to advocate the use of hot-water heating for the rooms. For this purpose the temperature of the water would have to be higher than that stated above, and the initial expenditure on piping and radiators would probably be comparatively high. But why not try steam-heating? The initial expenditure on that is soon recouped, and its advantages are many; and any who doubt it would do well to read up an interesting series given by Lt.-Col. D. J. Smith in our other paper, the *English Mechanic*, in its issues of October 28, 1910, and January 6, January 13, January 27, and February 10, 1911.

A letter from the Lunacy Commissioners Board of Control was read at a meeting last Thursday of the Swansea and Merthyr Joint Asylum Committee, saying that, owing to high death and low admission rates which obtained, the number of patients in county and borough asylums in England and Wales had so decreased that when asylums now being used as war hospitals were again devoted to their normal purpose there would be in the 99 asylums approximately 20,000 vacancies. The Board calculated that, even should there be a revival of pre-war rate of increase in the number of lunatics there would be, for at least eight or ten years, sufficient vacant accommodation in other asylums to enable visiting committees whose accommodation was inadequate to meet their requirements by boarding out their patients, instead of incurring the present heavy building costs. In view of the letter, the committee decided to hold up its asylum building scheme involving an expenditure of nearly £150,000. Premature economy, we fear! Throughout the country people seem to be going mad in greater numbers than ever!

If the Bishop of London lets London House, as he purposes doing, he will, as the *Guardian* reminds us, achieve an odd coincidence in numbers. He will leave

in the hundredth year of its existence a house which in its original form passed into the possession of the See in the time of its hundredth Bishop. The place was bought, cheap and dilapidated, from Lord Warwick in 1771. Its first Episcopal owner was Richard Terrick, who was succeeded in St. James's Square by Lowth, Porteous, Randolph, and Howley. The old house was demolished and rebuilt as we see it in 1820, since when it has been occupied (or allowed to stand empty) by Blomfield, Tait, Jackson, Temple, Creighton, and the present Bishop. Howley had to obtain an Act of Parliament authorising the rebuilding at an estimated cost of £10,000. The Act forbade the leasing of London House, but that provision is understood no longer to be an obstacle. It is one of the many distinctions of the Bishops of London that they live in two of the ugliest houses in England—the modern portion of Fulham Palace is no more than three brick walls pierced by windows. But the famous gardens are ever a delight—and a substantial expense.

COMBINATIONS IN THE BUILDING MATERIAL TRADES.

We were told last week by the Local Government Board, as we announced on page 325 in our issue of May 21, that the President of the Board, finding that the present high market prices of building materials are prejudicing the facilitation of the housing schemes now in progress, "by organisation and large-scale buying" has arranged to supply local authorities and other promoters of house-building schemes through the Ministry of Supply at from 10 to 15 per cent. less than ruling market prices, and in some cases more. This must mean that makers and merchants of such materials are going to quote lower prices than those at which they will supply the ordinary builder, that State enterprise is to be favoured at the cost of the private builder, and that trade combinations and trusts have been overcharging their ordinary customer. So far as our own experience goes, with the exception of a very few specialities, we have found that if the last supposition is true it is due, just as the merchants' and manufacturers' unwillingness to enter into binding contracts at other than the day's price is due, to their uncertainty as to the cost of labour. That, just now, is by no means confined to the building trades. Almost every week we see notifications of further rises in wages in compliance with the demands of workers who find that high wages mean the still further rise in prices of articles of general consumption, and that the last-gained rise of wage vanishes almost as soon as it is conceded.

There is no trace of recognition of this fact in the Report of the Committee on Trusts appointed in 1917, which was published last week, and the Report should be read with the closest attention by all interested in the Ministry of Reconstruction. It is alleged therein that the following trades are absolutely controlled:—Roofing and ridging tiles, chimney-pots, glazed and floor tiles, earthenware pipes, sanitary earthenware, lead pipes, sheet lead, iron castings, wallpaper, glass, wrought iron tubes, boilers, and Portland cement; whilst the following are partially controlled:—Building bricks, lime, plaster, mortar, gas pipes, electric light fittings, locks, latches, nails, screws, furnishing ironmongery, wrought-iron

and steel cisterns, slates, paint, and varnish. The only uncontrolled materials, we are told, are timber, breeze partition blocks, minerals such as ashes, hand bricks, sand, gravel, and granite chippings, and sundry materials such as glue, oil, and putty. The declared object of one of the most powerful of these trade rings, it is further stated, was "that of raising and keeping up the price to the buyer of goods and articles made and/or supplied by its members. This shall be done by means of pooling arrangements so controlling production that prices will rise naturally and inevitably, as they always must do when supply is brought into equilibrium with or is ever so little below demand." "As this combine has within its membership, over 90 per cent. of the manufacturers of the class of goods with which it deal, it affords," says the Report, "a concrete example of the operation of the first purposes of combination—namely, the limitation of competition, the control of output, and the increase of prices."

It is admitted that the other objects of these combines are to increase business efficiency by the regulation of the conditions of labour, traffic, and insurance, the promotion of uniformity in the customs of the trade, and the prevention of dishonest practices, the standardising of materials, processes or products, and of cost accounting, the publication of statistical data, technical information, co-operative advertising, purchase of raw materials, collective action for the purpose of developing foreign trade, etc. The committee say they came across no combination whose primary object is to increase the efficiency of business, but they say their inquiry "has not covered the whole ground." In every case examined the primary object has been to regulate prices. It is admitted that "The regulation of selling prices need not necessarily be opposed to the interests of the consumer," and that "Without a doubt, within reasonable limits, manufacturers may combine to regulate prices with advantage not only to themselves, but, incidentally, to that of the community. To maintain a fair minimum price, or to stipulate that a merchant or retailer shall sell again at a price which will ensure a fair profit, cannot be regarded as illegitimate unless the control exercised depends upon the use of questionable methods and involves disaster to competing firms." The evidence points, however, it is alleged, to the existence, in the case of certain combines, of practices which are now, or in the future may become, increasingly prejudicial to the interests of the consumer.

The committee propose the appointment of a commission furnished with adequate powers of investigation, including the power to examine manufacturers' and merchants' books, with a view to gauging the present activities of various combinations in the building trade. The subterranean methods employed by price maintenance combinations can only be properly appreciated, they say, by full disclosures and a thorough examination of the regulations governing the associations and the books of the trades concerned. Many associations are promoted by accountants who have specialised in this class of business, and it would be necessary to examine them also. It might be necessary to give a Commission power to issue subpoenas to enforce the attendance of witnesses as well as to examine books and papers, and so far as possible to protect witnesses against injurious consequences. Such a Commission should make recommendations as to any steps which might be taken to safeguard the

interests of builders and of the public generally. In view of the long time which must elapse before any legislation based on the report of a Commission could become operative, the committee think that it may be necessary to take other steps to prevent artificial inflation in the cost of building materials as soon as the trade becomes active at the close of the war. "Doubtless," we are told, "it would be easy to arrange for some of the principal combinations to furnish goods at reasonable prices to the Government, but we think that any temporary arrangements should, if possible, be such as to safeguard the interests of the private builder and of public utility societies."

Possibly the little arrangement made by Dr. Addison and announced in his notice quoted in our first paragraph is the result of the conviction of the Committee that it would be "easy" to coax or coerce some of the combines into underselling their fellow members. If not, well, then, the responsibility of making it costly or impossible to build the poor man's cottage at less than an increase of £36 10s. per cottage must be exposed, and public indignation must, somehow, be switched on to the grasping combinations, much after the same fashion in which an enterprising daily contemporary tried to saddle the Admiralty with the responsibility for Hawker's failure to fly the Atlantic.

We hope the Commission will be appointed, and that all sides will be fairly represented, especially that which includes the parties accused. We hope, also, that the Committee appointed yesterday week by the Conference at the R.I.B.A. to inquire into the condition of the building trade will pay special attention to this matter. For, assuredly, if the allegations made against the manufacturers and merchants who make and supply building materials are true, they deserve all they may suffer. Frankly, we do not believe that they are true, except, as we have said, in some instances, in connection with which the would-be profiteers more or less speedily have come to grief, and quite righteously. The depression of the building trade during the last ten years—due mainly to unfair and unwise legislation—has not been favourable to any such unfair combinations. Where combination has existed—of the sort beneficially exercised by the Federation of Building Trade Employers, for instance—it has been mainly exercised for the laudable purposes tabulated in the Report, despite the incredulity manifested by the framers of the Report, and any fair inquiry will, we are persuaded, make that clear.

The road repair work of Hackney Borough Council is estimated to cost £79,000.

The Lossiemouth T.C. has instructed its surveyor (Mr. J. Wittet, architect, Elgin) to ascertain the number of new houses required to meet the needs of the town, and to report to the council regarding a suitable site or sites for building purposes.

A memorial window was unveiled in the Church of St. Peter, Deene, on the 15th inst., to the late Lieut. James Ernest Brudenell Bruce, Northamptonshire Yeomanry, who fell in action in France on April 11, 1917. There are three lights to the window, which was designed by Mr. Robert Annis, Bell, A.R.A. In the one is a representation of St. Martin of Tours, and at the base of the panel are the arms of the late Mr. Brudenell Bruce. The chief figure of the right-hand light shows St. Louis of France holding the oriflamme, and in the distance are depicted the walls and towers of Paris. Next below are the towers and arms of Arras. The centre light represents A. Anselm, Archbishop of Canterbury, and shows near the head the trees and water of Deene Park.

Our Illustrations.

WAR MEMORIAL, BERRIEDALE, CAITHNESS, N.B.*

This war memorial is to be erected by the Duke of Portland on his estate in Caithness to the memory of those of the locality who fell or fought in the war. The monument, by Sir Ernest George, R.A., and Mr. Yeates, is of granite and about 24 feet in height. On one face is a bronze tablet with a wreath and the dedication; on the other sides will be the names of soldiers and their regiments incised in the granite. A bronze figure of St. George forms the finial. The site is on wild moorland between two streams. The drawing is in this year's Royal Academy Exhibition.

A BUNGALOW, NAIROBI, BRITISH EAST AFRICA.

This drawing shows a bungalow being erected in East Africa, near Nairobi. It is of local stone, with a roof of wood shingle which spreads over the wide verandah. The woodwork generally is of teak. The kitchen and servants' quarters form an outside adjunct. Italian craftsmen do most of the constructive work in this equatorial hill country. Sir Ernest George, R.A., and Mr. A. B. Yeates, F.F.R.I.B.A., are the architects. The picture reproduced is in this year's Royal Academy Exhibition.

HUNTERCOMBE PLACE, OXFORDSHIRE.

Huntercombe Place, Oxfordshire, was built a year or two before the war. It stands high up on the Chiltern hills and commands fine views over the Thames valley, and also is near to the famous Huntercombe golf course. The bricks used in the construction are of rough texture, which helps to emphasise the Elizabethan character. The builders were Messrs. Thompson and Sons, of Louth, Lincolnshire, and the architect of house and garden Major O. P. Milne, F.R.I.B.A., Bury, Pulborough, Sussex.

A REINFORCED CONCRETE WAR MEMORIAL CHURCH.

The author of this new method of building, provisionally patented, claims to have evolved an entirely new and pure style of architecture—pure because it conforms to all the essential principles of architecture, and new because only modern reinforced concrete construction made it possible. Concrete buildings have previously been erected without their external and internal forms being made identical. The accompanying photographs of a war memorial church illustrate only one instance of what can be done by the use of semi-elliptical concrete vaults of uniform thickness and springing directly from the floor level. The vaults take the place of walls and roofs as commonly employed. The walls and roof being thus made continuous and monolithic become one and the same. The building, in fact, is all roof without any structural walls. Architecturally considered, the church has the effect of dignity, solemnity, and religious feeling after the manner of buildings of similar size erected in the Middle Ages. All modern requirements are satisfied, such as insuring an unobstructed view of the altar and pulpit from every seat in the wide nave, as shown by the plan. The concrete vaults in no part of the edifice exceed in thickness 6 inches, so it is evident that this form of construction must be much cheaper than any existing or other possible method. It requires neither ties nor abutments. A groined church of this size with a 40-ft. span

would ordinarily require brick or stone walls at least 2 ft. 7½ ins. thick, and for so wide a nave heavy roof construction could not be avoided. By thus reducing the quantity of materials cost is correspondingly modified; indeed, the same amount of material previously required would by this method suffice for two buildings instead of one. This reduction of material, instead of reducing the strength of the structure, actually increases it by at least 100 per cent., a statement easily proved by mathematical calculation. At the present time concrete is by far the cheapest and most easily obtainable building material. Neither bricks, stone, tiles, slates nor timber, and not even heavy steelwork framings, are necessary. Buildings erected in this way are fireproof, sanitary, and vermin-proof. No false roof is needed, so the entire cubic contents are utilised without pockets for dust and microbes. Being light, heavy foundations are not required. The minimum height is insured and the exterior appearance expresses the material employed. The ellipse was never used by Medieval builders because of the practical difficulties involved, and it never occurred except where two ordinary vaults intersected, and then only very seldom, as in the cloisters of Westminster Abbey. The ellipse is the nearest geometric form to the parabolic curve, and with this in view the shape of the egg was adopted because that is the most scientific and most rigid example of homogeneous concrete formation known in creation. This principle is equally applicable to baths, halls, factories and all kinds of buildings, and particularly to housing schemes on standardised lines where economy and good appearance necessarily should come in. The method was evolved after a wide and varied experience of reinforced concrete as used during the war. Mr. Maurice S. R. Adams, A.R.I.B.A., a pupil of Mr. Alfred W. S. Cross, M.A., is the inventor of this system.

THE TRAINING OF THE FRENCH ARCHITECTURAL STUDENT AT THE ECOLE DES BEAUX ARTS.*

By MR. ARTHUR DAVIS, F.R.I.B.A.

Recent political events have brought the French nation in very much closer contact with ourselves. We have become more and more interested in their methods, their organisation and their education, and this tendency is likely to increase in the future. Thousands of our young men have spent considerable time in France and have returned home with a wider view of architectural possibilities. The war has also shown that educational methods in England require a great deal of revision, and that advantage might be gained by the study of many of the institutions of our gifted neighbours. A great deal of criticism has been levied against modern French architecture, its lack of restraint, exuberance of detail, and its want of refinement; however, it is not the object of this paper to discuss these matters, nor to compare the results obtained by our French confrères with our own. At the same time, I think it is only right to say that a great deal of unfair objection has been raised to the Beaux Arts training, which is in no way responsible for the lapses in the above-mentioned qualities shown by so many modern French architects.

It is purely as an educational system which has benefited many generations of students that I hold a brief for the excellencies of the Ecole des Beaux Arts, which has produced architects of great merit and others whose example we should avoid. The prevailing fashion of each period in France, as in all countries, has left its mark upon the art produced. If the results obtained by the students of this school are examined, such a

* Read before the Society of Architects, May 22 1919.

diversity of styles and methods appear that it cannot be asserted that the Ecole des Beaux Arts has directed its students in any particular direction. For example, at one period, in 1850, when the Grand Prix de Rome were sending back the most elaborate restorations of classical monuments, the whole trend of work in France was distinctly influenced by Roman Art. Later, when facilities for travel had opened up new fields for the student, and when Italy was no longer the sole pilgrimage of those who were able to travel, we see other and more modern influences prevailing. In fact, the Beaux Arts seems to *reflect* instead of *direct* the artistic tendencies of its time. A study of the best work produced there will show a diversity of styles ranging from the classical Greek to the Art Nouveau, including every other artistic influence.

If this school has had such a pronounced success both in France and abroad, it is, in my opinion, due rather to the high standard of its teaching than to any individual results which may have been achieved by its students.

I have discussed with many English architects the advantages and faults of the Beaux Arts system, and I have noted that the general policy which has governed its educational methods in many cases has not been clearly understood nor appreciated in this country.

At a time when all our traditions and methods are in the melting-pot, when new ideas are being evolved, and old prejudices cast aside, it may not be out of place to describe the broad lines which govern the architectural education given to the French student, and to explain why the results achieved have been so successful.

In France, architecture is considered one of the fine arts. This statement may seem obvious, but we see so many of our British colleagues claiming to be first of all professional or business men and considering the design of their buildings of secondary importance to professional and constructional considerations, that I think it cannot be too often repeated that the architect should be, as he was in the olden days, primarily an artist and a creator. This fact is frequently lost sight of in this country, where the stress of competition and the necessity of making a livelihood has prevented the architect from receiving the same consideration and belonging to the same social status as men of other professions. This fact has also given girth to an idea among the public that an architect is a gentleman something between a lawyer and a surveyor, who spends his life in dealing with matters concerning party walls, ancient lights, leases and constructional problems, the question of the design and beauty of his building being quite secondary and unimportant.

Now, in France, the artist, whether he be painter, sculptor, architect or musician, is placed upon a very different footing, and the architectural student is proud of being considered an artist before anything else. He may hope later on to acquire knowledge in the other inseparable branches of his profession, but he nearly always looks at his career not from a professional but from an artistic point of view. The fact that he pursues his studies at a school where painting, sculpture and engraving are also taught, and that he mixes with students of these arts strengthens him in this point of view.

It will now be advisable to give a brief history of the Ecole des Beaux Arts and the methods adopted in that school.

The French Academy of Architecture was created in 1671. In 1694 it was decided that its members should give lessons and provide architectural programmes for its students. This was the foundation of the Ecole des Beaux Arts. Until 1819 the Institution was an academy school. On August 12, 1819, it was decided that the school should become a State Institution under the control of the Minister of Fine Arts. The governing body do not concern themselves with professional questions, but solely with the educational side of architecture, all professional matters being dealt with by the Société Centrale des Architectes. This Art University is divided into four sections, devoted respectively to architecture, painting, sculpture and engraving.

Music is taught at the "Conservatoire" under a different administration.

The Ecole des Beaux Arts is situated in the Rue Bonaparte, and consists of a large group of buildings, comprising art museum, galleries of sculpture, art library, exhibition rooms, amphitheatres for lectures, three attached ateliers, and a building of loges, or cubicles for competitions. The entrance on the Quai Malaquais gives access to the large exhibition room decorated with beautiful reproductions of famous Italian masterpieces, the work of former Grand Prix painters. This exhibition room, called the "Salle Melpomene," is common to architecture, painting and sculpture, accessible to the general public, and is thronged at times when important exhibitions are held. The library building and Quay facade by Duban are interesting studies in the Neo-Grec manner. A large forecourt, entered from the Rue Bonaparte, and decorated by architectural models and fragments of old buildings, lends dignity to the general grouping.

It is not in the province of this paper to discuss the methods adopted in teaching the sister arts, and I shall, therefore, confine myself to describing the manner of training the architectural student from the beginning to the time he is in a position to take up a practice.

The Ecole des Beaux Arts is the centre of the entire organisation, but apart from the ateliers just mentioned, where the actual work is done, the student only uses the school itself for the purpose of attending lectures, viewing the exhibitions, and for the use of the library. The loges, grouped in a separate wing, are set aside for the official competitions held periodically, and it is there that the students spend the day making sketch designs from a given programme in separate cubicles under the supervision of official janitors. As the students are not allowed to leave the loges while the competitions are held, provision is made for supplying them with food and other necessities on the premises.

The three ateliers directly attached to the Ecole des Beaux Arts not being sufficient to meet the requirements of the many students of architecture belonging to the Institution, a number of outside ateliers have been from time to time joined on to deal with the overflow. The outside ateliers, which now number ten, are run in exactly the same way as those attached to the Ecole, and are mostly situated within close proximity to the mother-school.

Now let us take the case of a young man between sixteen and eighteen years of age wishing to study architecture after having completed his general education. In most cases he would start after having passed his Baccalaureat, an examination in general knowledge corresponding to our Matriculation. The young man's object is first of all to study for the Entrance Examination, held twice a year, to admit of his becoming an official student. The test is comparatively a severe one, as it includes architectural design, drawing from the cast, modelling, mathematics, and the history of art. The numbers that compete vary between 250 and 300, out of which a maximum of forty-five Frenchmen and fifteen foreigners are accepted. It will, therefore, be seen that to be among the winning candidates it is essential to have a thorough knowledge of the given subjects. For the object of coaching for the entrance examinations the majority of the students join preparatory ateliers, of which there are six, conducted by old Beaux Arts men, thoroughly conversant with the conditions demanded, and who act as coaches for the entrance examination. There is no compulsion to join these preparatory ateliers, and some candidates prefer to gain their knowledge elsewhere under private tuition; but the majority find it advisable to enter one of these training schools, as they acquire there the special knowledge more speedily and get used to the methods of work and surroundings, which resemble those they will live under in the official studios later on. In these preparatory ateliers the students will find that a competition in architectural design is held every week, in every way similar to the one given at the entrance examination to the Beaux Arts, and the patron marks

and judges his pupils' designs on the lines the jury will follow when the candidate presents himself for the entrance examination. He will be taught to draw from the cast, the models being the same as those which he will be expected to interpret later on. The lectures given on elementary mathematics, geometry, algebra and descriptive geometry will teach him the subjects, and only those required for the examination; in other words, these ateliers are merely coaching institutions, and have no official status whatever.

Some students prefer to join the recognised Beaux Arts ateliers at the beginning of their career, but with the stress of work and the more important and advanced studies that are held there, these juniors are apt to be somewhat neglected, and those able to pay the fees, which are not very heavy (about 25 francs per month), of the private ateliers, have a better chance of success at the entrance examination.

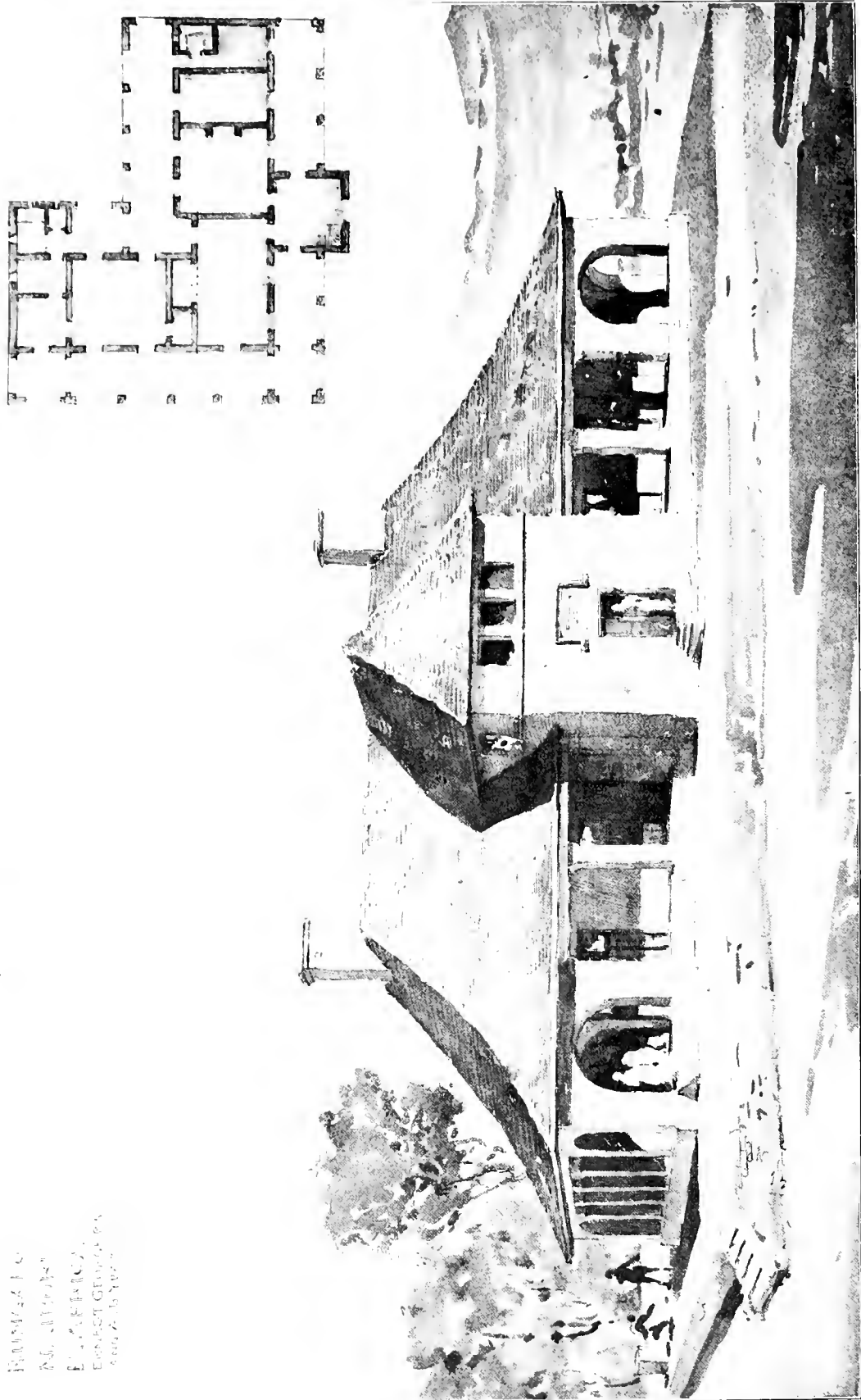
Before leaving the question of the preparatory ateliers, I would like to point out that although their members are mostly youngsters fresh from school, it is recognised that they are to become architects; in fact that they are already students of architecture, and therefore followers of an artistic profession, who are required to produce creative work, elementary though the subjects may be. In consequence they are treated as independent thinkers, and are put on their honour to do a certain amount of work and attend the lectures in their own interest. The preparatory ateliers, following the example of the official ones, are open at all hours. There is no compulsion to attend at any specified time, nor to compete for the weekly "esquisse." The patron is not permanently in attendance. The pupils have their own organisation, which is similar to the one I shall describe later, which controls the senior institution. Our student's time is, therefore, his own, to measure up buildings, travel, read, do outside work, and acquire any knowledge he may think useful apart from the work to be done in his atelier. Consequently, if he does not apply himself to the subjects taught, he will be outclassed by his more energetic fellow competitors, and fail at the entrance examination.

The freedom given under this system has proved unmistakably advantageous. It often happens that parents anxious to put their sons into professions when they leave school, do not realise that the boys in many cases are quite unsuited for these careers. After having spent a certain amount of time, which varies according to the patience and length of purse of their parents, these lads find that they cannot acquire the elementary knowledge which will enable them to pass the competitions and automatically drop out. Only those who possess special ability and take their studies seriously, find themselves eligible for the much-envied title of "Eleve de l'Ecole des Beaux Arts." The advantage of this system is the elimination of men whose temperament and disposition is not suited to a profession requiring an enormous amount of special knowledge and working capabilities.

Now let us assume that our student has joined a preparatory atelier and is diligently working at his art. He submits his name as a candidate for the entrance examination, and armed with a drawing-board, T-square, and other paraphernalia, in company with about 300 of his fellows, goes "en loge" for the twelve-hour "esquisse," and is appointed a place in a cubicle, where the official programme is handed to him. The subject given in architectural design is usually a very simple one; it may be an entrance doorway, a decorative wall, small monument or any similar theme. Often it is a detailed portion of a building, giving the candidate a chance of showing his knowledge of the Classical Orders of Architecture. He is expected to produce an elevation, plan, and section, either inked-in or coloured with simple washes; he is under supervision and not allowed to communicate with his fellow students. Twelve hours is the time allowed for the production of his masterpiece. Meals

(Continued on page 341.)

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A BUNGALO, NAIROBI, BRITISH EAST AFRICA.—SIR ERNEST GEORGE, R.A., and Mr. A. B. YEATES, F.R.I.B.A., Architects.



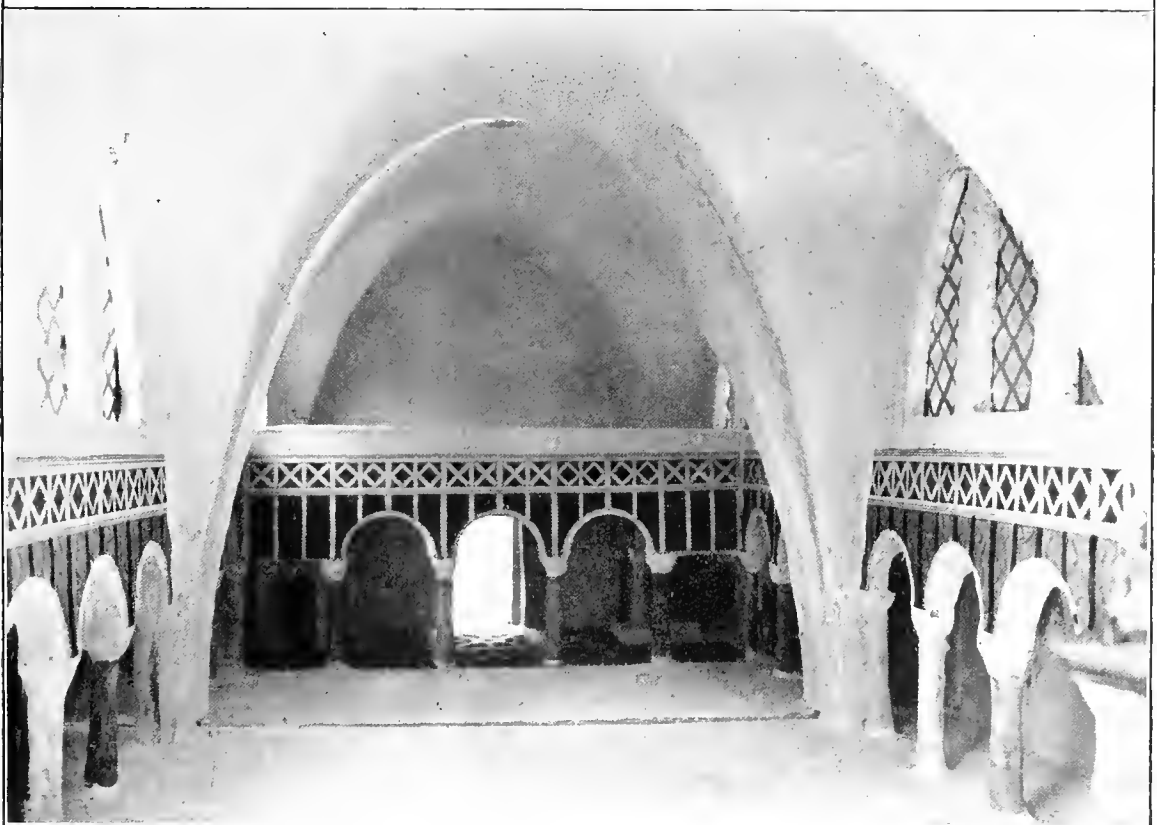
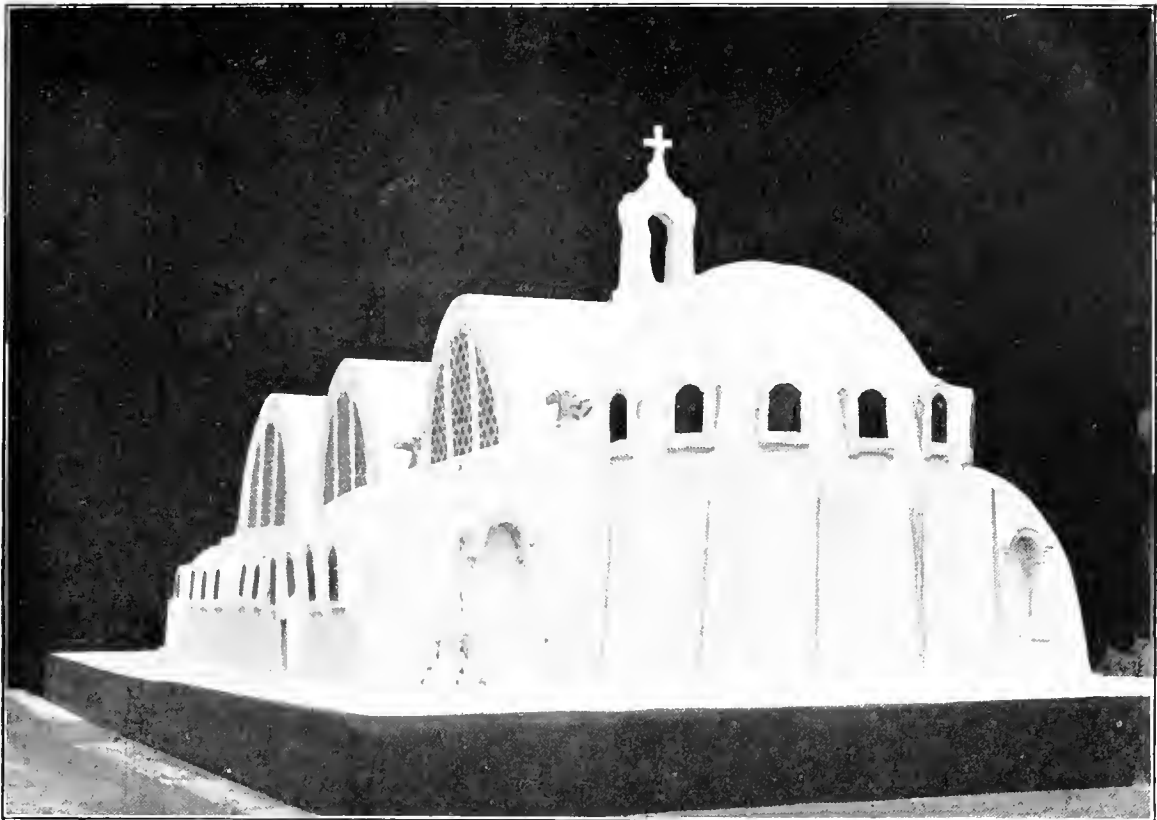
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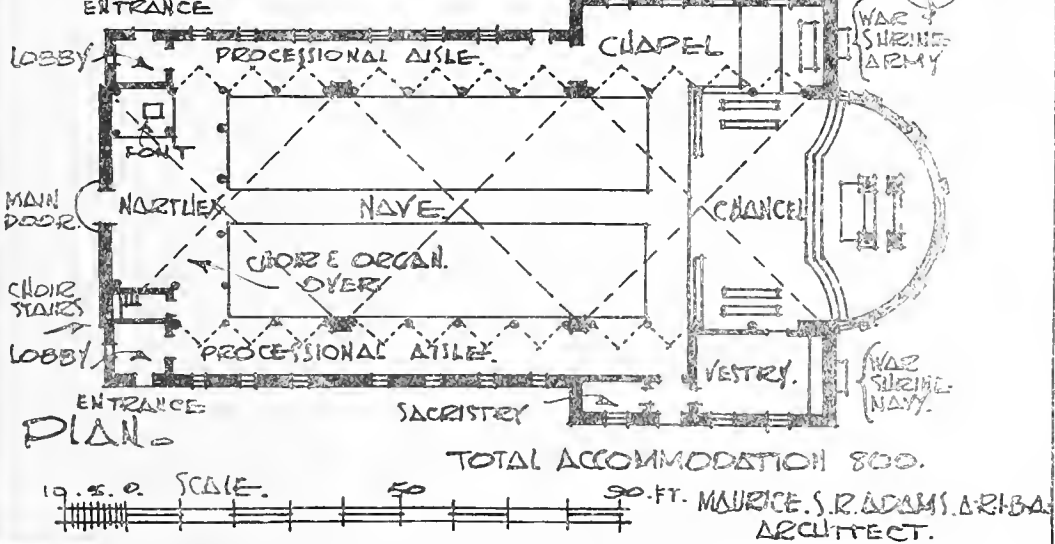
PATENT APPLIED FOR.

A REINFORCED CONCRETE WAR MEMORIAL CHURCH.
VIEW OF APSE AND INTERIOR, LOOKING WEST.

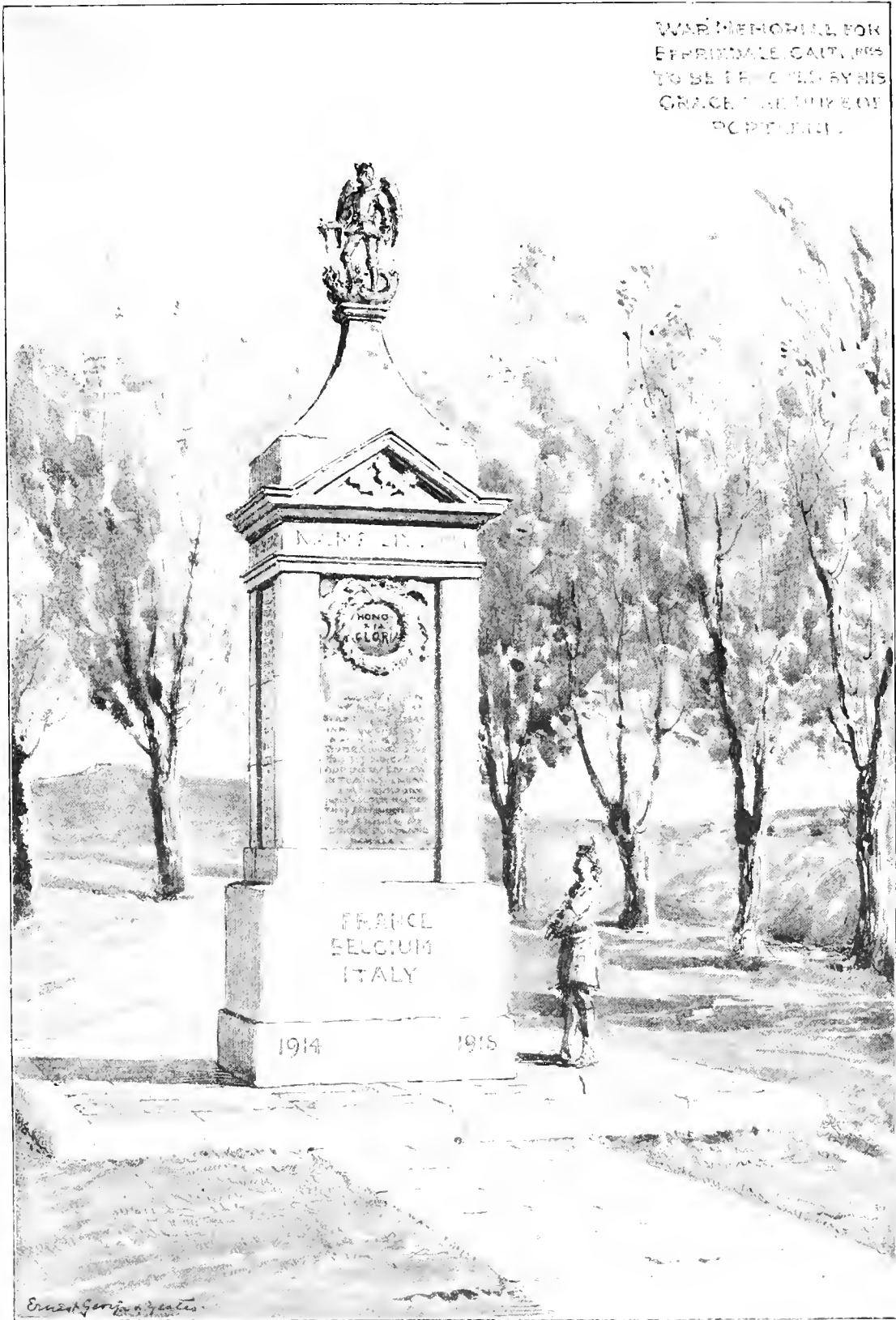
MR. MAURICE S. R. ADAMS, A.R.I.B.A., ARCHITECT.



"MAURICE ADAMS" REINFORCED-CONCRETE CONSTRUCTION MEMORIAL CHURCH PATENT APPLIED FOR - 1918.
 MODEL NO 120.



WAR MEMORIAL FOR
ERRIEDALE, CALT, 1885
TO BE ERRECTED BY HIS
GRACE, THE DUKE OF
PORTLAND.



WAR MEMORIAL FOR THE DUKE OF PORTLAND, BERRIEDALE, N.B.
SIR ERNEST GEORGE, R.A., and MR. A. B. YEATES, F.R.I.B.A., ARCHITECTS.

(Continued from page 328.)

are provided, and he is disqualified if found in possession of any documents or books. At the end of the specified time his drawing, whether finished or unfinished, must be handed in. It is officially stamped, and he is for the time being free. Later designs are hung in the exhibition room open to the public, where he may bring his relations and friends to admire and criticise the result of his efforts. Subsequently these sketches are assessed by the jury and marked according to their merits. The maximum number of marks is 20, and any student who receives less than seven must retire, and cannot proceed with the remainder of the examination. The successful candidates next have to sit for similar competitions in drawing from the cast and clay modelling. The subjects are fairly simple, representing such motifs as an antique vase, griffon or modillion. As with the preceding competition the results are exhibited and judged, and the same process of elimination takes place. Any drawing or modelling marked under five causes its author to fall out. Those who successfully pass these three stages again go "en loge" for a paper on mathematics, comprising questions on the first three books of geometry, simple algebra, and the theory of arithmetic. A special knowledge of elementary descriptive geometry is also required. This examination is followed by an oral on the same subject, and once more the process of elimination applies. Finally, the student having proved his knowledge of the history of art completes the number of tests required. As I have mentioned before, this is not only an examination but a competition, only those who have obtained the largest total of marks being accepted. The number varies with each half-yearly session, but roughly speaking about 40 to 50 are admitted. The rejected students either come up for re-examination at the next session, or fall out altogether.

The candidate whose total number of marks bring him among the winners has now become an official "Eleve de l'Ecole-des-Beaux-Arts." His admittance is recorded, he is given a card on which is inscribed his name and the name of atelier he has decided to join, and he is now free to take part in the special school competitions and to enter into its life.

The Ecole des Beaux Arts is essentially a democratic institution. The only fees to be paid are the atelier subscriptions for the upkeep of the library and other necessities of the establishment. These amount approximately to 25 francs per month, and are collected by the "massier," together with a small fee which the student pays to the patron. The total sum does not exceed 50 francs, and in some deserving cases the patron has released the student from these slight monetary obligations. In some ateliers the winning of a medal in the first class and a grand medal of construction (second class) frees the student from paying his patron.

The best professors of architecture and its allied subjects are appointed by the Government to criticise the work, help, and advise the students. When it is remembered that such eminent architects as Gaudet, Pascal, Laloux, Deglane, Ginain, and many others equally famous are or were patrons of the ateliers, form the juries, and assess the designs, it is not difficult to realise the important place the Ecole des Beaux Arts holds among the educational institutions of the country. In addition to those mentioned above, professors of very high standing, not necessarily architects, are appointed to lecture and examine on subjects allied to architecture, such as archaeology, mathematics, descriptive geometry, stereotomy, perspective, history of art, and the theory of architecture. These lectures are given in the amphitheatres at the Ecole des Beaux Arts. They are delivered principally for the students, but many of the outside public attend. Some of these discourses, such as the one on the history and development of architecture, are very popular in Paris.

M. Magne's historical survey, beginning with the very earliest forms of construction and concluding in modern times, embraces

all the important phases and developments of the building arts. M. Gaudet's lecture on the theory of architecture has been published in book form, and should be carefully read and digested by every beginner anxious to learn the rudiments and objects of his art. The lectures on mathematics are delivered by well-known professors of the Ecole Centrale. In short, by obtaining the assistance of the most eminent men in the country, opportunity is afforded to the young architect of obtaining the best available tuition and guidance in every branch of his profession.

Now let us return to our student. Assuming that he is not already a member of an official Beaux Arts atelier, he leaves the preparatory studio and chooses the patron under whom he proposes to continue his studies. The popularity of the ateliers varies according to the number of awards and distinctions they have gained during previous years, but they are all more or less equally good. His fate is in the hands of such masters as Pascal, Paulin, André, Deglane, Defrasse, and Lambert. Having selected his patron, the student next pays him an official visit, and is welcomed and introduced to his comrades. He has now become a second-class Beaux Arts student, and is called a "nouveau" or freshman.

Apart from the studies he will have to pursue, he will be required to do a great deal of work for the benefit of the senior men. For one year he has no official status in the atelier, and, together with his fellow nouveaux, he must submit to a certain amount of drudgery, such as mounting the designs, cleaning drawing boards, running errands, etc. Here it should be mentioned that the patron only comes occasionally to his atelier, and interferes in no way with its internal organisation. As was the case in the elementary ateliers, the students are free to come and go at their will, the premises are open day and night, the last man to leave being responsible for locking up. The members of the atelier appoint a committee to deal with the internal affairs of their respective establishments, and any infringement of the rules is severely punished by the students themselves. A prefect or massier, with a sous-massier to replace him when absent, deal with subscriptions and internal matters of this kind. Another student takes charge of the library, while the nouveaux appoint a corporal to control the work of the newcomers. This arrangement, which is based on studio traditions, gives excellent results.

Although each atelier accommodates approximately fifty to eighty students, mostly young men of originality and exuberant spirits, there is comparatively little disorder, the internal organisation being governed by a spirit of good fellowship and *esprit de corps*. Both juniors and seniors constantly work on each others' designs, an interchange of unselfish service which plays a considerable part in the life of the Beaux Arts. This is, not only accepted, but encouraged by the authorities. Naturally, such a system is only possible when the work is originally competed for "en loge." It is recognised that a student having decided upon his personal interpretation of a given programme, and having selected the general principle or "parti" of his design, can only benefit by the help and advice of his colleagues when later he elaborates his early conception. Therefore, when a second-class competition is being held the senior man willingly comes down from his pedestal and helps his less advanced comrade whose sketch offers possibilities in its development. When the time comes for the older man to send in his design, the junior is equally anxious to assist him. Hence the most competent students get the choice of assistants, whatever the stage to which they belong. As a consequence of this exchange of assistance the majority of finished designs are not the result of one man's efforts, but that of the co-operation of several, the original conception having been laid down in his esquisse by the author of the scheme. It is easy to see how much this system benefits all concerned. The student is not only working on his own subject, but is constantly giving or receiving advice from his comrades on other designs.

After his reception at the school, the second class student goes "en loge" for a competition on analytical architecture, demanding a more complete study of the classical orders, in which he must show a fairly accurate knowledge of these elements by means of a rendered design accompanied by large detail drawings. After leaving the loge, where he has handed in a copy of his twelve-hour sketch, he is allowed two months to produce his finished work. This is exhibited and judged as before described, but no marks are given once the entrance examination is passed.

The rewards in both second and first class consists of ordinary mentions, first mentions, first-second medals, and first medals. On receiving a mention a student moves one step forward. A first mention or second medal doubles this advance, and a first medal is worth three mentions. The last is the highest award obtainable and is very rarely given, being reserved for designs of surpassing merit and interest.

The number of premiated designs varies according to the standard of the work, but rarely is the proportion more than one half of the total exhibited, about one-tenth receive a first mention or second medal, and only two or three of the best designs are awarded the much coveted first medal. The yearly winners of the Rougevin and Godebœuf prizes are also entitled to a first medal. Even those who have failed to win distinctions realise that they have not entirely wasted their time, as they have gained knowledge and experience, and seen a large number of solutions of the problem, which has been the object of their study. While the second-class student is working at architectural design he also attends lectures and is examined in the following sciences: higher mathematics, comprising geometry, analytical algebra, descriptive geometry, mechanics and elementary construction, together with drawing from the life, modelling, perspective, stereotomy, and archaeology. Having successfully passed these tests, he next takes a course of construction lasting one year, embracing stone, timber and steel construction, and must give evidence of his knowledge in these subjects in the solution of an architectural problem for a large building, in the design of which he must show a complete knowledge of its constructional elements. Having succeeded in doing this work and obtaining a minimum of six mentions in architectural design, the student is promoted to the first class. There he is considered sufficiently advanced to deal only with architectural problems. He is given two months to treat subjects more important than any he has been asked to deal with before, and if he fails to obtain either a medal or a mention does not move forward. I have collected a few specimens of the students' work for the various competitions, in first and second class, which I thought might be of interest. These are neither better nor worse than the average, and illustrate the progressive stages of his career.

The Beaux Arts authorities consider it essential that every architect should know how to plan and design large and small structures, to group several important buildings satisfactorily, to lay out gardens and approaches, and deal with decorative and constructional problems of every description, which come within the range of architecture. Apart from the two monthly competitions, both in the first and second class, twelve hour sketches are given each month. A few mentions and medals are awarded for the best, and are equal to half of those obtained on the larger subjects. There are other competitions, such as the two Rougevin prizes, of respectively 600 and 400 francs, for which a decorative subject must be completed in one week, and the Godebœuf competition, worth 740 francs, consisting of a constructional problem. These also carry with them rewards in the shape of medals and mentions. Other money prizes are open only to French students. These are the Prix des Américains, worth 1,470 francs, a legacy given by the old American architects in gratitude for the hospitality they have received when students; the Prix Achille Leclerc, of 1,000 francs; and the Labarre and Chenavard prizes, which are legacies given by deceased artists. The

Onward prize is reserved for students who have obtained all the "mentions" or "valeurs" required to be eligible for the diploma examination, or who have been first for the Prix de Rome.

Those who have been successful in passing the various stages and have obtained ten values in the first class, are the only ones who may enter for their Diploma examination, which entitles the successful candidate to style himself "Architecte Diplome par le Gouvernement Français."

The Diploma is obtained after the student has left the school, and may be entered for at any time, even though he may have exceeded the age limit, always providing that he has acquired the number of awards of which I have already spoken. It will be seen that owing to the very difficult and numerous competitions to be passed, the large field of subjects of which an intimate knowledge is required, and the length of time necessary for the work demanded, a great many students fall out before they have completed the Beaux Arts curriculum. These men either go into practice, become assistants, or abandon architecture altogether. The successful ones, who have obtained all their values both in second and first class, together with the Government Diploma, eventually become the leading architects. This does not necessarily mean that these men are heaven-born geniuses nor even very gifted artists, but it is generally recognised in France that every architect who has obtained this much sought for Diploma is competent to design and carry out any large building in a satisfactory manner.

To obtain this distinction a complete scheme must be produced on a large scale (the subject of which each architect may select for himself), giving a series of figured drawings of the chosen building, comprising plans, elevations and sections, together with numerous details of its exterior and interior decoration, construction and surroundings. This design may represent either an imaginary conception or an executed work. The candidate must also pass an examination in building legislation, and show that he is competent to draft a specification and contract, also give evidence that he has either put up buildings himself or worked for a certain time for a practising architect. It may be asked how this practical experience is to be obtained—it being assumed that the whole of his time has been occupied with his school studies. This brings me to a factor which is considered of the greatest importance in the general policy adopted in French architectural training.

It is recognised that while the student is learning the theoretical part of his art he should be given leisure to work outside for practising architects, so that he may acquire the practical knowledge and technical ability which he will need later in dealing with administrative bodies, private clients, contractors, and workmen. It will be seen that as there is no compulsion for him to attend the lectures or to study at any specified hours, he is free to work not only for himself and his fellow students, but to devote many useful hours to study, travel or the acquisition of practical and technical knowledge. This arrangement has also the advantage of enabling students whose financial means are limited to earn sufficient to be independent of monetary assistance or at least to help to maintain themselves while pursuing their studies. The Beaux Arts men are very much in demand at times when public competitions are held and when practising architects prepare the elaborate and effective drawings which are a feature of all French architectural presentation. The students are paid according to their ability, and to their status in the first or second-class. The fee per hour varies from two to three francs for the first-class men, and from 1.50 francs to 2 francs for the second-class men. It will be seen that this system is equally advantageous to practising architect and student. In every important office in Paris a floating population of Beaux Arts students appear in great numbers when public competitions are held. They work for a certain number of hours and return to their atelier when the designs are completed, having acquired wider practical knowledge together with a substantial financial remuneration.

This system has the further advantage of enabling the capable architect whose reputation is established to obtain more easily the help of advanced students than one who is considered inefficient or uninteresting. It also enables him to become acquainted with the rising generation, and many of the younger men owe the origin of their success to the fact that they have worked in the past for their seniors and who have recognised their abilities and have given them wider opportunities in later years.

The student may take his own time to complete his training at the Beaux Arts, but if he has not achieved this result at the age of thirty he must retire. The regulations demand a minimum of two designs a year, those failing to comply with this minimum being automatically expelled.

Naturally the men whose means are adequate prefer to enter for all the school competitions in succession, and complete their studies at the earliest possible moment, but many only finish a limited number of "projets" each year, and devote the remainder of their time to earning a livelihood. The authorities wisely encourage the student to travel and study famous buildings abroad, but in so doing he is not handicapped or placed at a disadvantage in resuming work. By leaving out one or several of the two monthly designs he is in no way penalised, and can make up for lost time later.

In 1906, it was suggested that a great many prospective students dwelling in the large provincial towns might benefit by following the Beaux Arts course without being obliged to live in Paris. Local art schools were created in some of the important educational centres, such as Lille, Lyon, Bordeaux, Marseilles and Rouen. When the professor of theory sets the programmes for the Paris competitions, sealed copies are sent to these local schools, where the students carry out their work in exactly the same way as their Parisian comrades, their designs being sent to headquarters to be judged with those of the central institution. The allied subjects already mentioned, namely, mathematics, drawing, etc., being also taught locally. This arrangement enables a great many talented provincial students to study architecture away from the capital.

Another innovation of recent times has been the admittance of women students to the Ecole des Beaux Arts. At first they were not numerous, but later their numbers have increased. A large percentage of these ladies are Americans. They have produced work of some interest, but so far have shown no conspicuous ability. There is no reason, however, to assume that they will not in time develop into very competent architects.

It may now not be out of place to mention something about the Grand Prix de Rome, which has done so much to promote the study of monumental architecture in France. This scholarship, created in 1720, by the Institute de France, is in no way controlled by Beaux Arts administration, although it is assessed by a jury composed principally of Beaux Arts Patrons, and has been won in every case by a Beaux Arts student. Any man who is of French nationality, under thirty years of age, and a bachelor, may enter for this much-coveted distinction. The competition is held in three stages, the first consisting of an elementary twelve-hour esquisse, competed for "en loge," at the Beaux Arts School. From the number who enter, the twenty best are selected, and these afterwards sit for a twenty-four-hour subject. They are confined to the cubicles for this period, and provided with food and sleeping accommodation in their special loges. The usual programme consists of a large lay-out sketch plan, and some of the results obtained are quite remarkable for their exhibition of skill and clever draughtsmanship, especially when the short time at the disposal of the competitors is taken into consideration. The results are exhibited and the authors of the ten best designs selected for the final. These men are called logistes from the word loge or cubicle in which they must now spend a considerable time. A programme is given them, usually for a large architectural composition, and they have

three months in which to produce their drawings. During this period each logiste receives a pension of 150 to 200 francs a month. They are obliged to dwell in the school premises, and are not allowed to be helped in any way. Although they are virtually prisoners, they may go out to attend to their private affairs and receive their master's criticism. The exhibition of their completed work is an event that causes much interest in artistic circles, as the drawings which are of colossal dimensions, often show extraordinary skill and technical ability, representing the highest level obtainable in architectural draughtsmanship. Out of the ten logistes three are placed, the first wins the Grand Prix de Rome Scholarship for the year and a gold medal, and the remaining two receive the titles of first-second Grand Prix, and second Grand Prix, together with money prizes varying from 1,500 to 4,000 francs. The winner is sent abroad at the expense of the Government for three years; for the first two he must remain in Rome, but he may spend the third year in visiting other centres of artistic interest. During his sojourn in the Eternal City, he is expected to measure up or work out conjectural restorations of some important historic building, to be sent to Paris for the use of the authorities.

All the Grand Prix winners, architects, sculptors, painters and engravers live in the Villa Medici, a beautiful Renaissance building placed at their disposal by the French Government. They are always welcomed in the artistic and social circles of Rome, and are given the freedom of the classical city. The Grand Prix architects have provided many extremely interesting archaeological records, but as most of the ancient Roman buildings have now been measured, recent winners have been allowed to search farther afield for their quarry.

Only a small number of Beaux Arts students, usually selected by the patron, go in for the Grand Prix competition, as it necessitates a special and very severe training. It is from among the winners of this scholarship that the future patrons are chosen, as well as the architects to whose care the preservation and restoration of public monuments are entrusted.

Realising the exceptional reputation that French art has acquired in all countries, and wishing to spread their ideas and methods abroad, the Beaux Arts authorities have wisely opened their doors and welcomed foreign students, who, appreciating the great advantage thus offered, flock in large numbers to Paris. They are warmly received by their French confrères, and enjoy all their privileges. (Germany is the one nation whose students have not availed themselves of this opportunity.) These visitors make a more or less prolonged stay at the school, and afterwards return to their own countries, many keeping up an active correspondence with friends made during their stay in Paris. This hospitality is not confined to the Beaux Arts, but is practised in all the other centres of learning, and has been largely responsible for the spread of French culture abroad. We all know how much American architects owe to their French training, and even in our own country, where the Ecole des Beaux Arts is looked upon with something like suspicion, many of our colleagues admit having largely benefited by a more or less prolonged stay at the famous school.

Like every other institution, however excellent, the Beaux Arts training has disadvantages, and objection may be raised to some of its methods. The great liberty that the student enjoys sometimes leads to its abuse. Parents are often nervous of allowing their sons to live in Paris without being under the direct control of responsible guardians. These fears, however, are rarely justified. The young student realises that he is either a candidate for or an actual member of one of the finest institutions in France, if not in the whole world; that his freedom is given to him for the purpose of obtaining the wide technical knowledge he will ultimately have to acquire, and that his time is precious and not to be wasted in frivolity. The example of the older and steadier men has a great moral influence over their younger colleagues,

and they punish very severely any infraction of the recognised rules, thus tending to keep the irresponsible element within bounds.

In my opinion, one of the greatest disadvantages of the system, as it now exists in Paris, is the unfavourable position of outside ateliers, which are mostly situated in very old houses, not specially designed for their purpose, to be found in the insanitary Latin Quarter near the Ecole des Beaux Arts. In almost every case they are too small to house the number of men who study there, and tend to become overcrowded. The students work day and night in unhealthy conditions, and a great deal of protest has been raised from time to time on this subject. On the other hand, in Paris it is very difficult to overcome this objection, as the studios must be in close proximity to the central school. The ancient premises, where their traditions are jealously guarded, are not only art centres, but also clubs and meeting places for the older architects, who often make a point of visiting these localities to revive past memories in the atmosphere and surroundings in which many of their earlier years have been spent.

It is one of the most important principles of the Beaux Arts system that no man should be compelled or even encouraged to produce work in any particular style or manner. As already mentioned, lectures on archaeology are given, and the best examples of the earlier periods are constantly brought to the pupils' notice; but in criticising the designs the Patron rarely interferes with the student's leaning to any historical style or his personal preference for a special type of detail. He will point out that the grouping adopted in a general plan lacks cohesion or that a feature is too heavy or faulty in proportion to the remainder of the design, but he will offer no comment upon the student's preference for any particular period, and as a result, at the exhibitions, examples are to be found in almost every known style, and sometimes in no style at all.

If a student has a leaning towards scholarly detail, the Beaux Arts treatment will often appear brutal and unrefined, and, having completed his course, he will in many cases revise his ideas on subjects which had not been dealt with in his school training. Again, as the number of designs exhibited at each competition is large (sometimes amounting to eighty or ninety), and as they are exhibited in close juxtaposition in a large room, the students are often tempted to express their ideas in a florid and theatrical manner, so as to outshine their fellow-competitors, and the knowledge that their designs will not be executed encourages the display of clever draughtsmanship and skilful water-colour rendering in preference to dignified treatment and simple presentation.

(To be continued.)

It has been decided to carry out an improvement scheme in connection with the parish church, Barnard Castle, which includes renovating the interior of the church, enlarging the organ, and providing church rooms.

Sheffield is leading in house-building, being the first undertaking to be put in hand, it will be commenced this week. Contracts have been met for nearly seven hundred houses, and the builders will start on the work immediately.

The Peterhead T.C. has decided to purchase housing sites of eight acres and sixteen acres respectively. Mr. James Dickie, the burgh surveyor, with the assistance of Mr. J. Ross McMillan, architect, Aberdeen, will carry out the schemes.

An admiring chronicler of the housing "movies" at the Alhambra says:—"It is the belief that if people are to get really interested in houses the subject must be made as exciting as Charlie Chaplin." And this after Dr. Addison's little effort lately!

Following a conference between the Mayor of Lambeth and the authorities of the Duchy of Cornwall, the Duchy has undertaken the conversion of a number of houses in Kennington Road, and the work is to be pushed on as fast as possible. Entirely new dwellings are to be erected, Courtenay Square will be completed, and Sancroft Street site, plans for rebuilding which had been prepared before the war, will be the first to be dealt with.

MESSRS. ROBERT INGHAM CLARK & CO.'S HUNDRED-GUINEA PRIZE TRADE MARK COMPETITION.

We gave on p. 298 of our issue of May 14 the result of the "Trade Mark" competition arranged by Messrs. Robert Ingham Clark & Co., and we were sure our readers would be interested to see our reproduction of the drawing which was awarded the 100-guinea prize.

The author was Mr. J. Newbould Saunders, of 7, Cromwell Road, Lancaster.



whom we congratulate on his success, and offer our felicitations to the firm on the choice made, with our best wishes for the continuance and for the world-wide extension of the usefulness and excellence of the products for which it is so famous, and an ever-increasing prosperity built on as broad a basis as the Empire symbolised so spiritually by Mr. Saunders in his admirably conceived representation of its Guardian.

CONSTRUCTION OF HOLLOW WALLS OF CONCRETE BRICKS.

The Austrian Society of Engineers, having been requested by the Austrian Government to draw up suggestions for the use of hollow bricks for the building of "cellular" walls for dwelling houses, have reported favourably upon the use of bricks made of mixtures of concrete and breeze, clinker, etc. They give the following suggestions for the use of such bricks.

Concrete brick cellular walls are walls which are made of hollow concrete bricks, or of hook-shaped, flat, or similar bricks, which when built up to form a wall form spaces or cells.

Certain certificates should be obtained from the Building Authorities before the bricks are used. Such certificates, in addition to mentioning the materials of which the bricks are manufactured, and the mixing ratio, should also state: (a) the compressive strength of the concrete and the mortar; (b) the compressive strength of the bricks or brick-cells; (c) the compressive strength of the walls built up of such bricks.

The strength of wall for all wall thicknesses, and for the fattest and poorest concrete mixtures used, should be determined by compressive strength tests on built-up walls at least 1.2 m. long and generally 12 times as high as the thickness.

As regards the materials to be used in building up the cellular masonry from concrete bricks, the general regulations in force for concrete structures should be observed. The concrete may receive an addition in the form of well burnt and deposited boiler clinker, locomotive clinker, or destructor residue, so long as these materials do not contain any substance which will impair the strength of the concrete.

The mortar should be a Portland or equivalent cement-mortar with at least 160 kg. of cement to each cbm. of fine sand. In this

mortar, up to one-quarter of the cement may be replaced by white lime.

The compressive strength of the concrete must be at least 40 kg./cm² after 6 weeks' hardening. The method of making the test is indicated.

The permissible compressive strain of the useful cross-sectional area should be one-quarter of the strength of the wall as determined by the official tests.

Care should be taken to see that proper joints are made between the walls and at edges and crossings, and that the connection between party walls and main walls are sound. A special concrete grill should run the whole length of the ground area of the building, in the case of structures with more than one story, in order to take the floors of the upper story. This grill must be at least 15 cm. high. The ventilation ducts and chimneys must pass through this grill. The cellular walls should be strengthened at least every 7 m. by suitable transverse walls or by solid pillars.

Hollow concrete walls should be protected from damp and thermal influences in the way provided for the thinnest brick walls.

Stairways should not be let into hollow walls direct, but the walls at these parts should be properly filled up with masonry or rammed concrete.

The foundations of buildings erected in the foregoing manner should be of rammed concrete, and of a height equal to the depth of the floor-level. Abstracted by the *Technical Supplement to the Review of the Foreign Press from Zeitschrift des Oesterreichischen Ingenieur und Architekten Vereines*, Feb. 28, 1919.

EXPERIMENTS WITH CLAY IN ITS RELATION TO PILES.

The *Journal* of the Society of Engineers gives the results of 95 experiments, the object of which was to determine the relationship between depth and horizontal pressure and to elucidate a theory. A square pyramid forced point downwards into clay is opposed by:—

- (1) Four vertical components of pressure on the faces.
- (2) Four vertical components of friction on the faces.
- (3) Four vertical components of cohesion on the faces.

Having measured the vertical force causing a certain penetration, and the vertical force necessary to effect withdrawal, the author uses these results to adduce by the reasoning advanced the values of (1), and of (2) plus (3), and from (1) ascertains the horizontal pressure. The experimental work, carried out with the simplest apparatus, is fully described, and diagrams showing results are given. The inquiry is extended to include the case of cylindrical and square piles. Effects of temperature and of water percentage are studied, and views are advanced relating to the fluidity of pressure, which the author conceives greatly affects the results. The work of earlier experimenters is referred to and commented upon. The author's principal conclusions may be summarised thus:—

For tapered bodies forced into clay, with a given penetration, load is proportional to area of contact.

For a given penetration, load increases with dryness of clay.

Clay with definite water percentage and temperature has a definite pressure of fluidity, which, being reached, causes yield as a dense viscous fluid.

For equal depths tapered piles support a larger load per unit volume than those with parallel sides.

Pointed piles are more efficient per unit volumes than those having blunt ends, due to gradual lateral displacement and more intimate contact.

Resistance to penetration increases with lowered temperature.

When forcing a disc into clay the sides do not crush in (with limitations) because, though fluidity is reached under the disc, this no longer obtains when the clay is displaced and free from the greater pressure.

Correspondence.

MR. ERNEST NEWTON'S THANKS.

To the Editor of the BUILDING NEWS.

Sir,—May I be allowed to express my sincere thanks to my friends for the address and testimonial presented to me on their behalf by the President. I value them very highly, not only because they are beautiful possessions, but as tokens of the esteem of my brother architects. I am, etc.,

ERNEST NEWTON.

4, Raymond Buildings,
Gray's Inn, London, W.C.1.
May 21, 1919.

ST. BARTHOLOMEW'S CHURCH, BRIGHTON.

Sir,—Two or lately I have come across allusions to the above church which have led me to think that perhaps a few notes about its building might be of interest to your readers.

The first allusion is on page 14 of Mr. Henry Parr Maskell's "Hints on Building a Church." He says the "east end is square." It is not generally known that this east wall was meant to be only temporary.

The Rev. Arthur Wagner, the founder of the church, intended the present building to be only the nave of a larger one, and his purpose was to purchase more land, and to add a chancel separated from the nave by a large pointed arch. I think his idea was to make it a cathedral, but I am not certain on that point.

Mr. Maskell calls "the introduction of a recessed arcade, giving the appearance of aisles without their advantages," a costly expedient. There was never any intention that the arcade should suggest aisles, nor is it a costly expedient. The first sketch design prepared by Mr. Scott showed ordinary buttresses carried to the ground. All that was done in the completed design was to build the buttresses, join them by pointed arches, and to place the curtain wall on a line with their outside faces till the walls came well above the adjoining buildings. This curtain wall was then brought to the inside face, and the buttresses appeared outside—an expedient which I think must be considered a clever and highly satisfactory one, and certainly not expensive.

The other allusion is in Mr. Bampus's "Cathedrals and Churches of Belgium." The only point to be noted in his complimentary passages is that he calls Mr. Scott Mr. Edward Scott. His Christian names were Edmund Evan, and not Edward. The first design made by Mr. Scott was for a much lower structure than the present building; but while he was preparing it Mr. Wagner took a short trip to the Continent, and came back much impressed by some of the churches he saw there. The result was that he decided to build a more ambitious structure, and the height of the side walls was increased in successive sketch designs till they reached their present altitude, which, if I remember rightly, is 90 ft. above the floor line.

Mr. Arthur Wagner was the son of a former vicar of Brighton, and was himself for many years vicar of St. Paul's in West Street. Mr. Scott, whom I never saw after 1877, died in 1905, unmarried.—I am, etc.,

F. DE J. CLIFRE, F.R.I.B.A.

Wellington (New Zealand), diocesan architect, and formerly an articled pupil to Mr. Scott while St. Bartholomew's Hospital was being built.
157, Featherston Street, Wellington,
New Zealand, April 14, 1919.

The Matlock Bath U.D.C. has approved plans for a cinema in the park, for the Midland Electric Theatres, Ltd. Messrs. Naylor and Sibley of Derby, are the architects.

The housing schemes submitted to the Local Government Board last week numbered 199. 196 promoted by local authorities and three by public utility societies. In 164 schemes the area is definitely stated, and it amounts to 1,724 acres, which, at an average of ten houses to the acre, would give room for 17,200 houses. The total number of schemes submitted to the Board is now 1,461, representing an area of some 22,000 acres.

PROFESSIONAL AND TRADE SOCIETIES.

THE ARCHITECTS' BENEVOLENT SOCIETY.—Mr. Henry T. Hare presided at the annual general meeting of the Architects' Benevolent Society on the 14th inst. The annual report stated that during the year 1918, in addition to the ordinary work of philanthropic assistance, the society has continued, as indicated in previous reports, to administer the funds of the Civic Survey Joint Committee and the Architects' War Committee. In the autumn the Government Committee on the Prevention and Relief of Distress acceded to the request of the Devon and Exeter Society of Architects that the scheme of Civic Surveys should be extended to Exeter and Plymouth. The Civic Surveys schemes have, therefore, recently been in active operation in four areas. The funds administered by the society in this connection at the end of the year amounted to £12,500. The funds at the disposal of the Architects' War Committee have enabled the payments for subsidised employment and other helpful forms of assistance to be continued. The amount thus distributed since the formation of the committee is over £3,500. The amount distributed in pensions and grants by the society, apart from the funds of the Civic Survey Joint Committee and Architects' War Committee, was £1,008 5s. The total amount received in donations during the year was £148 1s. The late Mr. Frederick West, an old subscriber, left a legacy of £50 to the society. Towards the end of the year Mr. Thomas Dinwiddie, F.R.I.B.A., of St. Margaret at Cliffe, Dover, announced his intention of presenting the society with £1,000 National 5 per cent. War Stock. The members of council for the new session were elected as follows:—President, the President, R.I.B.A.; vice-president, Mr. Reginald St. Aubyn Roumieu; ordinary members, Messrs. Edwin T. Hall, Henry Loyegrove, Sir Ernest George, Messrs. Osborne C. Hills, H. D. Searles Wood, Sydney Perks, Arthur Crow, George Hubbard, T. E. Colcutt, Banister F. Fletcher, Campbell Jones, E. C. P. Monson, Herbert Shepherd, E. J. Sadgrove (representative of the Society of Architects). Mr. W. Hilton Nash and Sir C. A. Nicholson, Bart., were elected respectively as hon. treasurer and hon. secretary.

THE SURVEYORS' INSTITUTION.—The annual general meeting of the Surveyors was held on May 19. The annual report which was adopted shows a slight increase of members of 46 on the year, making a total of 4,955. The effect of the Armistice and the early prospect of peace is discernible in the capital value of the Institution's securities, which on 31st December, 1918, showed an increase for the first time for several years, the improvement over last year being £1,024. By a reduction of the Revenue Balance, and by applying the entrance fees of new members to the purpose, the loan from the bank, which was arranged in 1917 to enable the Institution to support the newly issued War Loan in response to the appeal of the then Chancellor of the Exchequer, has been reduced by £2,500. The number of candidates sitting for the professional examinations was 65, a slight increase over 1917 and 1918, the totals of which were 73 and 53 respectively. Of the 85, 65 satisfied the examiners, the percentage of passes being 76.47. Fourteen candidates took the Special Examination, which has been set up for military candidates desirous of completing the examination test in a single year in place of sitting for the Intermediate and Final; of these, 13 were successful in passing.

New York has inaugurated a National Union of Tenants. A membership of 5,000,000 is sought, with the object of preventing rent profiteering. It is proposed that this national union shall order strikes in the sections of the country where rents are exorbitant.

A scheme is contemplated at Weston-super-Mare by a London syndicate embracing a site in close proximity to the most popular part of the sea front, on which it is proposed to erect a ballroom, an Indian lounge adapted for concerts, a large pavilion for vaudeville entertainments, a picturedrome, and a winter garden.

Our Office Table.

The remains of a steamer which have evidently been long at the bottom of the sea have been found in the course of dredging operations embedded in one of the big sandbanks at the mouth of the Mersey. Of sound English oak, her date is long anterior to iron shipbuilding, but her timbers are sufficiently sound to supply abundant quantities of material for souvenir manufacturers. Bed-plates and funnel remain, with relics of pottery and other articles. The vessel is believed to be the *William Huskisson*, a paddle-boat which traded between Liverpool and Dublin, wrecked in January, 1840, when many of her 120 passengers perished.

A test case came before an Interim Court of Arbitration at 5, Old Palace Yard, last week, the parties being the Carlisle and District Master Building Trades Association and the Carlisle Building Trades Operatives. The Joint Industrial Council for the industry decided to increase wages in the north-western area, and the workmen complain that the increases agreed upon have not been paid. It is contended that the advances had the approval of the Ministry of Labour and should be obligatory on the employers. A stoppage is threatened in the building trade throughout the district unless the agreement is recognised. Evidence was heard on both sides, and a decision will be given in due course.

At the last meeting of the Acton U.D.C. a letter was put in on the submission of the housing committee's minutes, from Maj. Monson, F.R.I.B.A., who protested against the committee's decision to employ the Surveyor as architect for the scheme, and, trusting it was not irrevocable, urged his own suitability for the post. Mr. Kent: Do I understand that Mr. Monson is offering his services gratuitously? The Chairman: Professionally, I take it. Mr. Carter read a letter from Mr. Monson addressed to him as "leader of the Labour Party," in which the writer said that "the Surveyor is a very nice man and excellent at his proper duties, but no architect." It was, the letter added, "a bad piece of trade unionism to appoint a surveyor to do an architect's job." The method would be more expensive in the long run. Comments having been made on the letter, the minutes were confirmed.

The Housing of the Working Classes Committee recommends that a site on the London County Council's Old Oak estate be allocated to the erection of eighteen cottages, according to the designs premiated in the competitions arranged by the Local Government Board and conducted by the R.I.B.A., subject to detailed terms to be approved by the committee, the difference between the actual cost of the land and the erection of the cottages, including the architect's charges, quantity surveyor's fees, and all incidental expenses, to be refunded to the Council by the Board. The cottages are to be let to ordinary tenants, and after seven years a second valuation is to be made, and if of a value less than the permanent loan raised by the Council, the Treasury is to accept responsibility for 75 per cent. of the deficiency. The Council is also recommended in future, in face of Standing Order 277, which provides that all tenders shall be invited by advertisement, to invite such tenders from selected invited firms.

It is proposed to build a general hospital at Selby as a war memorial, to take the place of the present cottage hospital. A site of 9½ acres on the Brayton Road has been offered for £1,970, and sums amounting to £8,000 have been promised.

The Liverpool and District Association of House-Builders, the largest in the country, and the members of which have erected working-class dwellings to the extent of £4,000,000 in value—houses which are stated to be unique in convenience and moderate rental—had an interview with the Liverpool Housing Committee last Friday and obtained from the chairman of the committee (Mr. Richard Rutherford) a promise that their practical proposals would receive due consideration.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Strand, W.C.2

Easton Lodge, Dunmow, Essex. The Seat of the Earl and Countess of Warwick. Reconstruction. Mr. Philip Tilden, Architect.
Parish Hall, Christ Church, Sutton, Surrey. View and plan. Mr. Herbert D. Searles-wood, F.R.I.B.A., Architect.
One of the £350 Standardised Bungalows in Reinforced Concrete proposed to be built on an estate in Essex. Plan and Elevations. Mr. Maurice S. R. Adams, A.R.I.B.A., Architect.

OUR ILLUSTRATIONS.

Guard Houses and Commemoration Column (Viceroy's Court), Government House, Imperial Delhi. Sir Edwin L. Lutyens, A.R.A., Architect.

Currente Calamo.

The Society of Architects feels moved to protest against the apparent ignorance of the British public upon the subject of the duties and functions of an architect. This lack of understanding is the more lamentable in view of the housing problem, which has assumed such vast proportions, and a proper solution of which can only be attained if building owners call in architects to their aid. Architects are constantly invited, through the medium of the Press, to invest their capital and employ their professional talents in managing architectural departments in conjunction with furnishing firms, decorating concerns and the like. Without questioning for a moment the bona fides or good intentions of such firms, we feel bound to point out that they cannot expect a response from any architect of repute—as well might an undertaker advertise for a doctor to join him in partnership and expect an offer. It may not be generally known that any person may describe him or herself as an architect, and there is at present no means by which the public may distinguish automatically between the professional and the quack. Herein lies a danger to the public and a menace to the architectural profession. The only remedy for this state of affairs is the statutory registration of architects, a measure of reform which the Society of Architects has been pressing for many years, and which should now receive Government support in the interests of the public. Doctors, who build up the human body after a breakdown, are compelled to register by Act of Parliament. It is strictly analogous to affirm that there is a similar need for compulsory registration of architects, who are similarly engaged upon building up the country. Doctors, dentists, chemists, solicitors, and other useful servants of the public have to be registered. It is surely time that similar means were taken to exclude the "quack" architect.

We are very glad the Government's second defeat—and by 97 to 27 votes—in the House of Lords last Thursday was in connection with the little manœuvre by which has been sought to saddle the Ministry of Health Bill with two Parliamentary Secretaries instead of one. It is perfectly true, as Lord Salisbury said, it

is impossible to treat the present House of Commons as an ordinary House, as there is no opportunity for any side opposed to any Government proposal to have their case properly represented in the Division Lobby. Moreover, as Lord Downham pointed out, there is no justification for the appointment of more than one Under Secretary, and when the Bill was brought in Dr. Addison himself had come to the conclusion that one was enough. The truth is that this latest of many attempts to find soft jobs for favoured proteges is simply another straw it is sought to add to the camel's burden, and is reprobated by every man in Parliament and out of it who is not looking for a similar bit of surreptitious fat, if he is complaisant enough to let the bigger sharks feed first. We hope the Lords will stick fast to their amendment, and keep a sharp look-out that by some other dodge the long-suffering taxpayer is not landed with the cost of another sinecure. He has enough to keep as it is, in all conscience!

The Increase of Rent Acts, 1915 and 1919, are having ever-widening effects upon house owners and occupiers. The Court of Appeal is found to be taking larger and more liberal views than even the judges of the High Court. Thus a revolution is being wrought in the legal position of landlords and tenants which will work its way, at all events, until March, 1921, and so is of deep interest to all who have to do with houses in any form. The recent case of "Epsom Grand Stand Association, Ltd., and E. J. Clarke" is the latest leading decision of the Court of Appeal, and is of the utmost general importance. The plaintiffs were brewers, and they sued for possession of licensed premises which were a "tied house." The defence was based upon the two statutes. Mr. Justice Peterson had held that the plaintiffs might "reasonably" require possession for the occupation of someone in their service, and gave them judgment. On defendant's appeal the plaintiffs argued the larger question that these licensed premises were not a "dwelling house" within the Act, which, therefore, did not apply. But the three Lords Justices, in allowing the appeal, held that, as the house was dwelt in and was let to the defendant for that purpose, it was a dwelling house, although parts of

it were used as licensed premises. This decision seems to show that all shops with dwelling rooms over also come within the Act, which means a great extension in favour of tenants. The Court further ruled that the whole onus of proving that the place is reasonably required for occupation by himself or his servants falls upon the landlord, and it is for him to satisfy the Court by evidence of facts. These two points will greatly enlarge the effects of the Acts in favour of tenants who are now in possession.

In view of the retirement on October 12 next of Mr. W. E. Riley, F.R.I.B.A., the Superintending Architect of the London County Council, the General Purposes Committee recommends that applications for the post should be invited for the appointment at a salary of £2,000 a year from candidates not less than 30 or more than 48 years of age, and that officers of the Council should not be excluded from applying. Mr. Riley is, by resolution of the Council, associated with Mr. Ralph Knott in the erection of the new County Hall, for which the Council has undertaken to pay him a commission on the first-named work. Very wisely, we think, the General Purposes Committee does not consider it desirable or expedient to disturb this arrangement. It recommends, therefore, that Mr. Riley shall continue also to supervise the erection of the new Sessions House till its completion—probably in 1920, and that he shall receive payment calculated at 1 per cent. on the amount of the balance of the contract outstanding at the date of his retirement on October 12 next. Mr. Riley has well earned his honourable retirement, and London is indebted to him for the pluck with which he has stuck to his post through the past trying four years and a half, and the regrets of his staff and those of every member of the Council will follow him. Not the least lasting monument of his administration will be the splendid work he did for London housing, and we trust his successor will be allowed to continue it on the lines which, at a time when the problem was being tackled with little energy and not much discretion, he had the wisdom to perceive and the courage to pursue, fortified by the conviction that they were the only really practical ones, and the support and concurrence of the successive Housing Committees of the Council,

which will justly share the credit of the success achieved.

We are glad that the Land Union intends to take an active part in preparing evidence to lay before the Select Committee of the House of Commons which is being set up to inquire into the working of the Land Taxes. It is intended to approach a number of experts who have an intimate knowledge of the effect the taxes have had on the subjects incidental to the ownerships of land with a view to inducing them to lay their experience before the Committee. There seems to be an impression that now the Committee has been appointed the taxes are at an end. This is not so. The Finance (1909-10) Act, 1910, still remains on the Statute Book, and unless evidence is put before the Committee that points clearly to the necessity of its repeal, it is likely to remain there. Since the taxes were imposed, the Land Union has exposed their injustice in a long series of test cases in the courts. The Lumsden case, to begin with, proved that increment value duty was a direct check on the development of land and the building of houses because it imposed a charge the amount of which the developer or builder was unable to ascertain when he was calculating the cost of his enterprise. The Camden case showed that a landlord who let his property below the full rack rent was liable to be taxed on his generosity. In the case of Ferguson and the Commissioners of Inland Revenue it was demonstrated that the land held in reserve for the purpose of an industry, although it was essential to have it if the industry was to develop and be successful, was liable to Underdeveloped Land Duty. The agricultural cases of Hunter and Smythe and the Commissioners of Inland Revenue proved the fact that it was practically impossible to get an intelligent valuation of agricultural land under the provisions of the Statute. Another class of cases, such as Burgess and the Attorney-General, Dyson v. the Attorney-General, and Foran v. the Attorney-General, showed that the Commissioners were endeavouring to get information from the subject which they were not entitled to do under the Act. If the Land Union, or some similar association, had not been in existence to help and advise the individual taxpayer, it would have been quite impossible to have secured some of the above decisions, and the injustice of the Act would not have been so speedily exposed. The end of the contest now appears to be in sight if the Land Union is properly supported, so that it can ensure the full case against the taxes being put before the Select Committee. Each point to be raised will have to be carefully considered, and the best experts upon it will have to be called before the Committee, so that they may be able to form an accurate judgment of the working of the taxes. Of these points, the check to building development, as evidenced by the fewer houses that have been built since the Act was introduced in the House of Commons, most concerns our own readers, but these orders are of only secondary importance, and which directly or indirectly

concern every honest citizen, whose support should be a substantial gain to the effort the Land Union is making.

We have read with some interest a small volume published at half-a-crown by Messrs. Constable and Co., Ltd., 10, Orange Street, W.C., by Mr. W. R. Cooper, entitled "The Claims of Labour and Capital," to which Mr. G. H. Roberts, M.P., contributes a prefatory note, in which he quite truly describes it as "a real and timely contribution to the subject," setting forth the salient points of wealth production and distribution in language and illustration easy to understand and well calculated to assist the clear thinking and bold treatment which it is requisite should be applied. We wish its purpose all success, for it is painfully evident to all concerned with the employment and management of labour that, so far, there is no disposition manifested of the co-operation of the workers in the stimulation of production which both the author and Mr. Roberts declare is absolutely necessary. On the contrary, the crafty policy of the trade unions is more popular than ever, especially in the trades which have obtained the largest increases in wages. The consequences are already visible, and diminution of employment is following, and all the agitation that can be organised will not coax or coerce employers to make or the public to buy things on to which the cost of shorter hours and simultaneous higher wages have been loaded. Till this is recognised nothing can save the workers from chagrin at the continuous decrease in the purchasing power of their enhanced wages, and the disgust of employers and buyers at the decrease of products, notwithstanding their higher prices.

The varied contents of "The Studio Year Book" of Cottage Designs, etc., the excellently produced annual extra number of "The Studio," comprise not only typical old and new cottages, but also a series of coloured and other illustrations in monotone showing interior decorations, wall papers, metal work, pottery, stained glass for domestic purposes, porcelain, garden figures by Mrs. Stabler, embroidery and textiles all by well-known designers whose work has been chosen with discretion, so that merely queer examples are thoughtfully avoided. Mr. Sydney R. Jones writes usefully on Small House and Cottage design, illustrating his remarks with typical specimens, adapted to different materials in various districts, including sketches of detailed features such as bay windows, doorways, pents, and entrance hoods, chimneys, R.W. heads and plaster treatments for simple gables. The plans given are mainly reproductions of the Local Government Board's types or others based upon the Tudor Walter's report, the latter being the best of their kind. The Governmental Departments plans, as also several in recent housing competitions, too often exhibit departures from the rules laid down by the Advisory Committee. Minimum sizes are reduced for bath-rooms and larders, winders to

staircases are introduced, and bedrooms are so restricted that only single beds can be used, whereas the double bed is invariably used by the industrial classes, who obviously cannot afford to allocate a separate sleeping-room to one individual. Another common defect in the official plan is the necessity of bringing bedroom steps through the day rooms and entrance hall in order to reach the w.c. The precise position of the bath necessarily varies in different localities, much depending, of course, upon the occupation of the tenant. Mr. Jones has not overlooked the difficulties connected with the provision of baths in all small tenements, and he advocates the saving of labour and fuel by hot water supply if public services could be established in all populated areas and connected with every dwelling. This idea at present seems somewhat Utopian, there being no practical means of preventing extravagant waste on the part of the users and water meters are too expensive and unreliable in ordinary use. The index number added to each of the illustrations in this booklet as a reference to the descriptive text enhances their utility and economises the reader's time.

The plain, straightforward labour-saving character of the furniture illustrated is suitable and hygienic. The old windguard to the fitted wooden settle next the door, as shown for the cottage parlour, is picturesque enough with the squab to make for comfort, but the tired woman and labourer sometimes need a really more restful spot than an odd window seat or a straight-backed rush-bottom chair. The L.G.B. panelled door on page 47 is very ugly and bad; the ledged door on page 50 being far preferable. Midst these details of fittings the letterpress has reference to the use of concrete, the writer truly remarking that the possibilities of this material and its just uses and limitations in relation to domestic architecture have yet to be developed. Mr. Sydney Jones, however, entertains a doubt as to such possibilities, and seemingly his ideal of concrete is provided by the Chestow housing scheme, where large-sized blocks were used, the dull appearance of the material being, as he says, relieved by a surface moulded pattern on the outside. The effect is described as pleasing, and no doubt the results in many ways are admirable, but in a West Country district where stone abounds, we are disinclined to agree with the writer's conclusion that this concrete walling is not out of character with the building characteristics of the vicinity. The essayist realises that the roofing of cottages is important, and he treats this point appropriately enough, though he fails to realise the possibilities of an extraordinary development in the direction of roofing in the near future. Mr. Alfred H. Powell deals with Old English country cottages and their reconstruction for the getting of better villages. His nice examples of the picturesque are well shown. A few old plans illustrating how these historic dwellings might be brought up to date would have been more inform-

ing. The question of expense, no doubt, is the primary difficulty. Mr. Hall Thorpe, R.B.A., deals with colouring interiors, and Mr. Percy A. Wells exhibits several pieces of well-made and business-like cottage furniture of good proportions and pleasant lines. Mr. Sidney Howard is represented by some decorative and well-arranged wallpapers in happy colouring.

Zinc water-pipes in a building in contact with mortar containing gypsum become in a relatively short time corroded and eaten through in places. This action has, the *Barnett* reports, been investigated at the Berlin-Lichterfelde-West Test Station, where both zinc and lead have been subjected to the action of water, aqueous solution of salts, gypsum, cement, and various mortars, for periods of from 57 to 63 days. Zinc was most vigorously attacked by rain-water. Where the surface is wetted and quickly dried a protective coating of oxide is formed; but where the contact with running rain-water is prolonged, as in the case of roofing plates and gutters, the possibilities of energetic action must be reckoned with. The supply water in the pipe has but little destructive effect. A protective coating of oxide is soon formed. The action of solutions depend on the substance in solution. The most active agent is sulphate of lime. Zinc is energetically attacked by mortar containing gypsum sand, but only feebly by mortar containing limestone sand alone or with an addition of gypsum. Lead, on the other hand, is energetically attacked by limestone alone and with an addition of gypsum, but only feebly by gypsum sand mortar. Both metals are strongly attacked by pure cement, but the destructive action is lessened in progressive measure by the addition of sand. Hence zinc should be put in contact only with limestone (carbonate) mortar, and lead only with gypsum (sulphate).

THE SIN OF UGLINESS.

The debate a fortnight since on Sir Martin Conway's plea for some regard to "the natural beauties or architectural amenities of a neighbourhood," in connection with the coming operation of the Housing Bill, elicited, of course, the usual evasive replies from the Minister responsible for the Bill and the customary gibes at those who urged the importance of beauty as an educative element of happiness. Some of the gibes were silly enough. Mr. Hogge, for instance, clenched the matter according to his lights: "Let us have the houses first and discuss their artistic merits afterwards." Surely as remarkable a proposition from a serious legislator as if—in his days of doubtless useful zeal against gambling—he had offered to take a hand at Crown and Anchor with a party of Australian soldiers in ignorance of the rules of the game, on a promise to discuss them after it was over. One might have thought, too, that even Sir Tudor Walters' excuse—that since architects had to supply what the public wanted, the public must be first educated in sound principles—would have been regarded, by anyone capable of rightly connecting cause with effect, as extraordinary as a recommendation to refrain from en-

forcing payment of a debt till the man who owed it was first educated in the honest principles of ordinary business. Dr. Addison's nervousness, as he declared his adhesion to "eight houses in rural areas and twelve in urban," was doubtless the fruit of consternation lest "we might be led as a statutory obligation into disputations on works of art," an adventure, as he pleaded, not to be expected from a Government Department!

Not at present, evidently, as Sir Alfred Mond no doubt thinks. Asked last Thursday by Mr. Joynson Hicks whether any proposal had been under consideration to widen the herbaceous border in the front of Hampton Court Palace, involving an alteration in the width of the terrace and an interference with the architectural design by Sir Christopher Wren, and if he would undertake that no such interference should be permitted without the sanction of Parliament, he admitted various proposals for the improvement of the gardens had been submitted to him, and they "are being referred by him to a committee of horticultural experts." Quite rightly, perhaps, as far as the turfs and the trees, and the flowers are concerned; but it is not so certain whether the horticultural experts know much about the architectural designs of Sir Christopher Wren, or whether an architect more conversant therewith might not advantageously assist their deliberations.

We are glad, anyhow, that Dr. Addison is not altogether adamant. "Adequacy" in the plans of the various local authorities is to be provided for in the Bill, while the importance of taking "aesthetic considerations" into account is to form the subject of an official circular. We shall read that circular with some interest when we get it, but we are none the less uncomfortable about the fate of many old, but perfectly useful, as well as beautiful cottages, in the face of the Section of the 1909 Town Planning Act which doomed them to destruction. We are glad to hear that the S.P.A.B. is taking action and has already approached Dr. Addison, begging him to contemplate the inclusion in his Housing Bill of a clause or clauses amending the Section in question of the 1909 Act. It would see a Central Advisory Board formed to which appeal might be made against a demolition order in cases where it can be proved that the cottage is a perfect and valuable example of a given period in the development of the art of cottage-building in England. That, surely, might be conceded without raising the wrath of the wreckers!

In these days of many Ministers, with well-paid staffs and big salaries, we should like to remind some of our legislators that for £27,000 a year France runs a Ministry of Fine Art, consisting of eight administrative bureaux, comprising, amongst others, the services of architects and builders attached to the various national palaces, theatres and historic monuments, the teaching of Art; the State manufactories, the preservation of State furniture, etc. Directing its affairs and responsible to Parliament is an Under-Secretary of State, who is able to give information and advice when French legislators want it, and to carry out their wishes when agreed to. That Ministry gives France what Sir Tudor Walters says we lack—an education in sound principles of Art. It has taught them that Art is the most socially useful thing a nation can have—that it is, indeed, one of the first necessities of civilisation, and that the lack of it leaves the masses to lead the lives of mere beasts of burden, dead to all sense of the fact that the love of beauty and the longing for

beauty are the true elements of real happiness. That Ministry has also given France cash value to the extent of millions of pounds, and made the Frenchman artist as well as trader, applying the same faculties of imagination to commerce as to art. That Ministry is to-day charged with the Herculean task of restoring as well as may be the ruined towns and monuments which German rapine has robbed the world of. It is, we admit, the outcome of years of systematic, far-seeing and intelligent cultivation which the hothouse methods of South Kensington can never equal. Let us follow France along the same road and free ourselves from deadly mediocrity and the masses from the sins of ugliness we perpetrate or tolerate.

We dealt at greater length with this matter some six years since, when Mr. Wynford Dewhurst published his volume thereon. His propositions appeared to us fairly urgent then; they are much more so to-day, when it depends greatly on those who are to build them whether the homes of the masses during the next few generations are to be aids to their acquisition of the perception of and love for beauty, or sins of ugliness, and the further demoralisation of our children and children's children.

Our Illustrations.

IMPERIAL DELHI GOVERNMENT HOUSE.

This double-page plate illustrates the Guard Houses and Commemorative Column, Viceroy's Court, and our plate is reproduced from the water-colour drawing now in the Royal Academy Exhibition. Mr. Herbert Baker, F.R.I.B.A., is joint architect with Sir Edwin L. Lutyens, A.R.A. Our previous illustrations, also from the Academy series of drawings, were published in *THE BUILDING NEWS* for May 7 and 21. Others will follow in further elucidation of this national Indian undertaking, of which we printed particulars with the other plates.

THE REBUILDING OF EASTON LODGE, DUNMOW, ESSEX, FOR THE EARL AND COUNTESS OF WARWICK.

A year ago Easton Lodge was burnt down, with the exception of a great block of buildings erected in Victorian days. It has been found impossible to save any of the original house, which had been almost obliterated by the "improvements" of fifty years ago. It has been the task of the architect to convert a stucco bastard Jacobean exterior to harmonise with a Georgian interior, adding at the same time enough accommodation in the shape of twelve extra rooms to make up to a certain extent for that which was destroyed. The architect has found it possible by symmetricalising the house and using the great saloon (50 x 20) as the centre, to bring it into relation with the beautiful garden designed by Mr. Peto. Messrs. John Garlick, 43, Sloane St., are the builders. Mr. Philip Tilden is the architect. His drawing now published is in this season's Royal Academy Exhibition.

CHRISTCHURCH PARISH HALL, SUTTON, SURREY.

This building, the gift of Sir Ralph Forster, Bart., was erected during the war as a soldiers' canteen for the Labour Battalion quartered at Sutton. It was built with the minimum amount of steel in the trusses and stanchions and of timber in the roofs, which are covered with Rok, owing to the war restrictions; and the

walls were formed with 3-in. breeze slabs. The site being loose chalk, the foundations had to be specially designed to take the wind pressure. The floor was made with 3 in. of tarmack paving. The total cost of this structure, including furniture, was £930. The Hall stands in front of the west end of Christ Church, forming with the Vicarage three sides of a quadrangle. It is now proposed to finish the building, to harmonise with the church. The walls will be faced with red brick, with Bath-stone tracery windows, and the roof covered with red tiling on the Rok asphalt. Mr. H. D. Searles Wood, F.R.I.B.A., of 157, Wool Exchange, Coleman St., E.C.2, is the architect. Mr. R. E. Archer, of West Street, Sutton, is the contractor.

ONE OF THE £350 BUNGALOWS PROPOSED TO BE BUILT ON AN ESTATE IN ESSEX.

The roads on the property in question are already made and the sewers are laid. The estate is situate in an attractive part of the country within easy access of the City. The houses are to vary in size and elevational design. The Bungalow illustrated is a typical example, thatch being shown. The walls to be hollow, and the system employed is on the basis of the ellipse, similar to the method illustrated last week for a war-memorial church, with groined interior, designed in reinforced concrete allowed to express itself plainly outside, no space being lost in the roof and every cubic foot of enclosed area being utilised. In working out the detailed plans for this bungalow the two end bedrooms have been extended so as to allow of the beds standing clear of the walls and end-on against the west gable wall. To adhere as nearly as possible to the sum named, the fireplace recess in the living-room has been correspondingly reduced in depth. The prices are calculated at present rates. Every detail is standardised with a view to strict economy. The amenities of a small middle-class home have been considered and storage cupboards are contrived on either hand of the central passage under the roof-arch over the bathroom, larder, coal-place, etc., where good room is available. When tiles or slates are used they get a fixing on breeze fillets forming part of the vaulted concrete, and thus an air space is obtained between the inside shell and its covering. Mr. Maurice S. R. Adams, A.R.I.B.A., is the architect and inventor of this constructive patent.

Manchester's Haweswater scheme, under which it is proposed to spend £10,000,000 to bring water from Westmorland, was approved by the House of Commons Committee last Wednesday.

Sites had been obtained and plans for 150 houses passed by the Hadham (Herts) and Standed (Essex) Rural District Councils, which meet at Bishops Stortford, and the Local Government Board had approved the plans, but the local Housing Commissioner insists that an architect shall be employed and the plans are to be scrapped. It has been decided by the councils to advertise for an architect.

The Joint Consultative Board for establishing better conditions in the building trade has been constituted. It consists of five representatives of the National Federation of Building Trades Operatives, five architects (including the President of the Royal Institute of British Architects), five contractors, and five surveyors. It is to be called the "Building Industries Consultative Board," and will meet at 9, Conduit Street.

The Keeper of the Fine Art Department at the Ashmolean Museum, Mr. C. F. Bell, F.S.A., Fellow of Magdalen College, with the sanction of the Visitors and the Ruskin Trustees, has arranged in this centenary year, in the University Galleries, an interesting exhibition of the drawings executed by Ruskin, and presented by him to the Drawing School, which he founded in 1871. Ruskin was born on February 8, 1819.

THE BUILDING CONTRACT OF THE FUTURE.

By SULLIVAN W. JONES.

The contract system which was in almost universal use before the war had revolved about two wholly false assumptions. One, that a modern building can be described by drawings and specifications with sufficient completeness to provide for an accurate computation of costs, and, hence, for bids on its construction that are fairly competitive; and the other, that the contractors' business is that of selling finished work, and that he is essentially a merchant, who should, but by no means always does, possess a specialised knowledge of the suitable and economical use of the things he buys and sells.

The first of these false assumptions leads us direct to a consideration of the sufficiency of the architect's service, while the latter involves a study of the contractor's status under this form of contract. We have thus established at least one direct relationship between the two fundamental questions. While they have been stated separately, so interwoven are they that discussion of them singly is impossible.

SPECULATIVE ELEMENTS IN LUMP-SUM CONTRACTS.

Let us assume for the moment that we wish to hold to the lump-sum form of contract and competitive bidding. Obviously, then, we must find some way of giving to the contractor in advance the information essential as a basis for fair competition on price? Can it be done? Drawings and specifications may be improved through further standardisation; inaccuracies of quantities may be largely removed by the adoption of the quantity system; and the cost of work may be placed upon a more accurate basis by the "open-price," which will also raise the price standard and assure a better margin of profit to the contractors. But are these partial remedies all that is necessary?

There are always several ways of doing a thing, one less costly than another, and there will always be differences of opinion between the contractor and architect as to which is the best, or whether the substitute proposed is permissible under the contract. There will always be disputes over questions of quality because quality, both in workmanship and materials, is well nigh impossible to describe.

There is another important speculative element in every lump-sum contract, and it will exist even if drawings and specifications could be perfected. It is this element of risk which has now acquired such proportions that no sensible man is willing to assume it. When a contractor signs such a contract, he sells short for delivery over a stipulated period of time, the quantities of labour and material required. In some localities, in times more normal than these, or than those to which we look forward, the risk of loss to the contractor from a rising labour market has been minimised by wage agreements with organised labour. In other places that stability has not been secured. And the material market never has been and never can be brought under control. Estimating, even under the most favourable conditions, will always involve risk to the contractor, and as long as there are risks, competition will be based on risks instead of work to be done. The low bid, whether it be too low or not, will always be the product of the greatest error or the assumption of the greatest risk.

WHICH IS WRONG, COMPETITION OR THE STIPULATED PRICE?

Let us examine the case for the lump-sum contract. I have said it had a corrupting influence on everybody involved in it. Almost every ill and every evil in the building industry, I am satisfied, may be traced to the lump-sum contract. Under it the interests of the owner and contractor are diametrically opposed. The contractor's profit lies between the actual cost of the work and the amount of the contract. The greater the cost, the less the profit, and vice versa. The contractor's aim is, therefore, to deliver as

little as possible, while the interest of the owner is in exacting the utmost of the contractor. The contract stands between them, setting up antagonisms where there should be co-operation, creating conflict of purpose where unity of interest is essential to success. Under the lump-sum contract the contractor has been a merchant, buying and selling finished buildings.

The arguments against the general contractor being a merchant are possibly more convincing than any that can be directed against the merchandising function for the subcontractor, especially the subcontractor who manufactures and installs a product, but they apply, nevertheless, with the force of conviction to both. The general contractor manufactures none of the materials which he handles. He has no plant or factory and has no legitimate use for either. He has no capital invested in anything of permanent value to him. The money which he uses in conducting his business is a temporary substitute for the owner's capital ultimately represented by the finished building. What is it the contractor has to sell? Service, his expert knowledge of the fabrication of buildings. In the last analysis, service is the thing he has always sold, but instead of selling it to his employer, he has sold it to himself. The system has placed a premium on disloyalty and shrewdness in the contractor, rather than on engineering skill and efficiency.

The same contradictions have confused and misled the subcontractor. He has wasted his best energy fighting for trade discounts on the materials he purchases in order to resell them competitively at a possible profit. He, too, has struggled to make a livelihood through the purchase and sale of labour and materials when he should have centred his effort on perfecting his service and finding a market for it. If service is the commodity in which the contractor deals, and we wish to preserve competition, obviously, then, competition must be in service and not in the price for finished work. The value of service is measured in terms of results. If economy is one of the results looked for, and secured, let it be an asset to the contractor instead of stolen fruit to be concealed.

LUMP-SUM CONTRACT UNFAIR TO THE ARCHITECT.

But we have not yet put in all the evidence against the lump-sum contract. The architect has not escaped its insidiously evil influence. The average owner, the owner who is inexperienced in matters of construction, undertakes his venture on the assumption that the architect is omniscient, and that when a bid is received on the drawings and specifications it is all-inclusive. This is the fallacy of the complete and sufficient drawings and specifications. A mistake is made when an architect accepts employment without disclosing to his client the unavoidable limitations which are placed upon his service. As the work proceeds, omissions are discovered, differences arise as to what is meant by vague expressions and indications, and the architect is at once placed on the defensive with respect to the sufficiency of his drawings and specifications. He has the choice of confessing his plight to the client or covering it up by compromise with the contractor. Some pursue the former and honourable course; others the latter. The position of the architect under such a contract is unwholesome. It is unfair to him. It is unfair to the owner, who has sought the architect's advice on the basis of confidence. It is unfair to the contractor. It is a high tribute to the profession, and the professional tradition, that so few architects have succumbed to the temptations which constantly urge them to abandon the difficult rôle of conscientious servant.

That the architect is keenly alive to his untenable position, and to the gravity of the consequences to the whole building industry if conditions remain unchanged, is evidenced through the appointment by the American Institute of Architects of a Post-War Committee on Architectural Practice, charged with the study of the architect, his functions, relation to the public and public interest, and his education; and by the principles adopted as fundamental by the Committee on Contracts and Specifications in connection with

From a paper read before the Canadian Institute of Electrical Engineers.

its deliberations on the cost-plus-fee form of contract. These two committees, beginning work on two distinct questions, have found that their labours are complementary; and I venture to predict that in the end their work will be co-ordinated, at least to this extent: that the Committee on Contracts and Specifications will perfect the cost-plus-fee form of contract and the other committee will recommend its universal adoption.

COST-PLUS-FEE CONTRACTS.

The cost-plus-fee contract, as we have known it, has been a compromise document. The status of the contractor, by reason of his contract liabilities, and by reason of the unchanged attitude of the architect and owner, was not radically different under this form of contract from what it had been under the lump-sum contract. While his interests coincide with those of the owner, the contractor failed to realise the nature of the relationship, and, consequently, his attitude of mind remained unaltered. The Committee on Contracts and Specifications feels that such change must be complete, and that such changes must be made in the document as will give the contractor a new picture of his status and responsibilities. The committee asserts that, "In the light of recent experiences of the Government in the use of the cost-plus-fee system, the following general principles are felt to be fundamental:—

"(1) The contractor becomes in effect a professional adviser of the owner as his 'construction manager,' and should be relieved of all contract liabilities inconsistent with such a relationship; (2) for this purpose the owner should pay directly for all materials, and should enter directly into contract with sub-contractors rather than having sub-contractors make their contracts with the contractor. Payrolls must perforce be paid by the contractor and reimbursement made by the owner; (3) In view of this professional relationship no 'bond' guaranteeing performance is needed or proper, any more than for the architect."

It is difficult to comprehend at once the full significance of this statement. The principles enunciated find expression throughout the document. There was a discussion on the expediency of changing the term "contractor" to "constructor," or "manager of construction," or "constructing engineer," but it was decided that a wiser course to pursue was to use the old and familiar term and let the contractors' wishes gradually crystallise into the choice of some substitute term which would be more appropriate and more descriptive of the new function.

This is the wording of the clause, which, in the older form of contract, was captioned "sub-contracts." It now bears the title "separate contracts."

"All portions of the work that the contractors' organisation has not been accustomed to perform, or that the owner may direct, shall be executed under separate contract. In such cases, either the contractor shall ask for bids from the contractors approved by the architect and shall deliver such bids to him, or the architect shall procure such bids himself, and in either case the architect shall determine with the advice of the contractor and subject to the approval of the owner, the award and amount of the accepted bid. The owner shall contract direct with such approved bidders, etc., etc."

This clause, it will be observed, establishes the relationship between, the so-called sub-contractor and the owner or architect, which the sub-contractor has sought to realise through the elimination of the general contractor.

ADVANTAGES OF COST-PLUS-FEE CONTRACTS.

It must now be plain that the architect's status and function cannot be considered without considering, also, the status and function of the contractor. It seems almost superfluous to point out the advantages to the whole building industry from making the cost-plus-fee contract the rule instead of the exception. It is important, however, for us to think of this proposed change in terms of results, so that we may all have a clear conception of what it is we are striving for. But when we think in terms of results, we again find it impossible to think of the archi-

tect and the contractor separately. First, the contractor, or let us call him the constructor, will be selected on the basis of confidence and his service record. Since the contractor's profit will no longer depend upon his ability to cheapen the work, which has been the motive underlying the general practice of offering substitutions, we may expect fewer discussions of this kind in the future. Considerations of price alone will less and less influence the selection of materials. The architect and the contractor will work together instead of in opposition. The knowledge and experience in construction which the architect lacks will be furnished by the "constructor."

This, to my mind, is one of the most important results that will be secured, for it must be realised, and is realised by the thinking element in the architectural profession, that ability in design, which reaches its highest development only in men who are sensitive, imaginative, and impulsive, is wholly incompatible with the scientific quality of mind that works in exact terms of fact and statistics: an essential pre-requisite to the proper performance of the "constructor's" function. Under the cost-plus-fee form of contract, the architect, the contractor, and the owner enter into a tri-party agreement to accomplish a single end. It does not require much imagination to see in this change in the contractor's status the reincarnation of the master builder of the Renaissance, through a virtual, if not an actual partnership of the two talents that produced the world's most inspiring and enduring architectural monuments.

The salvation of the architect, the contractor, and the industry lie in such a partnership of talents. If it cannot be brought about, I predict that contractors will try to become architects as well, and that architects will attempt to become builders—and, in the broad sense, few will succeed. Buildings will be either poorly constructed or poorly designed, and the loss to the public and in the prestige of the industry will be immeasurable.

In connection with the adoption of the cost-plus-fee contract system, I wish also to point out the importance of a standard cost accounting system and the greater value of the open-price plan as a powerful factor in education and in establishing mutual confidence.

BUILDING LOANS DIFFERENTLY ARRANGED.

There is one, and only one, serious difficulty which lies in the way of securing these fundamental reforms. It will be necessary to effect a change in the policy of the lender of the money for construction. Relatively little new construction is carried forward without building loans. Such loans are usually a certain percentage of the contract cost of the building. The question is, can the great lending companies be made to feel that they will be amply protected in lending the same percentage on a carefully prepared estimate by a reputable "constructor," even though the amount of that estimate is not guaranteed by a contract and bond? I believe that, ultimately, such loans will be secured on the basis of confidence, even more readily and with less question as to values and risks than has been the case in the past. And I believe also that loans so made will be more secure than those made on the lump-sum contract ever have been. This must be so, because the building will be a better investment; both upkeep and depreciation will be less, and costs will rest on the stable foundation of true values, not on the insecure basis of speculation.

The Burnham U.D.C. have agreed to appoint an architect in connection with their housing scheme. The cost is estimated at between £10,000 and £12,000.

When lime is cheap and suitable it makes a good foundation for floors, the only disadvantage being the slow setting. A 1 in. Pud. load cement floating should be laid over the concrete while the latter is wet. This method will be adopted in districts where good building lime is obtainable for preventing rising dampness under wood floors of kitchens, sculleries, and w.c.'s.

TREASURE TROVE IN EAST LOTHIAN.

A remarkable discovery of fourth century plate has been made at Traprain Law, East Lothian, on Mr. Arthur J. Balfour's estate at Whittinghame, thanks to the liberal enterprise of Mr. John Bruce, of Helensburgh, a member of the local council. The results are graphically described by Dr. George Macdonald in the *Scot-man*.

"The spade had been busy for only a fortnight, when the excavators lighted on a small pit lying a little way outside of one of the oval-shaped enclosures of stones which indicate the habitations of the latest of the four sets of occupants. The pit, which was two feet deep and two feet wide, evidently dated from the same period as the stones which it adjoined, for, while it was filled to the brim with fragments of metal vessels, its upper part was virtually on a level with the surface on which the relics of the third settlement are found. The foreman, who happened to be in sole charge on that particular afternoon, realised the importance of the discovery at once, and acted with the most commendable discretion, taking immediate steps to secure the transference to safe custody of the whole contents of the cache. The find was nothing less than a rich collection of fourth century silver plate, whose crushed and broken condition stamped it as loot and destined for the melting pot. Two tiny coins gave the date: the first had been struck by Valens, who was Emperor from 364 to 378 A.D.; the other by one of his successors, either Gratian or Honorius. The appearance of the metal might have suggested pewter, but the beauty of the decoration left no room for doubt as to its being something much more precious. As the coating of dirt was removed from one piece after another, fresh features of interest constantly emerged. At first the ornament seemed predominantly classical; Pan with his pipes and the birth of Venus were prominent among the figure-subjects. Consequently, when there stood out from the surface of an embossed cup a tree laden with fruit, and having a huge serpent twined around its stem, it was natural to think of Hercules and the golden apples. But, as the figure beside the tree grew more distinct, he was seen to be wearing not a lion-skin, but the costume of the Garden of Eden; and in due course Eve appeared, to complete the picture of the Fall of Man. Farther round the same cup was a charming representation of the Adoration of the Magi. A moment later the Miraculous Draught of Fishes was detected on another vessel, while presently more than one example of the Chi-Rho monogram was noted among the inscriptions.

"In view of the strength of the Christian element, it seemed not unlikely that the cache had contained the spoil of a monastery, and there is much in the general character of the find that goes to confirm this hypothesis. The vessels have been of the most miscellaneous sort—flagons, chalices, platters, bowls, spoons, and the like. But there are one or two of them that must surely have been church furniture. A delicately fashioned little strainer, for instance, has the holes with which it is pierced arranged in such a way as to form the Chi-Rho monogram in the centre, and the legend 'Jesus Christus' round the margin. One can hardly imagine its being designed for any other purpose than the filtration of the sacramental wine. So, too, a long-handled spoon with the Chi-Rho in the middle of the bowl may have been for administering the communion. That method of partaking was in use in the early church, as it is in some countries to this day. Again, on a plain band that surrounds the neck of a richly decorated flask is a punctured inscription, the first and last letters of which are separated by the Chi-Rho monogram, flanked by Alpha and Omega. The inscription itself—'Pnymiacovisiani'—has not yet been satisfactorily interpreted, but it is conceivable that it may ultimately yield the name of the abbey to which the vessel originally belonged. What is certain is that, if the whole of the plate came from a single abbey, it must have been one of the great religious houses. At the same time, there is always

the possibility that the plunder may have been gathered from various sources.

That it was brought from overseas may be assumed with confidence. Christianity had indeed made substantial progress in Britain at a considerably earlier period than the ordinary school book is always disposed to allow. Thus, in 514 A.D., a Bishop of York, who attended the Council of Arles, was able to take with him a brace of Episcopal colleagues. But of wealthy monastic establishments nothing whatever is known till a very much later date. And, apart from this, the internal evidence is convincing. At different times, four or five stray pieces of Roman fourth century plate have come to light in our island; the best known is the magnificent Corbridge lance, picked up on the banks of the Tyne about 1734, and now in the collection of the Duke of Northumberland at Alnwick. All of these belong to the same class as the objects from Traprain, but they are admittedly importations. To find a real fingerpost we have to go to the Continent. The famous treasures at Hildesheim and Bosco Reale are too early to offer a comparison of value. More to the point is that unearthed at Pétrossa, in Roumania, in 1837, but there the art is essentially barbaric. Stylistic affinity, the one unerring guide, leads in the end to Northern France. Two or three of the eight spoons from the Scottish hoard can be closely matched by examples which have been deposited in fourth century graves in the cemeteries of Vermand and of Abbeville, in company with cups and bowls of bronze, whose shapes and beaded ornaments recur in silver at Traprain.

At Traprain, however, the quality of the craftsmanship is far more striking. There is little or no sign of decadence. One is face to face with the heritage of Greece, as bequeathed to the modern world by Rome. When set alongside of what is found, say, on contemporary coins, most of the figure subjects are astonishing in their excellence. The gem of the collection is probably the embossed cup with illustrations from Bible history. This, by the way, has originally been gilded. It displays the same indefinable charm that one associates with the work of the early Renaissance. The whole scene in the Garden of Eden, for instance, recalls the sculptured reliefs on the façade of the Cathedral of Orvieto, while the representations of Adam and Eve reveal that sheer delight in mastery of the human form which is so characteristic of the frescoes of Signorelli. The more formal decoration is no less noteworthy. Some of the designs could hardly be surpassed in the skill with which purity and grace are combined with elaboration and variety. A few of them have been inlaid with gold. One or two have been enamelled. Here and there a hint of Celtic influence can be detected in the lines, but on the whole the native element is relatively inconspicuous. Everywhere the technique is admirable, and now and again it presents features of unusual interest, as in the case of a spoon, the bowl of which is decorated inside with niello, while its outside shows the 'rattailed' prolongation of the handle that was in vogue in the days of Queen Anne.

The loot, we have seen, was carried to East Lothian from Gaul. Who were the raiders who carried it? History suggests an answer. The Celt of the Lothians was not a pirate. Neither was he a savage who would gash a thing of beauty with battle-axe and chisel. But we know that, long before the Romanised Britons were abandoned to their fate by the central government, the sea-robbers from the Frisian coast had become a formidable menace. The first invaders crossed in search of plunder. Later the hunger for land was added as a motive. Although settlement on a large scale did not begin till the fifth century, one of the earlier of the roving bands may have beached their galleys in Aberlady Bay, and erected on Traprain a stronghold, whence they sallied forth to seek for booty farther south; or they may have brought the plunder with them when they originally landed on the Scottish shore. The suggestion that it was Angles or Saxons who buried the silver is curiously and finally confirmed by the occur-

rence in the hoard of one or two articles of unmistakably Teutonic workmanship—a buckle, a silver fibula, and what seems to be a hand mirror made of bronze. No objects of a similar kind have yet been found upon the hill at all. The pirates, therefore, were not in occupation long. And, when they did leave, it was either in hot haste or with the full intention of returning. Otherwise, they would have taken their store of bullion with them. The mystery of the fourth occupation has apparently been solved."

THE SURVEYOR AS A PLANNER

Mr. Thomas Adams, town planning adviser of the Commission of Conservation, delivered an address under the auspices of the Ottawa members of the Dominion Land Surveyors' Association at the Carnegie Library, Ottawa, on March 24, 1919. He said the planning and colonisation of land in new countries was, under modern conditions, an artificial thing, and required the application of art and science to secure satisfactory results. The ultimate aim must be that of conserving human and natural resources, and in Canada, with its lack of population, the most important thing was that of conserving the quantity and quality of the human resources. For that purpose he pleaded that land should not merely be measured for purposes of colonisation, but should be planned and developed with the object of promoting the best economic use of the land, the convenience and efficiency of our industries, and the health of the people. Scientific training and improved educational facilities, together with better means of social intercourse, must also be promoted. Thirdly, co-operation, rural credit, and development of rural industries needed still more encouragement than had hitherto been given.

The surveyor dealing with the measuring and laying out of the land was responsible for the underlying conditions which promoted or retarded these objects. If the land was badly subdivided its economic use might be hampered, its transportation facilities rendered difficult, and its efficiency for production almost destroyed. If in planning the land no regard was paid to topographical conditions so as to get directness of route and easy gradients on the main highways and so as to promote closer settlement, the effect would be that people would be too scattered and too much engaged in the fight for existence to get educational facilities, means of social intercourse, and the full enjoyment of co-operation.

MAKING THE MOST OF OUR EFFORTS.

Canada was limited in its resources by the extent to which it lacked sufficient population to apply the activity necessary to use and distribute its resources. Next, then, to getting more population and to conserving the natural increase of population came the question of planning and developing the land so as to produce the utmost output from the human energy applied.

The increase of the urban population in Canada was not, in Mr. Adams's judgment, a bad thing, except in the case of the very largest cities. The healthiest countries were those with numerous small cities and towns, and so long as these were healthy and properly planned it was a good thing to promote a certain amount of urban concentration.

In 1911 Canada had a rural population of about 60 per cent. and about 40 per cent. urban. The tendency since had been to further increase the urban proportion. He gave figures showing that whereas the total land area of Canada was over 371,000,000 acres, of which 187,500,000 acres had been surveyed, only 20,500,000 acres were under crop. For the amount of land in farms there was far too little land being farmed. One of the conditions that had to be avoided was that of settling land that was unsuitable for settlement.

John McDougall, in "Rural Life in Canada," had given figures to show that the decrease in rural Ontario between 1901 and 1911 aggregated 373,567, and a large portion of this has undoubtedly been due to the forced settlement of land that could not be

put to economic use. The results were not only economic loss, but physical and moral deterioration of the worst kind. Under such circumstances the rural districts, instead of being the recuperating places for the city population to renew its energy and strength, became less healthy than the cities themselves.

SURVEYOR AS A PLANNER.

Under present conditions the surveyor does not plan the land, he merely measures it. The time has come when he should prepare adequate topographical surveys and plan it for the purpose of securing its fullest economic use, even if that meant greatly increasing the personnel of the profession.

A rectangular survey was excellent for the purpose of measurement, and is the basis for a proper development plan, but it was not in itself a development plan. Radial plans would be no better. What was wanted was to superimpose upon the rectangular plan a thorough study of topography and classification of land, and to succeed these with a plan of development. Mr. Adams alluded to the failure of Socialistic communities in connection with land settlement, and argued for the creation of agricultural and industrial communities without the Socialistic features that had destroyed most of the communal schemes.

Just as the surveyor's plan was at the basis of the plan of the rural district, so it laid the foundation for the plan of the city. If it was begun wrong it never could be put right, except at prohibitive cost. That is why the work of the surveyor was so important.

In regard to land classification, a beginning had been made in New Brunswick, but the importance of obtaining an accurate division of the land of the country into different classes for different uses had not been realised.

THE EFFECTIVE PRESERVATION OF WOOD.

The extraordinarily high prices ruling for all classes of timber sharpens the interest in any means of prolonging the life of such supplies as are available. From time immemorial methods have been sought for guarding against the ravages of the atmosphere and also from the diseases to which wood is prone, such as dry rot, worms, etc., and disappointed users are only too familiar with the shortcomings of the majority of preparations offered for this purpose.

A preparation called "Sylvadura" has, however, recently been placed on the market by Messrs. William Maclean, Sons, and Co., of London, which appears to be not only efficient, but free from most of the objections urged against similar preparations.

For instance, it contains no acid which will injure steel or destroy the elasticity of the wood to which it is applied; neither will it injure the worker or his brushes. Furthermore, it is free from objectionable smell.

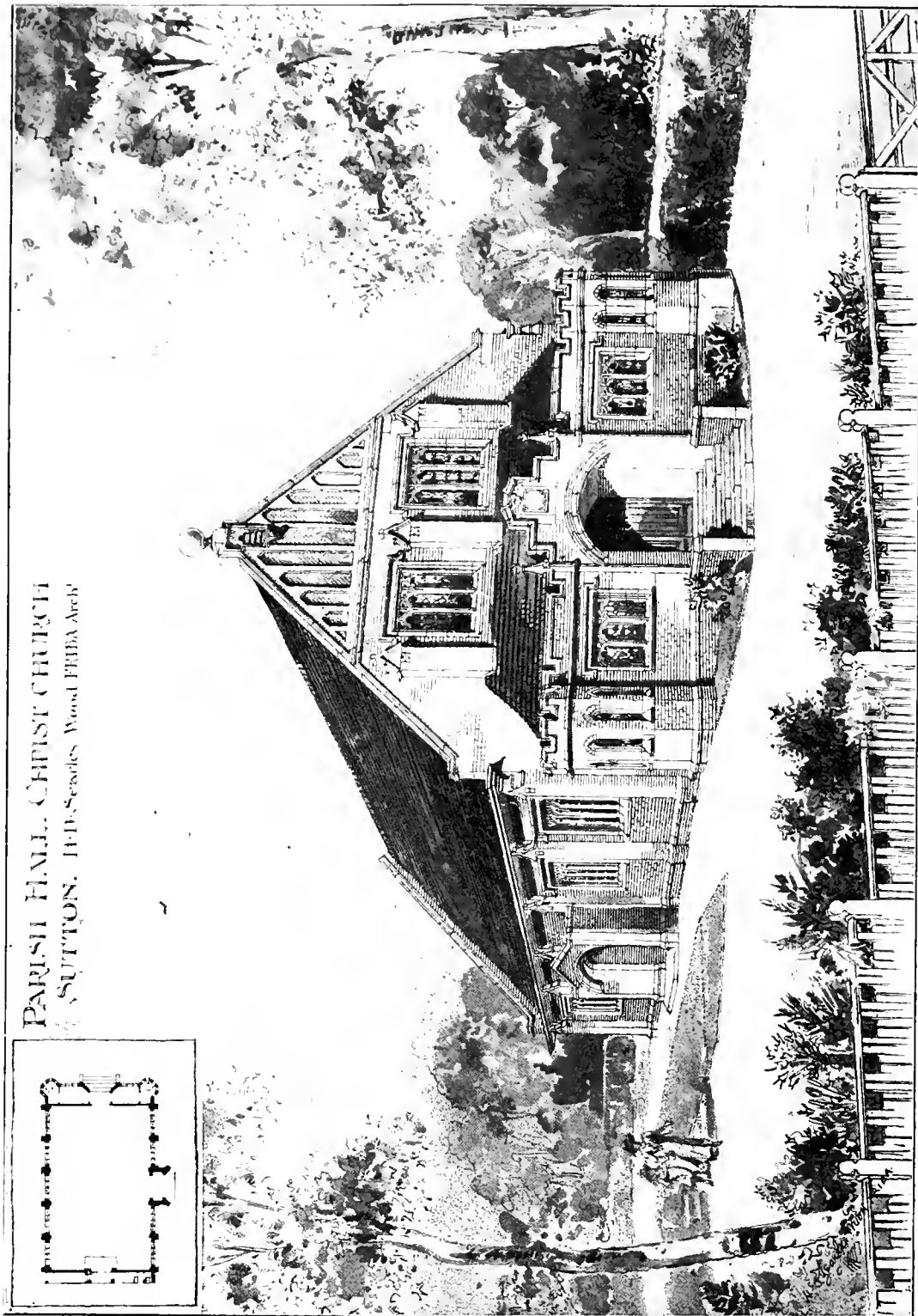
Two coats of "Sylvadura" have been shown to destroy absolutely all germs and to preserve the wood from atmospheric influences. Owing to its exceptional penetrating powers "Sylvadura" proves of quite extraordinary value in cases where dry rot has just set in, though it is of course preferable to apply the preparation to the timber before using, and thus prevent the trouble. "Sylvadura" works easily and evenly without heating, and will be found extremely economical as a finish for all exposed woodwork, two coats costing only half as much as oil painting. The manufacturers offer to submit sample lots with quotations, and we strongly recommend our readers to take advantage of this offer.

Mr. C. W. Parkes Lees, architect and surveyor, of Fovey, Cornwall, has been appointed architect to the Liskeard Rural District Council housing scheme (Southern district).

Witton Park, in Durham, not far from Bishop Auckland, now fallen on evil days, was fifty years ago a flourishing town. Now it is a deserted village, where streets of houses once occupied by puddlers earning their £1 a day have recently been sold for £5 each, including the freehold!

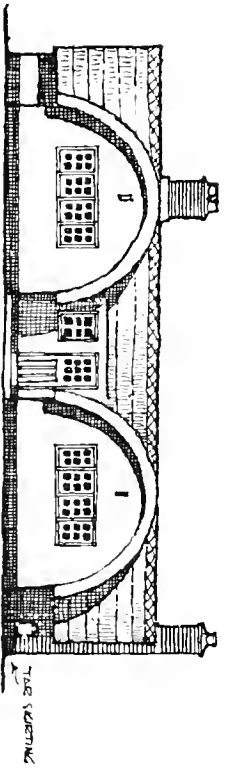
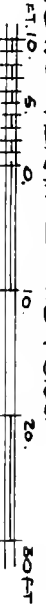
THE BUILDING NEWS, JUNE 4, 1919.

PARISH HALL, CHRIST CHURCH
SUTTON. H.D. Searles Wood, F.R.B.A. Archt.

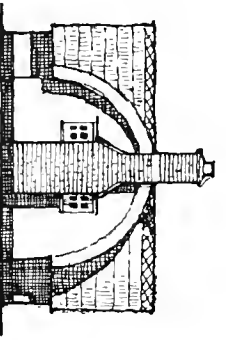


CHRIST CHURCH PARISH HALL, SUTTON, SURREY, THE GIFT OF SIR RALPH FORSTER, BART.
Mr. HERBERT D. SEARLES WOOD, F.R.I.B.A., Architect.

"MAURICE ADAMS" CONSTRUCTION. PATENT APPLIED FOR.
STANDARD BUNGALOW No 1.

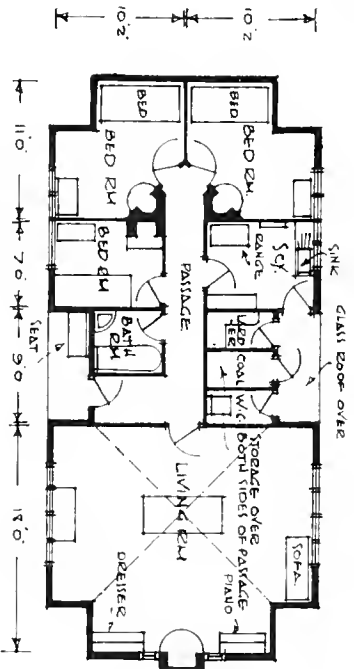


FRONT ELEVATION.

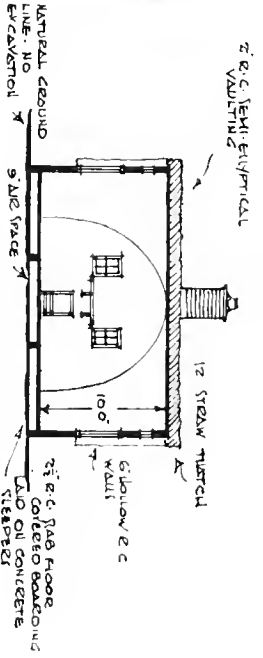


END ELEVATION.

NOTE.
COIT FROM £550
TILE ROOF 2.4 WERT.
ROOFT COVERED TILATH
TILES OR SLATS.
FLOOR: BOARDED OR
LINO.



PLAN.

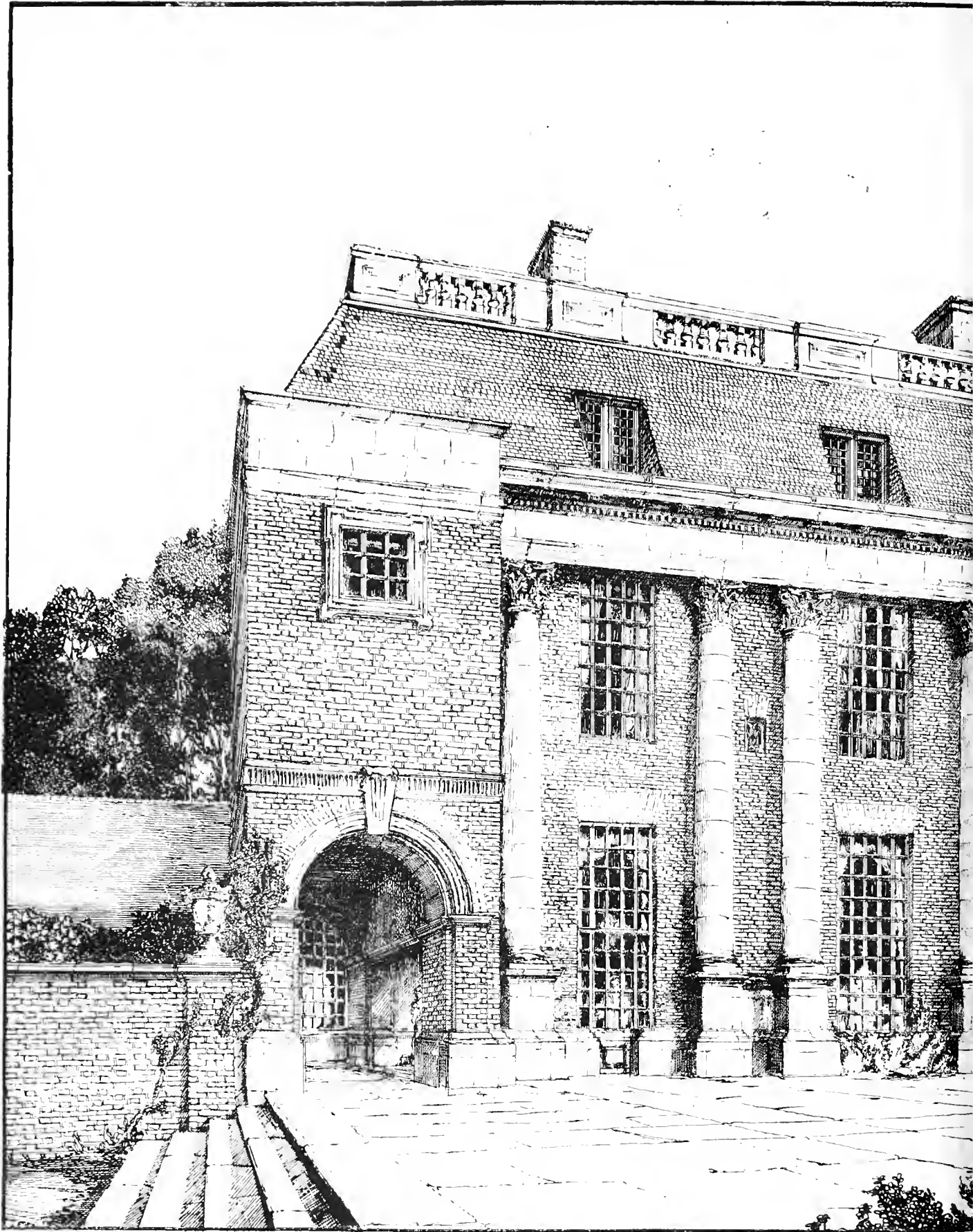


SECTION A B.

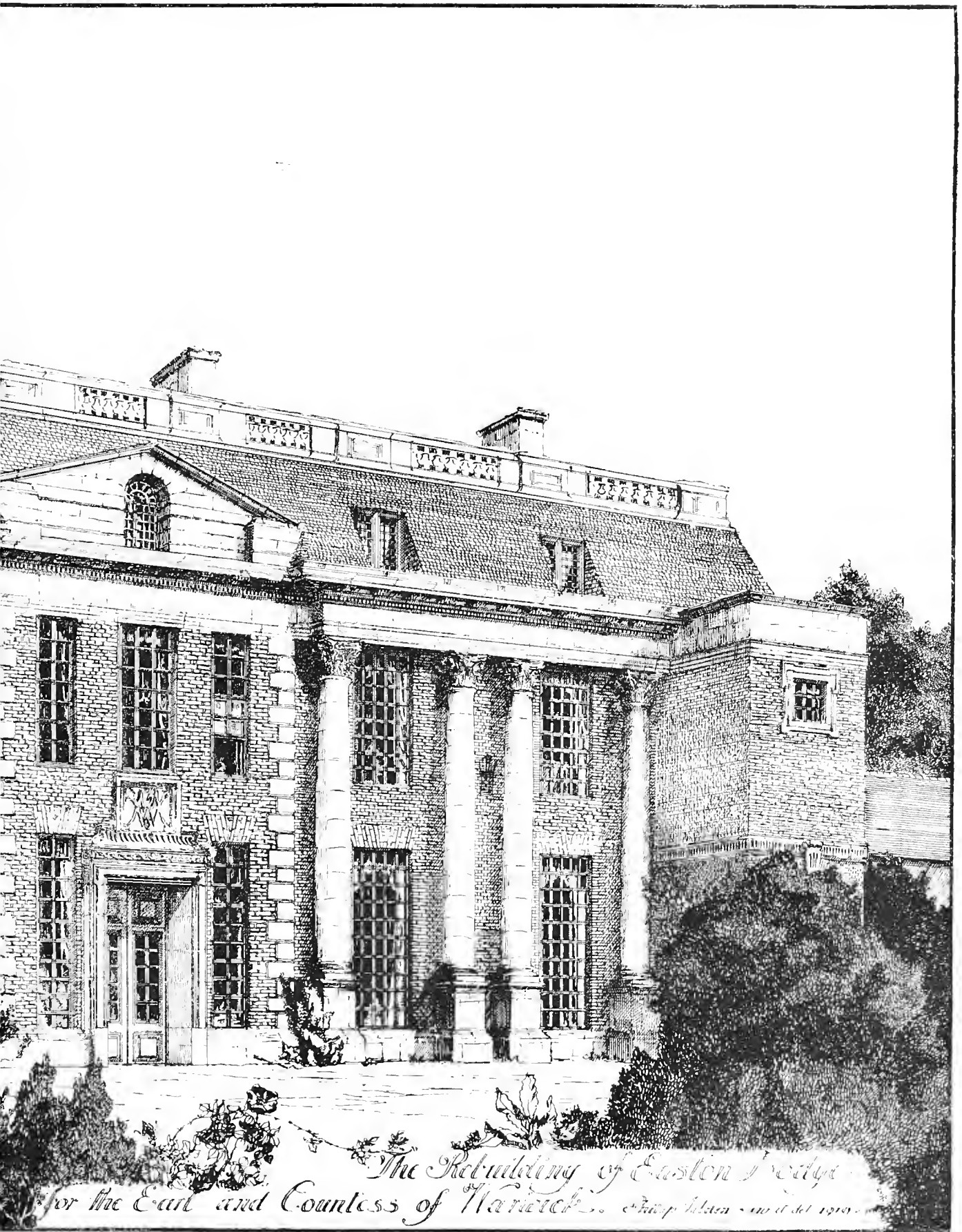
ONE OF THE THREE HUNDRED AND FIFTY POUNDS BUNGALOWS PROPOSED TO BE BUILT IN ESSEX.

MAURICE S. R. ADAMS A.R.C.B.A.
ARCHITECT
1, WATBOURGH GENECEIT, BEDFORD PK. W4



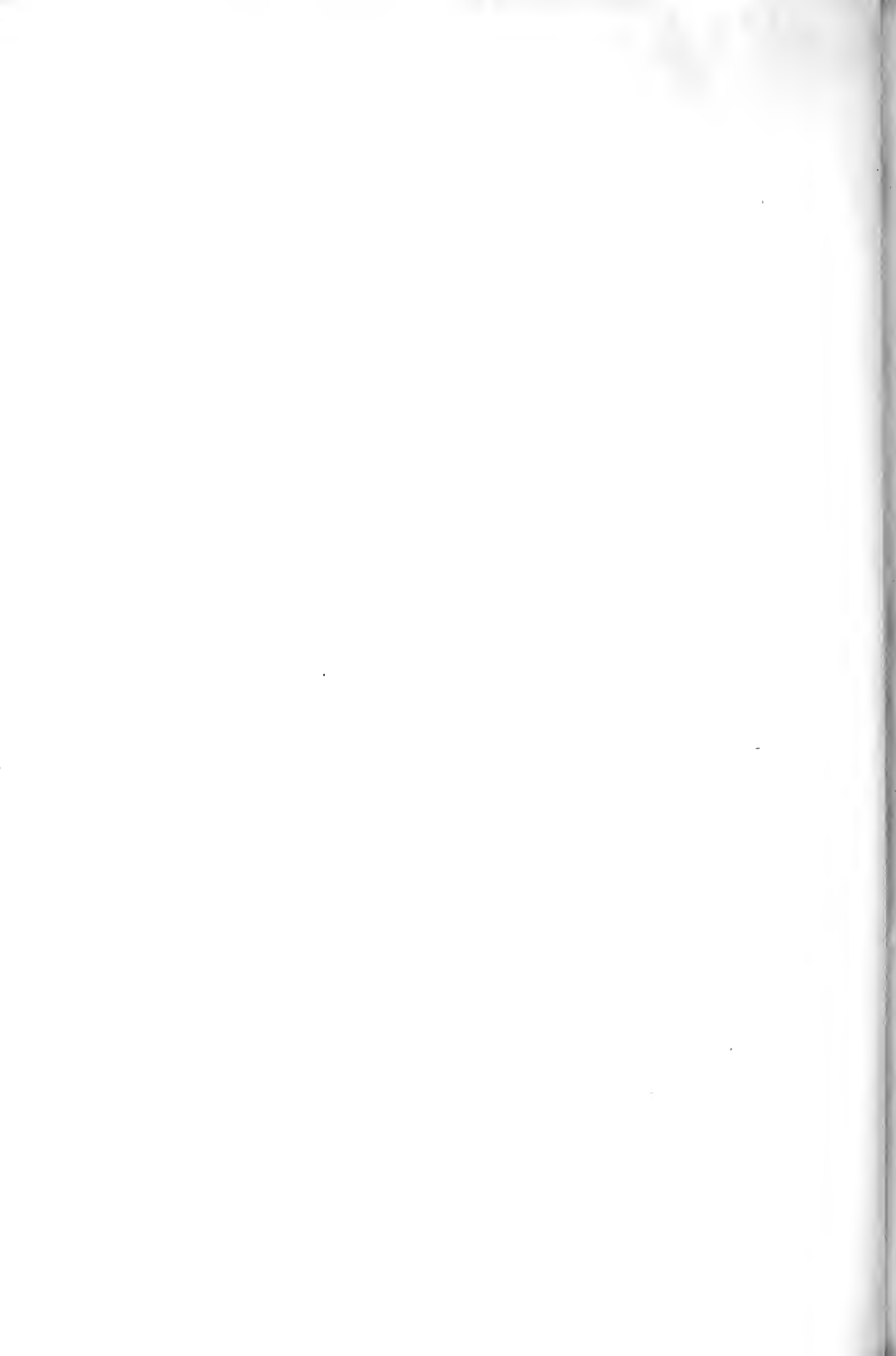


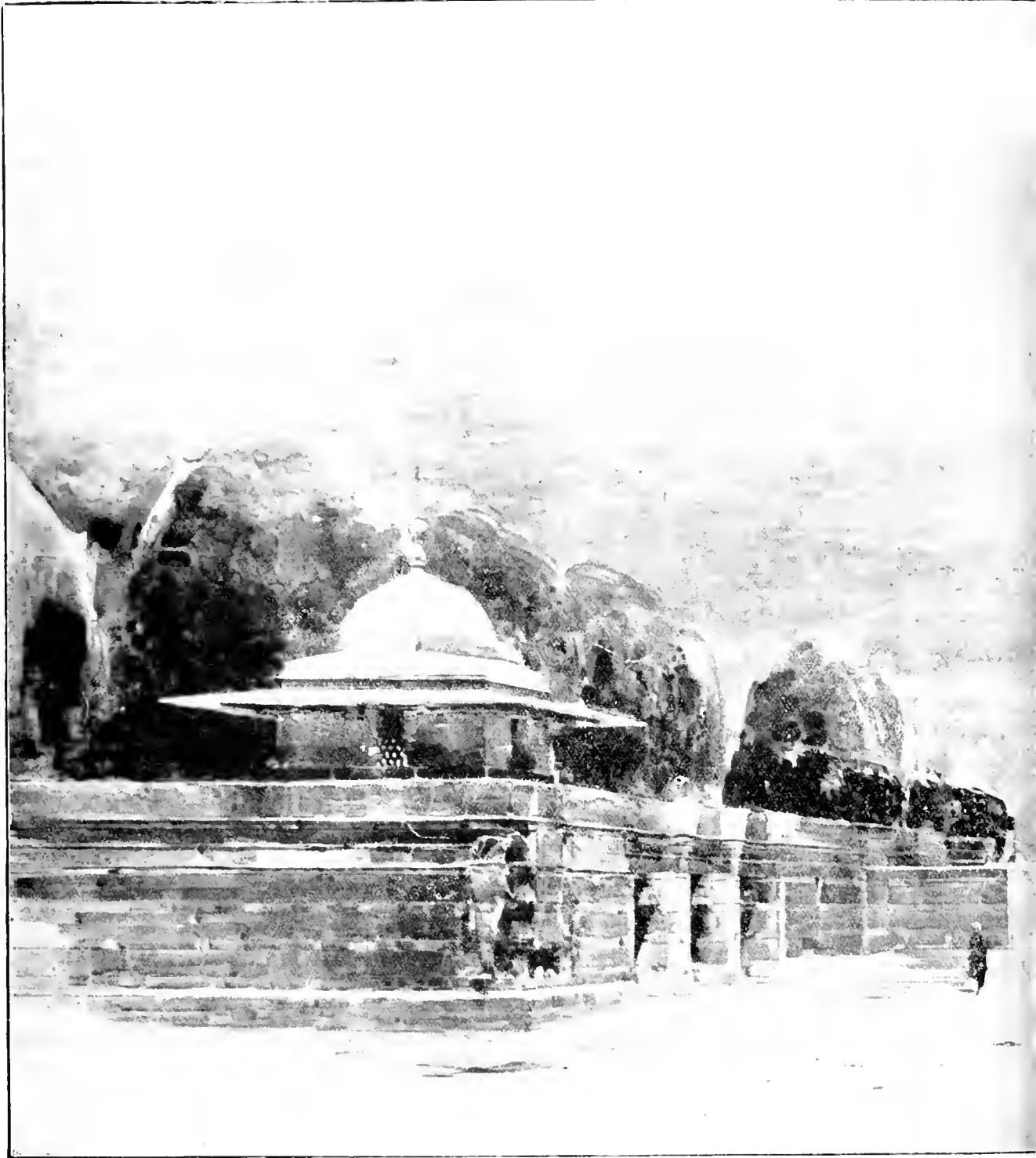
EASTON LODGE, DUNMOW, ESSEX, THE SEAT
REBUILDING 1919.—Mr.



*The Rebuilding of Easton Lodge
for the Earl and Countess of Warwick. Philip Tilden - 1919.*

THE EARL AND COUNTESS OF WARWICK.
PHILIP TILDEN, Architect.





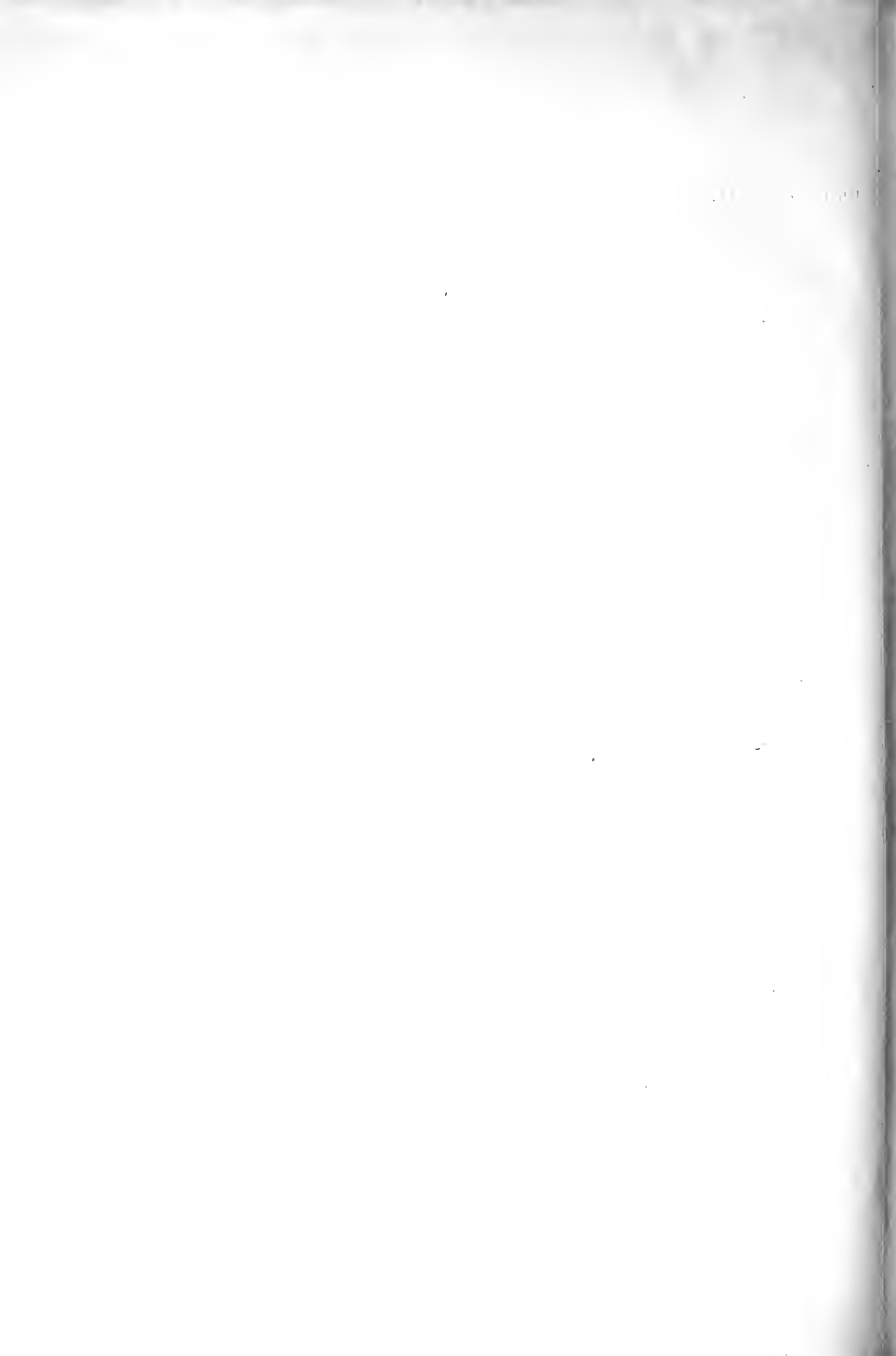
W. Walcott, Delt.]

GUARD-HOUSES AND COMMEMORATION COLUMN (VIC
Sir EDWIN L. LUTYENS)

JUNE 4, 1919.



'S COURT), GOVERNMENT HOUSE, IMPERIAL DELHI.
A.R.A., Architect.



THE TRAINING OF THE FRENCH ARCHITECTURAL STUDENT AT THE ECOLE DES BEAUX ARTS.

By MR. ARTHUR DAVIS, F.R.I.B.A.

(Continued from page 343.)

However, it cannot be emphasised too much that the assessors make a point of invariably rewarding the man whose parti, or original, conception is the best solution of the general problem, and that they rarely allow themselves to be influenced by mere meretricious cleverness or effective draughtsmanship. Many grave errors in the finished design will be excused if, in their opinion, the broad ideas which underlie its conception are based on logical and sound reasoning.

When the two-monthly designs are exhibited a copy of the original twelve-hour esquisse is pinned to the finished set of drawings. This esquisse was, and still remains, the keynote of the whole conception. The student in developing the esquisse is permitted to alter the proportions and detail of his sketch and to add features which may have been omitted, but the main lines of his original idea must be maintained, and if, in the opinion of the jury, the competitor has not adhered in the broad sense to his original conception, he is disqualified, or placed *hors concours*. Unfinished drawings or indefinite esquisse also provoke this disqualification.

Another disadvantage of the Beaux Arts system, for which it is in no way responsible, is the length of time required to complete the entire course. Although the students rarely finish their training much before they are thirty years of age, it must be remembered the requirements of the Military Service Act interfere with their studies for a period which has varied in the past from one to three years. Efforts have been made to release promising students who have acquired high honours by lessening their period of military service, but their work has to be interrupted for at least one year, and sometimes for longer, with results which are easy to realise.

The Parisian ateliers have been the subject of so much interest, and have been dealt with so often by authors whose descriptive talents are greater than my own, that I do not think it necessary to give a detailed account of their internal appearance or the daily routine of their members.

Many laymen desiring to obtain a glimpse of Bohemian life endeavour to gain admittance to these interesting art centres, but the students are not eager to welcome the stranger within their gates, and the adventurous spirit who would force an entrance without proper introduction usually regrets his rashness; some apparently innocent but subtle practical joke is sure to be played upon him, and even old members who return to their former haunts enter with a certain measure of apprehension.

For the week preceding the conclusion of any important competition, the ateliers are crowded to suffocation. Each competitor, surrounded by his staff of voluntary assistants, is to be found working at the highest pressure, and for the last forty-eight hours he remains glued to his drawing-board with only short intervals to snatch a hasty meal. As time goes on the atmosphere becomes more and more electric. Every outside consideration is cast aside, and astonishing results are obtained by the speeding-up process which now takes place. During this strenuous period the patron does not appear, as he realises that his advice is no longer required. The men whose designs are behindhand send out whips to rope in every available source of assistance. A squad of *nouveaux*, marshalled by their corporal, are already preparing the stretchers on which the designs will be mounted. The concentration is such that nothing short of an earthquake would cause a diversion from the all-important object of satisfactorily completing the work in hand. When morning dawns, haggard and unshaven men are feverishly putting the finishing touches to their drawings. As the time for sending in approaches, the scene presents an aspect of violent hurry and apparent confusion. The designs are hastily cut off their boards, mounted on stretchers, framed, and bundled into handcarts by impatient *nouveaux*, and at the last moment these heavily-laden vehicles are rushed at a

break-neck speed to the Ecole entrance in the Rue Buonaparte.

The excited crowd of students, whose nerves have been worked up to concert pitch, knowing that the end of their temporary struggle is at hand, now give vent to their overwrought feelings, and as the tumultuous crowd, clad in overalls, clatter along, many of the inhabitants of the streets through which they pass leave their occupations to come out on their doorsteps and exchange friendly banter with the noisy procession.

Just as a true sportsman is universally popular in England, so the Parisian artist is a general favourite in France. All scholars are popular in the Latin Quarter, but the Beaux Arts student holds first place in the public affection. Many of the residents in the neighbourhood of the school have had much to suffer from the exuberant spirits of these young irresponsibles; but they remember also many charitable acts of kindness and the generous response the students make to every appeal to their better feelings. Hence these cavalcades are a welcome feature in the crowded streets of the Latin Quarter, and even the stern policeman has been known to look away and wink at the wild escapades, which would be severely punished coming from any less popular body of men.

As the carts with their precious cargo reach the school courtyard the scene becomes, if possible, even more boisterous. The rival candidates shout their particular atelier yells and hurl insults and defiance at each other in the most approved traditional manner. The contents of the carts are unloaded in the forecourt, the designs are officially stamped by the guardians, and the exhausted competitors are at last free to seek refreshment and repose, of which they are so much in need.

There are in France a great many architects and architects' assistants who have gained knowledge in a similar way to those in England, by training in offices and private practice. Often they are men of ability and produce good work. Their number is increased by Beaux Arts students who for some reason or other have been compelled to interrupt their school course. These men may be successful architects, but they are placed at a certain disadvantage when competing with their Beaux Arts comrades, as in France titles and distinctions play even a larger part than in our own country.

Within the last few years there has been a tendency in England to inquire into and to study the general policy and methods which govern the Beaux Arts organisation, with a view to the introduction of some of its best features, and I, therefore, attach a summary of my information upon the subjects covered by the curriculum.

The position of this institution as a recognised Government University of the Arts gives it great superiority over similar educational bodies here, and it derives additional strength from the fact that it is conducted on sound traditional lines under an official Ministry. Having no serious rivals, the most talented men in the country are connected with it, either as patrons or students. This unanimity is bound to produce better results than those obtained by the scattered efforts of our schools of art, many of them excellent, but each working with different objects, and often in divergent directions.

In this paper I have endeavoured to describe clearly the methods and aims of the Ecole des Beaux Arts, a subject of great interest to all who sympathise with the rising generation of students, and to many architects who are desirous of knowing something of the work, organisation, and good comradeship which prevail in this world-famous school.

SUMMARY OF SUBJECTS FOR ENTRANCE EXAMINATION AND WORK IN FIRST AND SECOND CLASS FOR DIPLOMA.

ENTRANCE EXAMINATION.

The examinations are held twice a year, in June and November, and consist of the following subjects:—

- (a) An architectural composition carried out "en loge" in one sitting in twelve hours.
- Only candidates who are successful in this subject are allowed to sit for the succeeding papers:—

(b) Freehand drawing from a cast in one sitting of eight hours.

(c) Modelling of a bas-relief ornament from a cast in one sitting of eight hours.

(d) Mathematical paper "en loge," including one question in logarithms.

(e) Examination in arithmetic, algebra, plane and solid geometry, elementary trigonometry, elements and analysis of analytical geometry.

(f) A problem in descriptive geometry as applied to an architectural composition carried out "en loge" in one sitting of eight hours.

(g) Oral examination in descriptive geometry.

(h) A written and oral examination in general history.

The maximum number of candidates admitted into the School at each session is limited to forty-five French subjects and fifteen foreigners.

II.—"SECONDE CLASSE."

Students enter the School in the second class, and have to obtain the following medals and honorary mentions (known as "valeurs") before they can pass into the first class.

(1) Two "valeurs" (two "secondes mentions") on designs of elementary architectural analysis.

(2) Four "valeurs" (four "secondes mentions" or two "première mentions") on (a) the preliminary sketch designs ("esquisses") or (b) fully worked out and finished designs known as "projets rendus"; two "valeurs" must be obtained in (b).

(3) One honorary mention in descriptive geometry.

(4) One honorary mention in stereotomy.

(5) One honorary mention in statics and allied problems.

(6) One honorary mention in practical construction.

(7) One honorary mention in perspective.

(8) One honorary mention in the drawing of ornament.

(9) One honorary mention in figure drawing from the antique or life.

(10) One honorary mention in modelling.

(11) One honorary mention in the history of architecture (archæology).

All purely scientific subjects are treated in the "second class" of the School.

III.—"PREMIERE CLASSE."

To be eligible to sit for the Diploma Examination, students in the Ecole des Beaux Arts must have obtained at least the following "valeurs" in the first class of the School:—

(1) Ten "valeurs."

A "seconde mention" equals $\frac{1}{2}$ "valeur."

A "première mention" equals 1 "valeur."

A "deuxième seconde medaille" equals $\frac{1}{2}$ "valeurs."

A "première seconde medaille" equals 2 "valeurs."

A "première medaille" equals three "valeurs."

To be obtained for (a) preliminary sketch designs, or (b) fully worked out designs, but in the "first class" "secondes mentions" are only awarded for the preliminary sketch designs.

The ten values mentioned above may be obtained either for the sketch designs or the completed "projets."

(2) One "valeur" (première mention) in archæology and the history of architecture.

(3) One "valeur" (première mention) in figure drawing from the antique or "life."

(4) One "valeur" (première mention) in modelling.

Beyond this, students in either class, first or second, are expected to obtain one "mention" in chemistry and physics, and one "mention" in the legislation of building, before they can take part in the diploma examination.

IV.—THE DIPLOMA EXAMINATION.

Independently of the preceding competitions, executed in the two classes of the school, each candidate must produce a certificate stating that he has assiduously followed practical works for at least one year, under the supervision of either a Government engineer, an architect holding a State appointment, a public (works) department, a private office, or give satisfactory evidence that he has personally supervised building operations

The examination is divided into three parts—written, graphic, and oral.

The papers given in the first part consist of a thesis on some question relating to the practice of architecture. It is of two hours' duration, and carried out under the supervision of a moderator.

The graphic part of the examination consists of a design conceived and developed as a working drawing, and comprises plans, sections, and figured elevations, together with all necessary details of construction, and must be supplemented by a specification and a priced bill of quantities of some portion of the work.

The oral examination consists of questions on subjects in the above design.

The candidates may select their own subject for their designs, but are required to submit their scheme to the architects of the jury, who have the power to veto it or to require modifications in the design; they also set the scale to which drawings are to be executed. No time limit is fixed for the preparation of the drawings.

THE ARCHITECTURAL ASSOCIATION CONVERSAZIONE.

The members and friends of the Architectural Association had a very pleasant time together last Friday evening. It had been felt that it would be a good thing if an opportunity could be given for a number of people who had been away from one another in the Army, and were now being demobilised, to meet in an informal manner. Accordingly, the last evening of Mr. Henry M. Fletcher's presidency was made the occasion for him and Mrs. Fletcher to be at home at the Association's headquarters, 35, Bedford Square, London, W.C.

The rooms were extremely crowded, the proceedings were quite informal, and everyone seemed to enjoy himself (or herself) tremendously. Most of those present were in civilian costume, but there were still a considerable number of young men in uniform. Refreshments were provided and a musical programme was performed containing the following items: "Mystic Beauty," by Finck; "Raymond" Overture, by Thomas; "Bereuse," by Jarnfelt; Valse "Triste," by Sibels; Violin Duets, by Godard; the first movement of Schubert's Unfinished Symphony, "Humoreske," by Dvorak; Largo from Elgar's Serenade, and Suppé's "Poet and Peasant" overture. These pieces of music were rendered by the highly ambitious musical society conducted by Mr. Galsworthy generally, but occasionally by Mrs. Galsworthy. As is usual on such occasions, the music was for most of those present merely an accompaniment to the never-ceasing hum of talk, but there were a few people who were both architectural and musical, and these gave the performers some of the attention which their own merits and the nature of the music they performed deserved.

Among many others present in the course of the evening we noticed Mr. Maurice Webb (the President-elect of the Association) with Mrs. Maurice Webb, Mr. John W. Simpson, the President-elect of the R.I.B.A., Mr. and Mrs. Stanley Hamp, Mr. and Mrs. Austin Hall, Mr. and Mrs. Geoffrey Lucas, Mr. Robert Atkinson, Mr. Curtis Green, Mr. Ralph Knott, and Mr. Fitzroy Doll.

The Bicester U.D.C. have agreed to appoint an architect in connection with their housing scheme. It is proposed to erect 50 houses to begin with.

Sir Robert Home says: The country will seriously have to take to the whole re-organising of its labour exchanges. Compared with those of some of our Allies, our exchanges are disgraceful. The reason the exchanges have never been popular is that they had never been housed in proper premises.

The General Purposes Committee of the London County Council recommends the appointment of a Director of Housing, who "need not necessarily be an architect," at a salary of £2,000 a year, without superannuation allowance, for a limited term, at first, of two years, and that applicants for the appointment should be sought by advertisement.

RARE ELEMENTS AS PAINT PIGMENTS.

Many of the rarer elements that heretofore have had but little industrial application received much consideration during the war-time period. It is probably safe to state that many of them will be used as the base of preparation destined to become of great importance in the arts. Their possibilities as pigment bases, for instance, for several years have engaged the writer's interest. Among the more obscure or not commonly known metals that he has experimented with are molybdenum, cerium, lanthanum, selenium, thorium, titanium, tungsten, uranium, vanadium, zirconium, beryllium and radium. Nearly all of the above metals, in the form of their respective insoluble compounds, have a high refractive index and consequently produce, when ground with oil, very opaque mixtures having a hiding power comparable with lead and zinc pigments.

From the standpoint of war-time usage, radium pigments have been of the greatest interest, substantial quantities having been used for aircraft instruments and other paraphernalia of modern warfare. The radium may be applied as a salt to an active or sympathetic base having real pigment properties, such as zinc sulphide. This activated pigment is mixed with a thin, clear varnish that acts as binder. Only small amounts of radium salts are required in such paints to produce energetic vibrations that send out active radiations in the form of a soft greenish glow. These paints have almost entirely replaced the old luminous calcium sulphide paints which, although comparatively low in price, depend upon absorption of energy from sunlight. The only substitute for radium is mesothorium, an element found in monazite sand that is mined in certain of our Southern States. Its longevity is not as great as that of radium.

Selenium, an element analogous in some of its properties to sulphur, which is obtained during the smelting and refining of copper, has had but little industrial application. The writer has prepared several most interesting pigments from it (the selenites of lead and borium, for instance) which are very white and of fine grain. Their exceptionally high refractive index gives them intense opacity. Other pigments of a closely related nature may be produced from beryllium, an element found as a silicate or aluminate in several Eastern States. The oxide and similar products of zirconium have a very high degree of whiteness, opacity and permanence. From titanium, an element which is widely distributed, many most interesting compounds have been produced, and it is highly probable that some day they will be used to a great extent as pigments where great opacity, permanence and other closely related physical properties are desired. Among the more common elements from which white pigments may be made are arsenic, antimony, bismuth and tin. The toxic nature of some of these compounds and their high price as compared with lead and zinc pigments have limited or prevented their use.

METAL POWDERS AS PIGMENTS.

Finely divided metal powders have specific uses as pigments. Zinc powder (zinc dust), for instance, has been employed to some extent as a pigment, and for many years has formed a substantial part of the anti-fouling and anti-corrosive ships' bottoms paints used by the Navy Department; for instance, a paint made of finely divided zinc powder suspended in a heavy-bodied drying oil, a spar varnish, or a lacquer could be used as a "liquid galvanising." Great fineness of the zinc powder is the chief requisite, and the paint should contain at least 90 per cent. of metallic zinc of such fineness that 96 per cent. shall pass through a 300-mesh screen. When applied to a bare iron surface there would be a waterproof film containing a metal that would protect the iron from corrosion. Aluminium, lead, copper, iron and other metals in powdered form have found special applications as surface coatings.

When metal powders are employed as primer paints, those metals should preferably be used that have a higher solution tension than that to which it is applied. If

two metals are placed in contact in the presence of water a primary battery is formed, and galvanic action ensues. The electro-positive metal will go into solution and the electro-negative metal will be unacted upon. In the order of their solution tendencies, the metals commonly used are: aluminium, zinc, iron, nickel, lead, copper, tin and antimony. Any of these metals when placed in contact in the presence of water with another metal lower in the series will tend to protect the latter metal from corrosion. Zinc is the only commercially available metal of moderate price, and applicable as a coating, that is higher in the series than iron. This metal is therefore theoretically ideal to use as a protective coating on iron surface when applied in the form of galvanising. The film of zinc, even when abraded, will have a marked protective influence upon the adjacent areas of bare metal.—H. A. Gardner. (Educational Bureau, Scientific Section, Paint Manufacturers' Association of the United States, Circular No. 61, April, 1919.)

COMPETITIONS.

ARCHITECTS' BAN ON GLASGOW CORPORATION HOUSING COMPETITION.—The Council of the Glasgow Institute of Architects, considering that the conditions of the Glasgow Corporation Housing Competition are unsatisfactory, have notified members that they must refrain from competing. It is also intimated that the competition has been banned by the R.I.B.A. The architects contend that the assessors ought to be named in the conditions, and that architects ought to have had a voice in preparing the conditions of the competition. Sir John Lindsay, on behalf of the Corporation, states that the names of the assessors will be duly announced.

NEW POST OFFICE, PEKIN.—In a competition for this building, open to architects practising in China, the successful competitor was Mr. J. W. Denham, of the firm of Messrs. Denham and Rose, Architects, Shanghai.

LEGAL INTELLIGENCE.

ARCHITECT'S ACTION FOR PERSONAL INJURIES.—Mr. Sidney Masefield Fairlie, an architect, living at Everton Road, Plymouth Grove, Manchester, was the plaintiff in an action at Manchester Assizes last Thursday, before Mr. Justice Shearman, sitting without a jury, to recover damages for personal injuries from the Manchester Geographical Society. The plaintiff's case was that he was employed on Civic Survey for South-East Lancashire and worked at offices in the defendants' buildings, in St. Mary's Parsonage. On August 16 last year he went to the buildings and met the liftman in the entrance. The liftman said to him, "I will take you up, Mr. Fairlie." The liftman then went to the lift and the plaintiff followed. The gates of the lift were open, and the plaintiff, thinking the cage was there, stepped through the gates and fell about 18 feet into the basement. He was injured in the back and his left wrist was fractured. As a result of the fracture he was unable to use his wrist, as before. It had become stiff, and he was very much handicapped in the carrying on of his profession. The judge went to the defendants' buildings to examine the lift during the midday adjournment, and on his return the question of liability was argued. For the defendants it was submitted by Mr. Langdon that although the plaintiff was invited to go up in the lift, he had not exercised proper care in stepping through the doors without ascertaining that the cage was there. Counsel admitted that there was some negligence in the lift door being left open. The judge said there was more than some negligence, and found for the plaintiff, and awarded him £280, with costs.

The Eserick R.D.C. have appointed Mr. F. T. Penty to the position of architect for their housing scheme.

The resignation of Professor F. M. Simpson, who has held the Chair of Architecture at University College since 1903, and who has been head of the Joint Schools of Architecture of King's and University Colleges since their combination in 1914, takes effect at the end of the present session. Mr. A. E. Richardson, F.R.I.B.A., has been appointed to succeed him, and will take up his duties in the School of Architecture in October next.

Correspondence.

To the Editor of THE BUILDING NEWS.

Sir,—I shall be glad if you will kindly publish the enclosed copy of a letter which accompanied the requisition to the Council of the R.I.B.A. for the election of associates by ballot.

I also enclose an analysis showing the dates on which these candidates were admitted as students, from which, I think, the need for the forthcoming ballot will be evident.—Yours faithfully,

WALTER P. RYLATT.

The Crescent, Hathersage, Derbyshire,
May 27, 1919.

[COPY.]

The Secretary, R.I.B.A., 9, Conduit Street, London, W.

Sir,—We, the undersigned, have requisitioned the Council of the R.I.B.A. that the voting for the whole of the 165 candidates for election as associates, published in the current number of the Journal, and exempted from the final examination, should be by ballot of all the members of the Institute.

It is stated that the concession is based on service with H.M. Forces during the war, but it is known that, in at least one instance, this ground of exemption does not exist.

The dates of passing the intermediate examination, in the case of many of the candidates, show that there was ample time to prepare for the final examination before the outbreak of the war in 1914, or before the Military Service Acts of 1916-1918 became operative.

We feel that the exemption concession is not in the interest of the Institute or of the candidates themselves; that it will seriously detract from the value of the qualification, and constitutes a grave injustice to the class of associates, many of whom have served with H.M. Forces, and who have passed the final examination.

We are also of the opinion that the objects of the Board of Architectural Education are largely vitiated by the special regulations of March, 1918 which should now be reconsidered, and the concession discontinued.

Yours faithfully,

Fellows.—F. E. Pearce Edwards, Chas. B. Flockton, Edwd. M. Gibbs, Arnold Thornely, Hastwell Grayson, W. Williamson, W. E. Willink, Charles W. Harris, Gilbert Fraser.

Associates.—Walter P. Rylatt, J. S. Fyfe, F. Meakin, J. O. Thompson, R. G. Roberts, H. B. S. Gibbs, Stanley H. Williams, James R. Wigfull, James Grieve, Wilfred T. Garbutt, Frederick M. Hammond, J. Alfred Fletcher.

May 9, 1919.

Candidates for Election as Associates R.I.B.A. under Special (War Exemption) Regulation.

An analysis showing dates on which the candidates were admitted as students, based on the R.I.B.A. Journal for May:—

Date of admission as student.	No. of candidates.	Percentage	
1893.....	1	%	Minimum of 4 years in which to prepare for and take the final before the outbreak of war.
1900 to 1910 (incl.)	49	5	
1911 to 1913 (incl.)	65	42.5	Hardship suffered provided that preparation for the final was commenced and interrupted by the candidate joining H.M. Forces.
1914.....	20	25	
1915.....	11		
1916.....	2		
1917.....	2		
1918.....	1		
1919.....	3	No justification for exemption from final as preparation was not commenced at outbreak of war.	

May, 1919.

WALTER P. RYLATT.

Building Intelligence.

ASTON HALL.—The partial closing of Aston Hall, Birmingham, during the war has afforded the opportunity of doing some much-needed restoration under the direction of Mr. E. C. Bewlay, the architect, who, since Mr. Jethro Cossin's death, has had charge of the fabric of the building. The great hall has been improved by the removal of the old wooden windows inserted in place of the original leaded lights, probably in the first part of the last century, which have been replaced by leaded lights in keeping with the date of the building. At the same time some modern coloured glass in the upper windows was removed, and plain windows inserted. Elsewhere in the hall are other wooden casements in various stages of decay, and these eventually will give place to leaded lights. The cleansing of the oak-panelling of innumerable coats of paint has revealed panelling of singular beauty, the like of which is seldom to be found in any part of the country. The stonework of the chimney-pieces and doorways, which had similarly suffered, has been cleaned, and also the ceilings, revealing the beauty of their mouldings. In the chapel a great improvement has been effected by the opening up of two side windows previously covered with panelling, and these are now reglazed with leaded lights. The structural condition of the building is now very fair, and as a valuable specimen of the architecture of its period it deserves to be treated in a more dignified way than in the past.

GUILDFORD.—The tenders before the Guildford Town Council on May 27 were, we believe, the first received by any local authority in Surrey for any housing scheme so far sanctioned. The Guildford Corporation scheme provides for thirty-eight non-parlour houses and forty-five houses with parlours. All but two of the houses will have three bedrooms—the exceptions will have four—and all will have baths, with hot-water supply not only to the baths, but to the lavatories and sinks as well. The lowest tender for the buildings—£3,800 lower than any other for the whole of the eighty-three houses—was £68,646, from Messrs. Tarrant and Co., of Byfleet, and it was accepted. The architect's estimate for eighty-two houses was £57,909, giving an average for buildings alone of about £710 per house. Messrs. Tarrant's tender for the eighty-three houses works out at about £827 per house, an increase of £117. The total cost of the scheme on present figures stands thus:—

Cost of buildings	£68,646
Cost of land, 8 acres	1,800
Laying-out of site	4,609
Architect's fees	981
Total cost	£76,036

This gives us an average, roughly, of about £916 per house. There was some opposition at the council meeting to the acceptance of Messrs. Tarrant's tender, seeing that Messrs. Rutter and Co., a local firm, had offered to build forty-one houses for £37,713. The complete list of tenders will be found elsewhere under that heading.

A special committee of the Marylebone Borough Council have rejected the scheme brought forward by the executive for building a war memorial at an estimated cost of £10,000 in favour of some more utilitarian scheme.

It is estimated that 200 houses are required at Bakewell in the rural area. Mr. Charles Flint, of Buxton, has been appointed architect, and the council has reserved to itself the right of appointing at any time an additional architect.

At the annual meeting of the Governors of the Royal Manchester Institution, held on May 29, at the City Art Gallery, the report of the council referred with regret to the death of Mr. J. E. T. Allen. It went on to mention the Heywood prize and medal offered for the best design for a memorial tablet or panel to commemorate Manchester citizens who have fallen in the war, and said the quality of the majority of work sent in was much below that of the work submitted in connection with the prize in previous years.

Our Office Table.

Some statistics have been compiled by Mr. A. W. Shelton, F.A.I., Nottingham (Member of the Local Government Board Housing Advisory Conference by invitation of the late Viscount Rhondda), relating to the product of a penny rate and the number of new houses actually built and certified for occupation personally obtained from official sources, and now published for the first time. The schedule includes all places in the United Kingdom with a population of 50,000 or over. The publication is issued from 15, King Street, Nottingham. Out of 107 cities, boroughs, and urban districts, with a population of 50,000 or over, particulars of houses built within the two periods are given in 67 cases. Of these, 62 exhibit a decrease in 1910-15, as compared with 1905-10, the decrease in 29 instances being of 50 per cent. or over. Some outstanding decreases are those shown in the cases of Brighton, where 178 new houses were built in 1910-15, as compared with 807 in 1905-10; and Bristol, where there was a drop from 3,235 new houses in 1905-10 to 741 in 1910-15; and Newcastle, with 3,238 houses built during 1905-10, and 816 during 1910-15. The five cases of increase shown in Mr. Shelton's tables are Barrow-in-Furness, where there was a rise from 1,070 houses to 1,262; Burnley, with an increase from 1,437 to 1,721; Oldham, 1,290 to 1,519; Southend-on-Sea, 2,766 to 3,858; and Cardiff, 1,481 to 1,556.

Mr. Edwin Evans, L.C.C., presiding last week at a meeting of the Property Owners' Protection Association, held at Winchester House, Old Broad Street, estimated the cost of the maintenance of property at more than 100 per cent. above pre-war cost, and said the cost of producing property could not be less than this for a long time to come, indeed was at the moment 125 per cent. more than it used to be. The Act recently passed recognised in a small degree that landlords or property owners were unable to supply housing accommodation at the same price as in pre-war days. Speaking of the Government's housing scheme, he protested against the erection of any but working-class buildings. The first two years' working of the scheme, he predicted, would involve a loss of £100,000,000.

The Camera Club hopes, should sufficient support be forthcoming, to carry out a photographic survey of London during the present year, with the object of providing, for the benefit of future generations, a complete pictorial record of the appearance of London in 1919. Such a record should comprise, not only buildings and monuments of historical interest, but also as much as possible of ordinary sites and streets of which so little memory remains after the rebuilding that takes place with such rapidity in these days. All the prints would be of standard size and process, and would be arranged and mounted by the Camera Club, which would undertake the general organisation of the scheme. To carry it out successfully a small fund will be required to meet expenses. The Camera Club already has started the fund amongst its members, but will be glad to receive contributions from others who are interested in the scheme. A leaflet describing in detail the whole undertaking will be sent to anyone who sends a stamped addressed envelope to the Hon. Secretary, Photographic Survey of London, the Camera Club, 17, John Street, Adelphi, W.C.2.

The Chesterfield Corporation Housing Committee have received the following tenders for the erection of twenty-six houses for the working classes:—W. Maule and Co., Nottingham, £22,500; G. F. Kirk, Limited, Chesterfield, £21,645 2s. 4d.; G. Webber, Chesterfield, £21,143 18s.; R. Charlesworth, Limited, Sheffield, £24,002 12s. 3d.; G. S. Teanby and Son, Limited, Sheffield, £25,315 15s. 6d. The tender of Mr. Webber at £813 4s. 6d. per house was accepted. The houses consist of three and four bedrooms, parlour, living-room, scullery, bathroom and water-closet, and the above-named prices are exclusive of the cost of the land. The houses,

under the Government arrangement, are to be set at about 10s. per week.

Pipes made of concrete are now being used instead of wooden piles in the construction of wharves in Tasmania. A Tasmanian paper reports that the first of 600 concrete cylinders was turned out recently, the cylinders to be used to build the wharf inside the new break-water at Burnie for the accommodation of deep sea vessels. The concrete cylinders are 10 feet long by 4 feet 2 inches in diameter, the concrete being 12 inches in thickness. To produce them a steel cylinder is placed on four wheels, and driven by an electric motor, revolving at the rate of from 250 to 300 revolutions per minute, the concrete is thrown in, and the centrifugal force thus produced gets rid of the water. It takes about a quarter of an hour from the time the mold is set in motion until the concrete cylinder is ready for removal, which is then lifted to a storing place by a crane. Three 12-inch pipes can be turned out in seven minutes. The firm make down to 4-inch pipes, and the molding cylinders revolve at a much more rapid rate for the smaller work, decreasing in speed with the increase in the size of the pipe. To obtain the necessary height in constructing the wharf, the concrete cylinders will be placed on top of each other, cemented together, and secured by an 3-inch steel band on the outside at the joint. The hollow space in the cylinders will be filled with sand.

The secretary of the Royal Academy states that the following works have been purchased this year by the president and council of the Royal Academy under the terms of the Chantry Bequest: Paintings.—"Claudio and Isabella," by William Holman Hunt. "The Temple of Love," "The Passing of Venus," "King Cophetua and the Beggar Maid" (early version), "The Magic Circle" (water-colour), "The Story of Persens" (ten designs in water-colour), by Sir Edward Burne-Jones, "The Line of the Plough," by Arnesby Brown, R.A., "The Beverley Arms Kitchen," by Frederick W. Elwell. Sculpture.—"Psyche" (bronze statue), by F. Derwent Wood, A.R.A., "Androsius" (bronze mask), by W. Reid Dick.

Lord Wittenham (formerly Mr. S. D. Faber), in the House of Lords last Wednesday, asked if the portrait painter Laszlo had become a naturalised British subject when he committed certain offences against the safety of the Realm, and if so, why he was not tried for high treason instead of being interned? Viscount Devonport asked if Laszlo had not requested the Home Office to give him, by public inquiry, an opportunity of refuting the allegations against him. The Earl of Jersey (for the Government) said Laszlo was naturalised on August 29, 1914. The question of revocation of that naturalisation had been referred to the Certificates of Naturalisation Committee. It must not be taken that there was evidence on which Laszlo could have been put on trial for high treason. The internment order against Laszlo remained in force, but he had been released on parole on grounds of health. He had asked for a public inquiry. Lord Wear-dale said there was not the slightest ground for suggesting that Laszlo had been guilty of high treason. A noble lord who took advantage of his position to make a charge of that sort against a distinguished public man was doing something which was to be deplored in the interests of the dignity of the House.

According to the *Deutsche Tageszeitung*, the German building material industries have formed a syndicate. The stone and earthenware industries have formed a trade association in Berlin, in which the following industrial organisations are represented:—The German Cement Union, the Organisation of German Clay Industrialists, the German Plaster of Paris Associations, the Associations of Cement Goods Manufacturers, the Central Association of German Cement Goods and Artificial Stone Manufacturers, the German Trass Union, the Association of Lime Sandstone Factories, the Organisation of the German Stone Industry, the Union of Sand and Gravel Concerns, the Association of German Factories of Fireproof Products, and the Rhenish Pumice Stone Industry.

Lord Downham, speaking last Friday at the annual meeting of the London Municipal

Society, said he detected hardly any difference in the aims and the policy of the parties which made up the London County Council. All alike desired the same policy, particularly as regards housing, and the Government had no legitimate complaint against the Council, which was willing to spend a penny rate on its own housing scheme. The Council had, however, serious complaint against the Government, which, naked and unshamed, had torn up a valuable "scrap of paper" in relation to the Council's housing policy. If a government behaved in that way local governing bodies did not know what to do. He held that no one had any right to spend the ratepayers' money except those popularly elected by the ratepayers. He could see a vision of England being parcelled out into new areas, and it looked as if in each of those areas housing, traffic, health, and electricity commissioners, nominated by the Government, were to set up each a department with an expensive staff. He objected to the great increase in Government officials whose work should be left to the local elected authorities. They of the London Municipal Society must continue to fight for municipal government through elected representatives.

Mr. T. W. Byrne, A.R.I.B.A., has been appointed Inspector of the Irish Local Government Board under the new housing scheme. For the last twenty years Mr. Byrne has occupied the dual office of clerk and architect to the South Dublin District Council. Recently Mr. Byrne was invited by the Corporation of Dublin to design one of their most important schemes of dwellings, and more lately, when the Institute of Architects were invited by the Irish Government to nominate assessors for the architectural competition for the housing schemes, Mr. Byrne was nominated one of the three.

At the last meeting of the Northampton County Council, the chairman (Colonel Stopford Sackville) said he had a letter asking him to bring before the Council the desire expressed some time ago for the purchase of Lyveden New Building and the land surrounding it. The matter was privately mooted some years before the war, and subscriptions were invited by Mr. Gutch and others, who wanted to secure for public purposes that old building. The price asked before the war was £1,500, which was not thought to be excessive. Sir Ryland Adkins seconded. There had not been such an occasion since persons who had rights in Queen Eleanor's Cross were asked to assign them to the County Council, and steps were taken for the preservation of the monument. There was now an opportunity of preserving one of the most remarkable buildings in the country, and one of the most instructive pieces of ground that could be found anywhere. The proposition was carried.

Several applications for the building of new cinema theatres came before the Liverpool Theatrical Licensing Committee last Friday, and were opposed by various Labour organisations on the ground that building operations ought just now to be concentrated on meeting the need for dwelling-houses. On the other hand a letter was received from the Liverpool Master Builders' Association stating that if the magistrates refused applications for the building of cinema theatres they would inflict great hardship on the building trade in Liverpool, both employers and workmen. The applications were adjourned until June 16, when a special meeting of the licensing justices will be held.

Mr. Francis Wood has been appointed the new borough surveyor of Blackpool at a commencing salary of £1,000 per year. For the past sixteen years he has been borough engineer and surveyor at Fulham, and previously had experience at Liverpool, Leicester, Wakefield, and Bacup. Commenting thereon, in its issue of May 28 the *Liverpool Post* says:—"It is to be hoped that the newly-appointed borough surveyor of Blackpool will prove to have that firmness of character which will not be influenced to favour the chairman and members of his committee or the members of the Town Council, or to give orders for goods with firms in which they are interested. There have been thousands upon thousands of pounds of the

ratepayers' money spent with members of the Corporation, and in many instances where the chairman of the particular committees have been interested. Members—including chairmen and aldermen—have acted on special committees and sub-committees to secure orders or benefits for themselves. Plans of houses contrary to by-laws have been submitted by or for members of the town council and approved, and houses have been certified for tenancy when not completed according to the bye-laws, or according to conditions imposed on others who are not members of the Town Council. A Local Government inquiry into the dealings of the Blackpool Corporation with its members, chairmen of committees, and aldermen would result in interesting revelations."

The Ministry of Munitions is issuing a businesslike monthly entitled *Surplus*, which can be obtained from all booksellers and newsagents, and the first number of which appeared last Monday, giving full particulars of all Government property now for sale, including Army huts, building material, timber, machinery, etc., etc. The section dealing with huts and material should specially interest our own readers. For the huts there appears to be a brisk demand; one has been erected at Southampton, another will be set up shortly on Horse Guards Avenue, S.W., and twenty-one are in progress of re-erection throughout the kingdom. Full particulars and dates of forthcoming sales in all parts of the country fill the sixty-four pages of which *Surplus* consists, and builders and manufacturers should be on the look out for bargains. The various other sections cover ferrous metals, lands and factories, consumable stores, explosives and chemicals, horses, food, miscellaneous stores, furniture, dock and wharf equipment, medical stores, dental appliances, railway material, timber, plant and machinery, textiles and leather, woollen and cotton goods, aircraft, electrical stores, etc.

LIST OF TENDERS OPEN.

COMPETITIONS.

June 4.—For planning a building site, and designing and supervising the erection of 100 workmen's houses thereon, for the Wellington (Somerset) U.D.C. W. H. Ham, Town Clerk, Wellington, Somerset.

June 9.—The Salisbury Town Council invite competitive plans for laying out two housing sites of about 10 acres each in connection with their housing scheme. Premiums of £50, £20, and £10 are offered for the three best designs, which will be judged by a professional assessor, such designs to become the property of the Council. Competitive plans to F. Hodding, town clerk, Municipal Offices, Salisbury.

June 16.—The Beverley War Memorial Committee invite designs in competition for a war memorial, to be erected at a cost not exceeding £3,000. A professional assessor has been appointed. Further particulars of L. Huxley, The Public Library, Beverley.

BUILDINGS.

June 7.—For masonry, plastering, painting (iron-work and wood).—For the management committee of the Machynlleth Owain Glyndwr Institute. J. J. Humphreys, surveyor.

June 10.—The time for receiving tenders for the Egremond (Cumberland) housing scheme has been extended to June 10.

June 10.—Alterations to the Hide and Wool Market, Treforest.—For the directors.—Plans and specifications may be seen at the office of A. Ll. Thomas and Gomer S. Morgan, architects, 23, Gellswastad Road, Pontypridd, to whom tenders are to be sent.

June 11.—Completion of new school buildings (now partly erected) at the Grammar School at Nantwich.—Plans and specification can be seen at the offices of H. Beswick, F.R.I.B.A., county architect, Newgate Street, Chester. Tenders to R. P. Ward, Director of Education, Chester.

June 16.—For 20 houses at Yeading, Hayes, Middlesex.—For the Hayes Urban District Council. Tenders to be sent to D. C. Fidler, architect, at the Council offices, Grange Road, Hayes.

June 17.—For semi-detached cottages, for the Welwyn Rural District Council, viz., six at London Road, Welwyn, six at Woolmer Green, and eight at Station Road, Digswell. Bills of quantities, etc., from T. E. Moore, the surveyor, Mill Lane, Welwyn. Sealed tenders to P. R. Longmore, Deputy Clerk, 24, Castle Street, Hertford.

June 24.—Erection of general stores, forge, machine shop, smiths' shop and conveniences, at Faverdale, Darlington.—For the North-Eastern Railway Co.—Plans and specifications may be seen, and quantities obtained upon application to A. Pollard, the company's architect, York. Tenders to R. F. Dunnell, secretary, York.

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Strand, W.C.2

"Old Walls," a Country House at Camberley, Surrey. Two views. Mr. H. Reginald Poulter, Architect.

A Reinforced Concrete Chemical Factory proposed to be erected in Staffordshire. Two interior views, external birdseye from the model and a ground plan. Mr. Maurice S. R. Adams, A.R.I.B.A., Architect.

Currente Calamo.

Few people perhaps realise how easily, especially in our smaller towns, the whole social public hangs so closely together that one trade or profession cannot be thrown out of gear without all feeling the ill-effects. In a very informative paper in the June *Land Union Journal*, Mr. M. Montgomery-Campbell emphasises this fact very effectively. As he points out, surveyors, lawyers, auctioneers would all suffer by the building trade being controlled in small towns, and where a builder wanted a licence, the door might be opened to abuse, and possibly to corruption. It would not necessarily be always the most disinterested men, but also such as sought their own advantage, who might seek election on the local boards. A well-known London estate developer has kindly supplied Mr. Montgomery-Campbell with the following information. At Ealing, on various roads on the West Elms, the Loveday, and the Drayton estates, about 26,000 small houses have been built during the last 15 years by from 15 to 20 private builders. About 80 per cent. of the occupants are working-class owners, who have now completed the payments for their houses, of which they are now the absolute possessors, free from any encumbrance. The total of independent ownership is swelled year by year, and it is a benefit, not only to the individual, but to the nation. A very large number of houses of a similar class were built during the same period, on the Merton Park Estate, and with like results. Also about two thousand houses have been erected at Wimbledon Park and Southfields, which are a credit to all concerned, and, though they are all working-class houses, there is not a single broken window to be seen. This gentleman states that his firm spent £10,000 a week in building till the Budget of 1909-10 caused a drop of £7,000 in their expenditure. Jerry-building, he says, has been practically exploded for the last quarter of a century. The inspection of houses is very strict, and if any unsatisfactorily built houses are passed, it is the fault of the local authorities. And these are the "difficulties of administration," which render the same facilities as are to be given to local bodies and public utility societies "impracticable" in the case of the private builder who has amply

demonstrated his ability to meet all wants according to the Local Government Board.

A correspondent of the *Liverpool Daily Post*, who blames the Government for it, says in its issue of the 4th inst. that an investigation of conditions in the brickworks of East Denbighshire, which have a capacity of more than 4,000,000 bricks per month, and a present output of, roughly, one-third of this total, has enabled him to furnish some interesting facts upon what has been regarded here for some time past as a mystery. Owing either to neglect or expediency, the Ministry of Munitions has hitherto retained possession for storage purposes of four big brickyards, in which as a consequence not a single brick can be made. One of these yards, however, is closed permanently, the clay having been worked out; but as regards the other three, immediately the high explosives are removed the firms concerned will be able to resume production. Elsewhere there is a serious shortage of railway waggons, which is limiting output, while in other places it is complained that insufficient supplies of coal are restricting manufacture. Meanwhile there is enough labour awaiting employment here to enable every brickyard to go full speed ahead. At the present time, through somebody's ineptitude, the men cannot be taken on, and they are costing the country a lot of money in out-of-work pay. In East Denbighshire the erection of 3,000 houses is contemplated, including 600 in the Wrexham Garden Village. The other 2,400 are to be built by either the Wrexham Town Council or the Wrexham Rural District Council, which between them anticipate an expenditure of £920,000 on housing, £52,000 on sewerage works, and £6,000 on hospitals. In addition, the Denbighshire County Council are going to spend £25,000 on schools, the Corporation of Denbigh £13,000 on housing, Abergyle £16,000 on housing, £5,000 on roads, and £6,000 on a light railway. Unless somebody gets a hustle on in the provision of bricks, all these works are obviously going to be held up.

At a dinner given to the Technical Press on the 3rd instant, at the Adelaide Rooms, King William Street, W.C., Mr. G. H. Roberts, M.P., the President of the Industrial League, who was in the chair, said

the country had arrived at the cross-roads, the choice between harmony and conflict. Conflict, he said, meant loss and disaster. If the working classes were well advised they would increase their output, and he hoped employers would impress that fact into the minds of the workers. The Whitley report would, he thought, prove the salvation of the country. It was due to the working classes that they should be brought down from the clouds to actualities, and he advocated the principle of co-operation as embodied in the tenets of the Industrial League and the Whitley report. Every word Mr. Roberts uttered was true as gospel, but we cannot say that, as yet, employers have had much success in their endeavours to bring home the truth to their workers. As we said on this page last week, the ca' canny policy of the trade unions is visibly more and more rampant with each rise of wages. Not merely in self-defence, therefore, but in honest endeavour to convince the workers that they are biting off their own noses to be revenged on their faces, every employer of labour should join the Industrial League, and those who can afford it should emulate the patriotic liberality of Col. Sir William Dupree, the many times Mayor of Portsmouth, who sent the League £20,000 last January to help it in the work it began—that of bringing employer and employed together in an atmosphere conducive to calm discussion of industrial problems, which, we suppose, no man worth the name supposes are to be solved by bombs or other violent recommendations of some who pose as labour leaders, but who are simply advertising themselves with a view to their own benefit. The League has the benefit of the co-operation of most of the real labour leaders, such as George Barnes, G. J. Wardle, W. A. Appleton, and others, whose patriotism has been as evident throughout the war as their fidelity to the trade organisations with which they have been identified. With their co-operation we can perhaps do much for peace and goodwill and extinguish the firebrands who want lasting industrial war, careless who starves as its result. The subscription to the League is a small one, and at its offices, 66, Victoria Street, S.W.1, inquirers may obtain all desired information, and will be favourably impressed with the courtesy and evident devotion to the task, which needs every recruit, of its officers.

A landlord who was recently fined for allowing water to waste, by neglecting to repair a cistern valve, excused himself on the ground that house property owners could not afford repairs owing to the enormous cost. The moral of this is that every encouragement should be given to tenants to become the owners of their houses. They will then, for their own sakes, do those repairs which, if neglected, lead to increased expenditure in the end. This "taking in time" of minor defects would effect a saving which, if it only amounted to £1 per house per annum, would economise national expenditure to the extent of many millions of pounds. Two years ago a proposal was made by Mr. Percy B. Tubbs, a Past President of the Society of Architects, for the establishment, with State support, of a Central Public Utility Society, with subsidiary district bodies, to undertake the national housing requirements. It is not too late, even now, for such bodies to be formed in any districts by the workers themselves, with a view to their becoming the owners of the houses they are to build and occupy. The merit of the scheme lies in the fact that, by giving the worker a share in the solution of the housing problem, and at the same time enabling him to own the house which he has helped to create, he gets a sense of his responsibilities as a citizen, and the knowledge that he has some definite interests and a stake in the district and country, would go far to mitigate the industrial unrest, which is very largely due to bad housing conditions and the shortage of better accommodation.

Beneficial results should follow from the conference under the auspices of the Royal Institute of Public Health, to be held at the Mansion House and Guildhall from the 25th to the 28th inst. It will be devoted to a consideration of problems of reconstruction in relation to public health, and it will discuss the work of the newly-created Ministry of Health, the prevention and arrest of avoidable disease, housing in relation to national health, maternity and child welfare, and the tuberculosis problem under after-war conditions. Of the various sessions far from the least important will be that devoted, under Sir Aston Webb's presidency, to the problem of housing in relation to national health. In this the medical, the architectural, and the citizens' aspect of the question will be dealt with, and an introductory address given by Mr. Neville Chamberlain.

The Stoke-on-Trent Corporation has resolved to apply for sanction to borrow £10,000 for a cooling house, offices, etc., at the abattoirs. Application will also be made for sanction to borrow £6,300 to construct a fire station at Hanley.

The Cheshire County Committee appointed to consider the proposed county war memorial, having regard to the fact that so many parishes, villages, and towns were having their own local memorials, have decided that it would not be expedient to promote a county war memorial.

The opposition developed to the proposal of the City Council of Nottingham to spend £20,000 on a piece of statuary in the Market Place as a memorial of the war has increased in strength lately, and at last week's meeting of the council it was decided to refer the subject to the General Purposes Committee.

THE NEW ENGLISH ART CLUB.

Unable to secure a gallery large enough for its usual exhibition, the New English Art Club has opened a small one of water-colours and drawings at 23A, Maddox Street. It includes a fair percentage of very good things, but some are there we should hardly have expected to see accepted by a club which has been understood to emphasise the importance of the acquisition of the faculty for good drawing, and the mistake of its neglect by many modern painters.

Mr. William Shackleton is well represented by "Skating in Kensington Gardens" (3) "The Earthly Paradise" (42), and a "Study of Man and Bird" (67). The Imperial War Museum has lent three of Mr. Francis Dodd's naval drawings of the crews and engine-room of warships and submarines (4, 12, and 117), and he also shows a "Portrait" (31). Mr. W. G. de Glehn has a good drawing of "The Palace, Versailles" (18), and another of "Notre Dame—Morning" (177). Mr. Henry Rushbury is at his best, perhaps, in "Fireside" (32); of his other three, "Showmen's Vans" (94) and "Easter Sunday, Hampstead" (98), will probably command most attention. Mr. F. Caley Robinson's only contribution, "The Fall of Sodom" (59) is a well-rendered work. Professor F. Brown's three works are all excellent. "The Old Sheds, Harwich" (93), a "Wheelwright's Yard" (164), and "Waiting for Repairs" (170) are as successful investitures of common things with beauty as could be desired. Mr. A. W. Rich sends three nice landscapes, "Near Hurstpierpoint" (88) an "Old Garden, Ratten, Sussex" (97), and "The South Downs" (101), and a pretty oil, "Near St. Ives" (160). Mr. P. Wilson Steer shows two of the best sea-pieces he has given us, "Dover Castle" (73) and "Dover Harbour" (89). These alone will repay a visit to the exhibition. Hardly less attractive are Mr. David Muirhead's subjects and his treatment thereof. "The River Ouse" (72) is a pretty, peaceful river scene. "After Rain" (76) well typifies the freshness and renewed vigour of vegetation after drought such as hindered growth and smothered us with dust lately. "Evening" (92) recalls the balm and quiet after the day's heat and exhaustion, which we have missed since "summer time" added a useless and unwelcome hour to the garish day. "The Fen Farm" (171) is a beautiful picture of many a centre of rural industry won from the wasteful bogs. Mr. Muirhead Bone, thanks, again, to the Imperial War Museum, is enabled to gratify us with his "Grand Fleet at Rosyth" (156), and other naval incidents, "Off Havre: Waiting for the Pilot" (113), "On a Salvage Ship: Repairing the Cables" (127), and "Building a Cross-Channel Ferry at Fairfield, Glasgow" (166).

Sir William Orpen's two drawings are veritably the gems of the exhibition. "Rest by the Road: La Boisselle" (63) is a perhaps fanciful, but assuredly pathetic, picture of a weary, tattered soldier; and "Blown Up: War" (81) brings home in all its horror but with wholesome emphasis the nature of the dire conflict we are emerging from. Mr. W. P. Roberts, perhaps less satisfactorily, but still forcibly, forces on our contemplation the same theme in his "Burying the Dead After a Battle" (139), and "Add Fifty, Sweep 30 Minutes: British Field Battery in Action" (165). Mr. Charles Ginner is, perhaps, at his best in "A Garden in Bloomsbury" (78), and next in his picturesque "Group of Cottages, Chinnor" (162). Mr. C. J. Holmes' "Gray Morning, Craven" (71) is good, and also

his "Farm at Keighley" (75). Mr. Ian Strang gives us two more scenes of the ruin of war, "Zilleboke Church" (70) and "Kemmel" (148), both fine pictures, and full of real appreciation of the wanton wickedness of the scenes depicted. Miss Hilda Watkinson's "Village Concert" (100) is capitally characteristic of such rural performances, and she admirably lifts off the humours of the crowd on "Armistice Day" (184). There is more than promise of good work about Miss Ellen D. Nicholson's "Tea Garden" (161), if a little restraint is acquired.

Our Illustrations.

PROPOSED REMODELLING OF PADDINGTON STATION, G.W. RAILWAY.

This drawing represents to a certain suggestive extent the architect's ideas with regard to the possibilities of the above remodelling. The conversion of the covered yard between the hotel and platforms into a magnificent concourse, booking hall, and waiting room leading passengers directly to the ends of the platforms as at Waterloo and other stations, would greatly facilitate the economic working of the station; at the same time, the existing booking office block and entrance low-level roadway could be converted into parcels offices and milk line, away from passenger traffic. Extra accommodation is provided above the great archways shown in the drawing, and a covered roadway, level with the street, would run at the back of the hotel depositing passengers at the top of the shallow stairs and the luggage at the top of two luggage escalators. The drawing reproduced is exhibited this year in the Royal Academy by Mr. Philip Tilden, architect.

"OLD WALLS," CAMBERLEY, SURREY.

This house is shortly to be erected at Camberley, on the France Hill Estate, on a site enclosed by an old brick wall, for which area the building has been planned. It was originally intended to build the house in 2-in. bricks to match the wall, as shown by the view of the south front, but owing to the difficulty in obtaining suitable bricks of this character, an alternative scheme has been got out in local rubble, with concrete dressings and windows. The roof is to be covered with old local tiles. The main rooms face south, overlooking a formal garden, and the entrance, facing north, opens direct on to the roadway. The internal joinery will be oak, and the walls finished white. The architect is Mr. H. Reginald Poulter, of Camberley, the view illustrated being hung at the Royal Academy Exhibition.

A REINFORCED CONCRETE FACTORY PROPOSED FOR ERECTION IN STAFFORDSHIRE.

The need for up-to-date new factories increases as the possibilities of renewed enterprises are gradually developing. Property agents' offices everywhere display notices that such premises are in demand. Current prices for labour and building materials have caused projects for erecting buildings for commercial purposes to be postponed, and not a few have been actually turned down entirely. This happened lately in a case near Liverpool, where, on the eve of the war, the contract price for a factory stood at about £14,000, but hostilities stopped the job. Since the armistice the same plans were put out to tender, the result being

£40,000, so the undertaking was abandoned. The plan and views herewith illustrated show a perfectly new system intended to cope with such financial difficulties and to insure an improved form of factory design by the adoption of an economical use of reinforced concrete scientifically and architecturally handled. The site is in Staffordshire. The principle is elliptical, on the egg-like or parabolic curve, requiring no ties and very little abutment. Every cubic foot of enclosed space is utilised, with no roof voids, no timber trusses as ledges for dust, and no lodgments for microbes. The whole interior surface of the factory can be flushed out by a fire hose and readily sterilised, if necessary. Thus an ideal hygienic workshop is made possible. Only six posts in a lofty building 120 ft. long by 90 ft. wide, without big and deep heavy girders, is no ordinary achievement. The material employed is reduced to a minimum, and yet rigidity and strength are greatly increased. Reduction of wind pressure outside is likewise a considerable gain, while a factory of more than one storey can be satisfactorily built, the elliptical vaulting serving as strong flooring for the upper stages without horizontal beams commonly employed. Extensions on plan are available without any interference with the existing parts originally put up. The plan given to-day shows the docket offices to both the male and female workers' entrances, cloakrooms, and lavatories for each sex, as well as the manager's office, all in the low annex. Sliding doors for receipt of material and delivery of products occur at the ends of the factory with trolley lines and turntables for easy working throughout. The shaftings and gearings can be attached to the domical fabric, special provision for particular needs being schemed when the design is worked out, according to different requirements. North lighting can be provided, or turret lanterns, as may be best applicable. Electric fans to be fixed in the arched spandrels according to need. Discharge of the roof water is efficiently insured. The posts can be shorter than in any other form of stanchion system, as the ellipse gives ample headroom free of obstruction. The T-iron reinforcement is continuous from floor to floor without break or the need of any fitting at the capping level of the uprights, thus omitting the weak point in all previous construction of this kind of arched reinforced concrete. The old horizontal beam principle, besides restricting heights and augmenting cost, is, as a matter of fact, also an element of weakness due to the additional weight to be carried, and consequent provision of big foundations incidental to such excessive loads. The architect is Mr. Maurice S. R. Adams, A.R.I.B.A., the inventor of this system, for which a patent has been applied for.

Many thousands of tons of cement are leaving the Medway for South America and other parts of the world.

The design of Sir Aston Webb, P.R.A., has been accepted for the memorial of City regiments to be placed in front of the Royal Exchange. It comprises two Venetian columns of copper, the apex of each forming an emblematical figure. The base bears an appropriate inscription, with the names of the regiments concerned.

At St. Nicholas's Church, Deptford, on Tuesday week, Sir Frank Benson unveiled a memorial tablet to Christopher Marlowe, who was killed in a quarrel at Deptford in 1593, at the age of twenty-nine, and was buried in St. Nicholas's Churchyard. The tablet describes Marlowe as "the founder of grandiloquent blank verse," and states that it is erected to remedy the omission of past years by one who valued his writings.

AN APPEAL FOR AN APPEAL.

No sensible man can be averse to Town Planning. Hitherto where there were many owners, houses have been muddled together and called a town—for want of some authoritative power for co-ordination, it is a necessity of modern civilisation. Easy means of locomotion make possible to-day what was impracticable fifty years ago.

In view of the universal shortage of houses, and the little success of this Act—I believe only six schemes have matured in nine years—and the great interest the public are now taking in these questions, the following examples of difficulties under Town Planning Schemes may be of general interest, and gain support for some practical appeal, and so give confidence for development and expedite both Town Planning and House Building. Simplification of the cumbersome procedure is also necessary, but Local Authorities and the Local Government Board will see to that.

There must be something radically wrong when the application of this scheme wrecked the excellent building boom in East Birmingham. I know of no development so good in the City for artisans' houses, nor have I met with any surveyor or builder who does. It was so good that it amazed builders from other towns, how such excellent houses could be built to pay, with pleasing elevations, three bedrooms with a fire place in each—in many instances a bath room, with hot and cold water upstairs—on plots 40 to 50 yards in depth, 15 to 18 houses to the acre, to be let at 6s. 9d. a week, with perfect sanitary arrangements as far as science has advanced, and in spite of the excessively elaborate roads, costing about £400 an acre to develop back land. Plans for the best of such houses as these were refused by the first committee. I have frequently offered £10 to the Red Cross to the first who can tell me of better development in Birmingham or elsewhere in the Kingdom on an extensive scale, unconnected with any business or charity, etc.

This was an experimental scheme, the second to be launched, and the first to deal with urban lands; the north-west end of this area was right into Saltley, the hub of the manufacturing portion of the city, with its teeming and ever-increasing population. As the Local Government Board had the controlling power and the last say, they must be responsible.

The 1909 Act, Land Taxation, stopped building generally all over the country, except in a few such districts as this, where houses were so urgently required that the houses could be let almost on the arrival of the first load of bricks.

I see by a newspaper report that Dr. Addison, the new President of the Local Government Board, said at a Conference in London, on May 20, that "Properly carried-out schemes, developed in a rational way by professional and practical men would, he was sure, be far better than schemes carried out by local authorities in a haphazard manner." This pronouncement gives hope.

I am surveyor to four landowners in the area who were doing three-quarters of the development by twelve out of a total of fifteen new roads within the area, so know the facts.

On one owner's estate of ninety acres, ripe for development, entirely for artisans' houses, about forty-five acres of which were being developed by nine new roads, under three private schemes (one by order of the High Court) at an ultimate cost of £20,000, there were four builders at work. One had built up three-quarters of one road with the best of such houses, with upstairs bath-rooms, etc.; there were negotiations proceeding with him and two fresh applicants to build seventy more such houses (including ten on another estate), but when builders saw the treatment owners were liable to under the scheme, the negotiations fell through. Another builder who had started excavations for twenty-four houses on this estate would not proceed, and eventually this same owner cancelled the contract and forgave over £70 accumulated ground rent. Since this time there has not been a single house built on a bona-fide application to do so.

Before the war, I estimated roughly that

if the scheme was not amended, this owner stands to lose nearly £10,000, mainly through being denied what was granted to others. The Board once replied they were not a judicial Tribunal, but surely they should dispense their decisions with more care.

Although the development was on such excellent lines, anticipating town planning, this, I think helped the wreck, as the Local Government Board appeared to think they must try to go one better, and so wrecked all. At that time people questioned if it paid to build artisans' houses with such amenities. It was so excellent that one of the first municipal engineers in the Kingdom referred to it in a paper he read at their annual meeting at Plymouth, in June, 1910, as an example of what could be successfully accomplished by private enterprise on generous lines.

I submit that development by landowners (not speculators) is the best kind of development. They do not try to squeeze in every possible house or exact the utmost ground rent and take an interest in their estates.

The ground rents on this estate were moderate, only £2 5s. 0d. a house for houses fronting new roads, and was not increased in the height of the boom. The houses were so good that they sold as fast as they were erected, thus finding builders money to proceed; and the securities were so well reported on by surveyors, that solicitors readily bought the ground rents for investment by trustees, and applied for them in advance, thus finding money for further development.

Within the whole area, as far as I am aware, artisan's houses have only been built since that time by Sutton's Trustees, a wealthy London Charity that may not receive more than 2½ per cent. on their outlay. Another where ten acres of good land with 700 yards of main road frontage (one with a tramway), was sold by executors who had to realise, at a less price than it costs to develop back land; and two other cases where larger houses were required.

It is right to mention, this scheme was launched and appeared rushed at a time when the city officials were over head in work on the Greater Birmingham Scheme; the inclusion of lands that were committed to private schemes of development beyond alteration cause the chief trouble; all parties were new to the work, and the authorities did not seem to appreciate the great difficulties in dealing with such land, which I believe is generally left out in subsequent schemes.

The second chairman, in whom we all had confidence, much improved the draft scheme, which, however appeared rushed a second time, on July 30, 1912; fresh matter was introduced at the last moment without the landowners' knowledge, so that it could be in time for the approval of the Corporation before the long vacation. This was necessary; there had been so much unavoidable delay owing to the Greater Birmingham Scheme, elections, etc.; but the act says owners shall be consulted on every occasion—this perhaps the most critical one.

When the surveyors appealed to the local authorities, the reply was: send in your objections in writing; they will be considered by the Local Government Board. This was done, and the points were urged at the enquiry before the Local Government Board inspectors; but little notice appeared to be taken, although the cross-examination of some of the Corporation witnesses showed that certain provisions had been made in the scheme without their comprehension of the facts upon which the provisions were inserted; and in reply to the Board's two subsequent advertisements for objections, the same requests were made in writing and by plans still more emphatically.

The authors of the scheme seemed biased against the advice of surveyors or any development except their own. The local surveyors collectively in writing warned the local committee and the Local Government Board that their proposals would stop building of artisans' houses.

I will give three examples of what I submit shows ill-considered treatment that are easy to demonstrate and prove this need of appeal.

(1) They refused eighteen houses to the acre, to front a new road at one end of

an estate near large works. It was clearly shown that it would be a loss to develop with less, yet in several instances further out from the town they readily allowed eighteen houses to the acre on land suitable for and in the neighbourhood of larger houses.

(2) An old agricultural fence was adopted as the boundary between private houses and factories; near alongside was a 3 ft. main sewer, over which it was proposed to extend a road; at the enquiry, and on the two subsequent occasions the owner engaging a surveyor and lawyer, submitted plans and requests that the line of the proposed road over the sewer should be the division between houses and factories. This simple request was refused, so that the road frontage for houses was cut off by a narrow strip of useless land for factories!

(3) Over twenty acres of high, sound building land, about 20 ft. above the main L. and N.W. Railway, worth about £300 an acre (the front land about £800 an acre), on which in such a situation as many houses should be erected as reasonably possible, was included in the same zone for twelve houses per acre as on some cheap land the corporation had recently bought, about fifty acres of which was low-lying land by the River Cole, about 10 ft. below the railway, a large portion intended for recreation ground and allotments, hardly worth £70 an acre, at Stechford, further from the town; also one end adjoined a large infectious hospital.

If there had been an independent appeal, I submit, such treatment and such a wreck of good development could not have occurred; the very fact of there being an appeal would have made all parties more careful. It is not surprising that builders and those who financed them cleared out of the area, and were not willing to put bright sovereigns into such a concern—capital is a shy bird—hence the shortage of perhaps nearly a couple of thousand houses in East Birmingham, and the corresponding overcrowding, inconvenience, and suffering to thousands of people.

The scheme seemed rushed a third time by the Local Government Board, and laid on the table of the House at the fag-end of a busy session. Probably the few inspectors at that time were unable to grapple with so many proposed schemes. Mr. John Burns, on November 25, 1913, at Caxton Hall, said 200 schemes were being put forward or talked of.

The surveyors believed to the last their requests would ultimately be granted; they were so astounded at what they considered the arbitrary and unfair treatment, especially to landowners who were developing, that they appealed in writing to every member of both Houses of Parliament; they interviewed several and gained sympathy, including one of the leading statesmen of the day, but he found a further inquiry would be first necessary, for which there was not sufficient time. He, however, kindly called on the Local Government Board and expostulated at the treatment we had received; so again there was no appeal, except the impracticable one to the King (which is to be cancelled by the new Bill), and so this scheme became equivalent to an Act of Parliament, without appeal, and condemned by all but the authors.

Application was at once made to the local authorities to amend. The reply was, it was too soon. They also pointed out the difficulties of amendment, viz., the same ponderous procedure as for a new scheme (this one had taken about three years). Application was then made to the Local Government Board, who replied they had no power unless requested by the Corporation, who in turn referred to the committee.

The decision for an amendment surely should not be with the originators of a scheme, without any appeal; but the second chairman, who had much improved the scheme, in consultation with the late town clerk—(than whom I do not suppose there was a more level-headed town clerk in the kingdom)—who together knew more about it than anybody else, after considering the objections, promised to advise the Corporation to amend. He had to resign for a very special reason, and the third chairman, who had

been on the committees from the first, refused to consider the matter. I then appealed direct to the Corporation, who appointed the third chairman, who had already refused, and also the new general town planning chairman, who knew nothing of this scheme (much complicated by the inclusion of lands under development), to go into the matter and advise. When we met, they asked me to only then state the requests for their consideration. I understood there would be another interview for discussion, but they wrote to me they had decided not to advise amendment; their letter teems with misunderstandings of the facts and reasons for giving such advice, yet there is no appeal.

There is great difficulty, owing to the constant changing of the committee and officials. It causes landowners incredible difficulties in having to post fresh members up in the complicated questions that arise where land was previously being developed under different schemes. There is now a fourth chairman, whom I have not approached. I have felt an amendment of the Act must soon come—and therefore now make this appeal—for an appeal and to be retrospective.

In my humble opinion an appeal could not be better than to the President of the Surveyors' Institution or his nominee. This would give general confidence and help more than anything to facilitate town planning, as he would be a practical man and see all points at a glance.

If half a dozen well-considered bye-laws could be made applicable to the whole country, and if local authorities, or in certain cases county councils, had power to fix building lines and approve the straightening and widening of old roads, and so give a title to any abandoned sites of old roads—(scores of landowners would in the past have been willing to carry out many improvements, but the difficulties were too great)—this would have a far-reaching and good effect by preventing injury to localities that are not ripe for town planning schemes, and facilitate schemes when necessary at a future date.

There was nine years ago an outcry against bye-laws, but that is not the fault of the system; it is the fault of the bye-laws themselves. If properly considered by practical men, a local authority can, without expert knowledge, dispense bye-laws satisfactorily, but very much thought, much practical experience, and much time and patience is required in creating and carrying out town planning schemes, which are equal to an Act of Parliament. The whole of a committee have not time to attend to such complicated details, especially when dealing with partly developed land, and it is not unnatural may vote perhaps on the recommendation of the chairman. If so, it is not impossible that in a case when Parliament depends on the Local Government Board, the Board on the corporation, the corporation on the committee, the committee on the chairman, a scheme may really be a sort of one-man Act of Parliament. It is a big job for an individual to appeal to such a formidable host. Parliament has never given such powers before.

There are four excellent examples of town planning in Birmingham, which are show places and much talked of, but only one of them is developed for artisans' houses, viz., Sutton's Trustee's Estate, which may only receive 2½ per cent. on their outlay; another in connection with a lucrative business, developed by cheap roads for larger houses before it was annexed to the city. Another estate was also developed by cheaper roads for larger houses. None of these may be a financial success on their own; but the excellent East Birmingham development was almost entirely for artisans' houses on business lines, with elaborate and unnecessarily costly side roads, viz., costing £7 per yard run or over, similar to many mid-city roads.

The South Birmingham scheme is now proceeding successfully from a surveyor's point of view; but at the first meeting the landowners, having heard of the treatment of landowners in East Birmingham, refused to agree to a scheme until they knew what the proposals were. The chairman (the second chairman who helped the East Birmingham scheme) saw the absurdity, and on his own

initiative adjourned the meeting and promised to prepare a draft scheme first. Had this been done in East Birmingham many of the difficulties, no doubt, would have been avoided, but having been so experimented upon, in common fairness speedy relief should be given.

I submit that the landowners in East Birmingham area, having been so experimented upon for the good of others, should in common fairness to them and the local population be given speedy relief—and an inquiry made.

There is no appeal, and I have no precedent to go by, so am writing this, hoping for success. I have had over forty years' experience as a surveyor; for twenty-five years I have seen the necessity of, and been in favour of, town planning, and advised my clients to favour it, which they readily did, until the first chairman talked of ten houses to the acre and insisted on including in the scheme these lands under course of such excellent development. It took the ground rent of eight houses to pay for roads.

Anyone sufficiently interested can see for themselves the excellence of this development and the acres of open spaces at the back of houses—(offers of substantially increased ground rents were often refused if erections of stabling or shedding were permitted at the back)—and the ghastly wreckage of unfinished roads side by side—by visiting the Sandbourne, Brook Hill, Sladefield, Bamville, Monk, St. Agatha's, Woodwells, Thornton, Pelham, and other roads, Alum Rock and the Lime Tree, Ward End Park Roads, etc., others at Washwood Heath.

Some of the objections to the scheme may seem small matters to the Local Government Board, who are accustomed to think in millions—with other people's money—but the result is patent. Care should be taken that unnecessary difficulties should not be put in the way of building. Houses cannot be imported, and with higher wages and shorter hours, it is difficult to see how land can be developed, and houses built to let at reasonable rents. It is to be hoped the British bricklayer and others will give their reasonable best.

RICHARD FOWLER, F.S.I.

118, Colmore Row, Birmingham.

The Stratton R.D.C. have appointed Mr. M. V. Treleven, of Bude, as architect for the district housing scheme.

The Batley Trades and Friendly Club has decided to carry out alterations and additions to its premises, at a cost of about £2,000.

The Cookstown Guardians have decided to ask Mr. Houston, architect, Belfast, to prepare plans for turning the workhouse buildings into a modern hospital.

The Durham C.C. has approved a recommendation to build an additional room at the Shire Hall, at a cost of £900, and to extend the officers' club premises, at an estimated cost of £1,150.

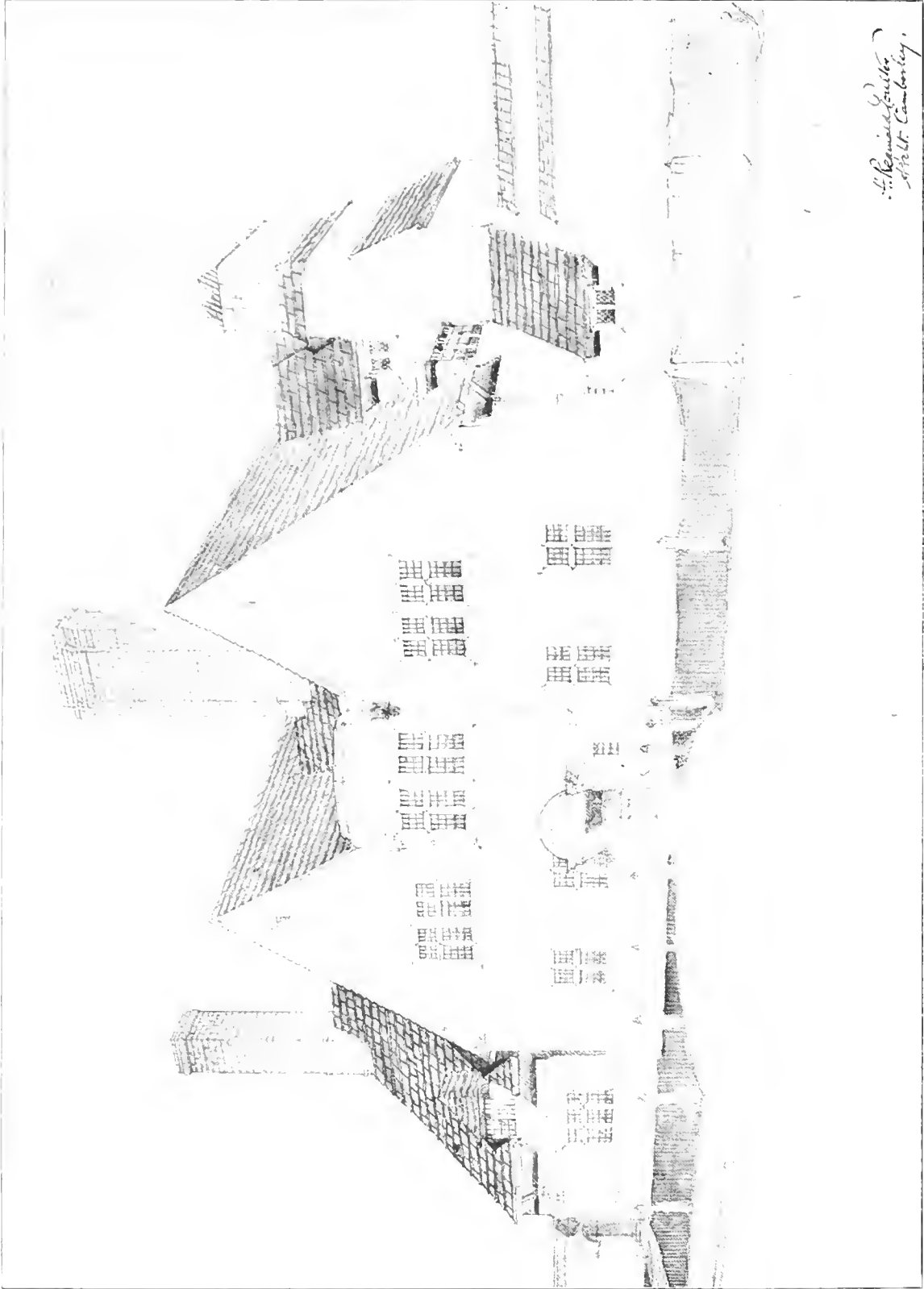
The Birstall U.D.C. has in hand a scheme for, as a war memorial, a town hall, with a soldiers' and sailors' club, estimated to cost £15,000, of which £5,000 will be raised by voluntary subscription.

Funds are being raised for the erection of the new Sussex Hospital for Women and Children. The site is on Windlesham House School, Windlesham, and has been acquired. Mr. Clayton is the architect.

The Wilton Council have decided to engage Mr. A. C. Bothans, of Salisbury, to prepare plans showing the various housing sites selected and the position of the houses for submission to the L.G.B. for their approval.

The West Bridgford U.D.C. have approved the design of Mr. W. R. Gleave for a memorial hall, reading-room, library and monument to be erected at the junction of Musters Road and Bridgford Road. An appeal is made for £2,000 to carry out the work.

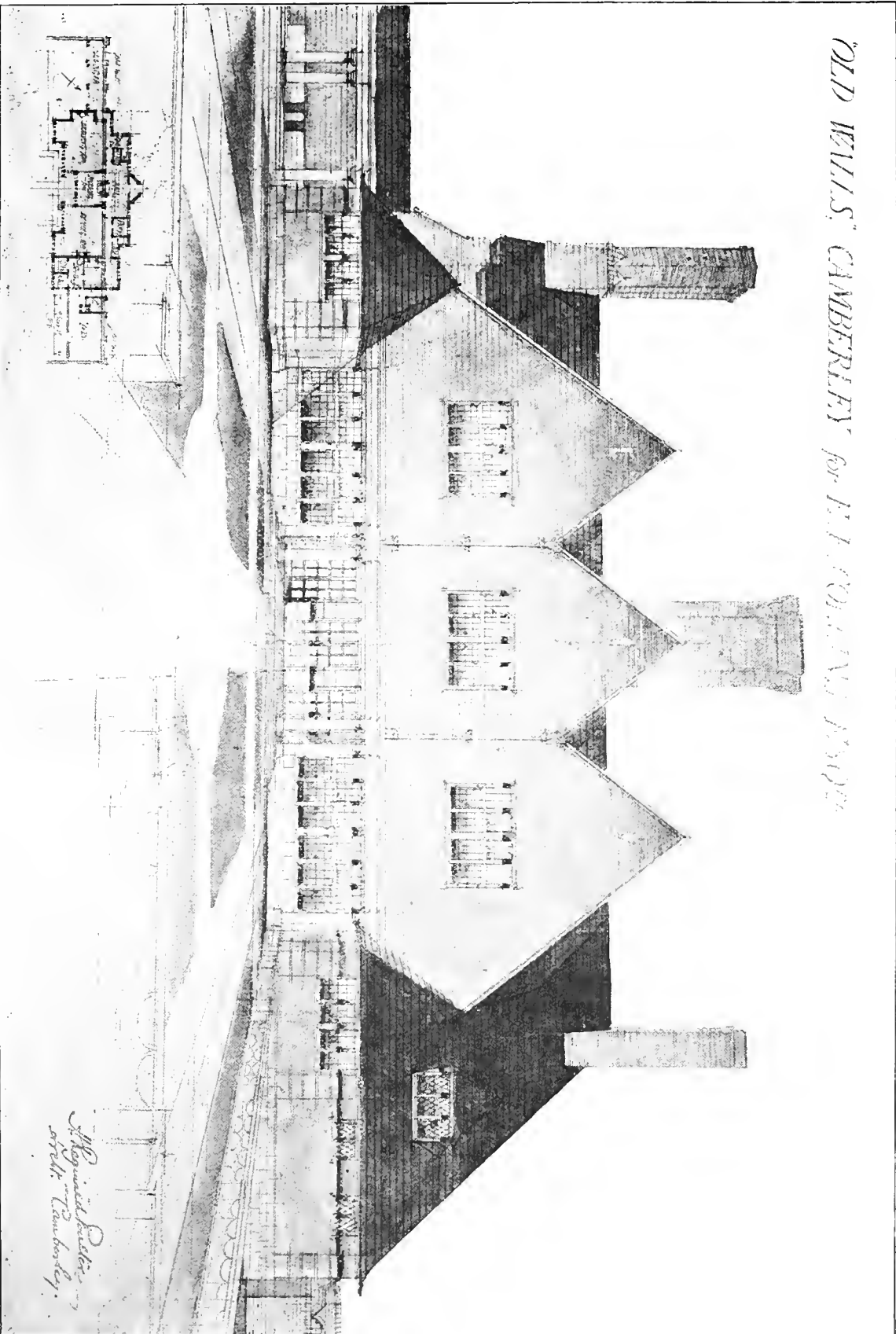
The Battle Exploit Memorials Committee, a representative committee of senior officers appointed to consider claims made by units to erect on battlefields permanent memorials of their exploits, announces that the appointed date by which claims must reach the Secretary of the Committee, War Office, Whitehall, S.W.1, is now, for all units, September 1, 1919. The date originally fixed was June 1, but the time has been extended owing to the difficulty found by some units in submitting their claims by the earlier date.



Reginald Poulter
Arch. Camberley.

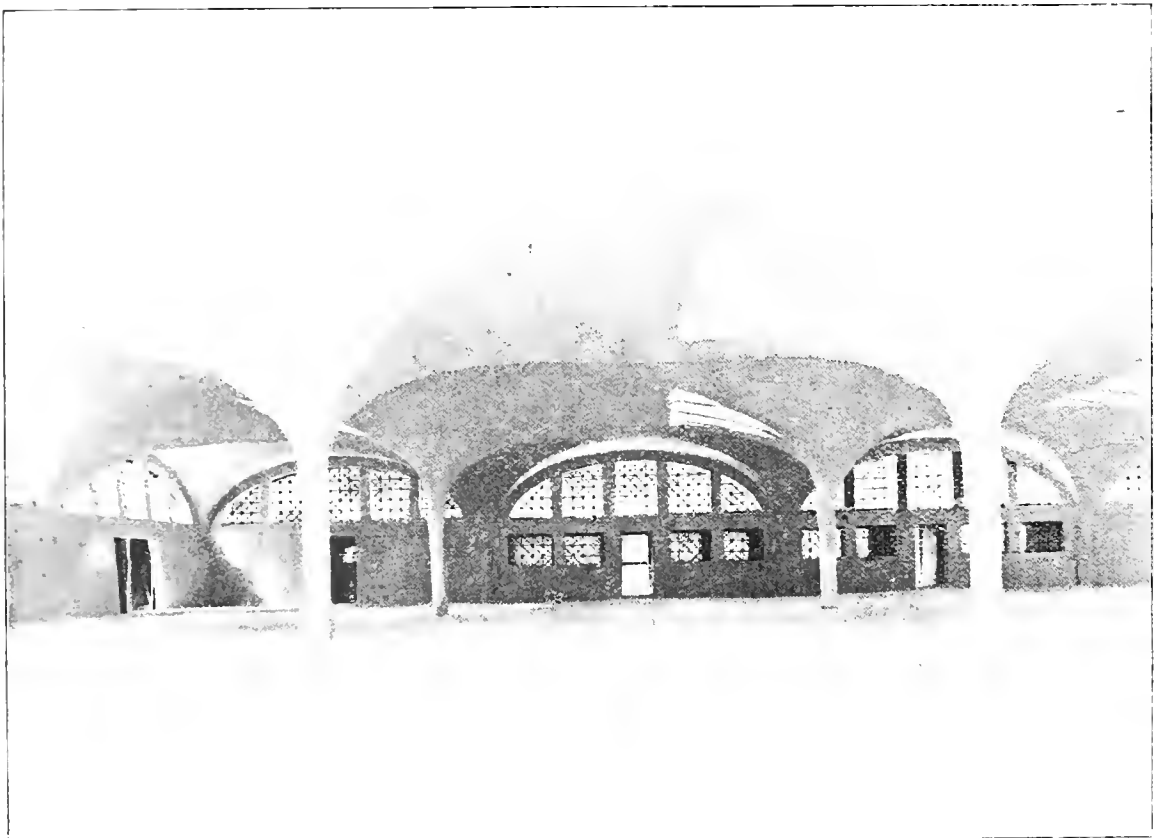
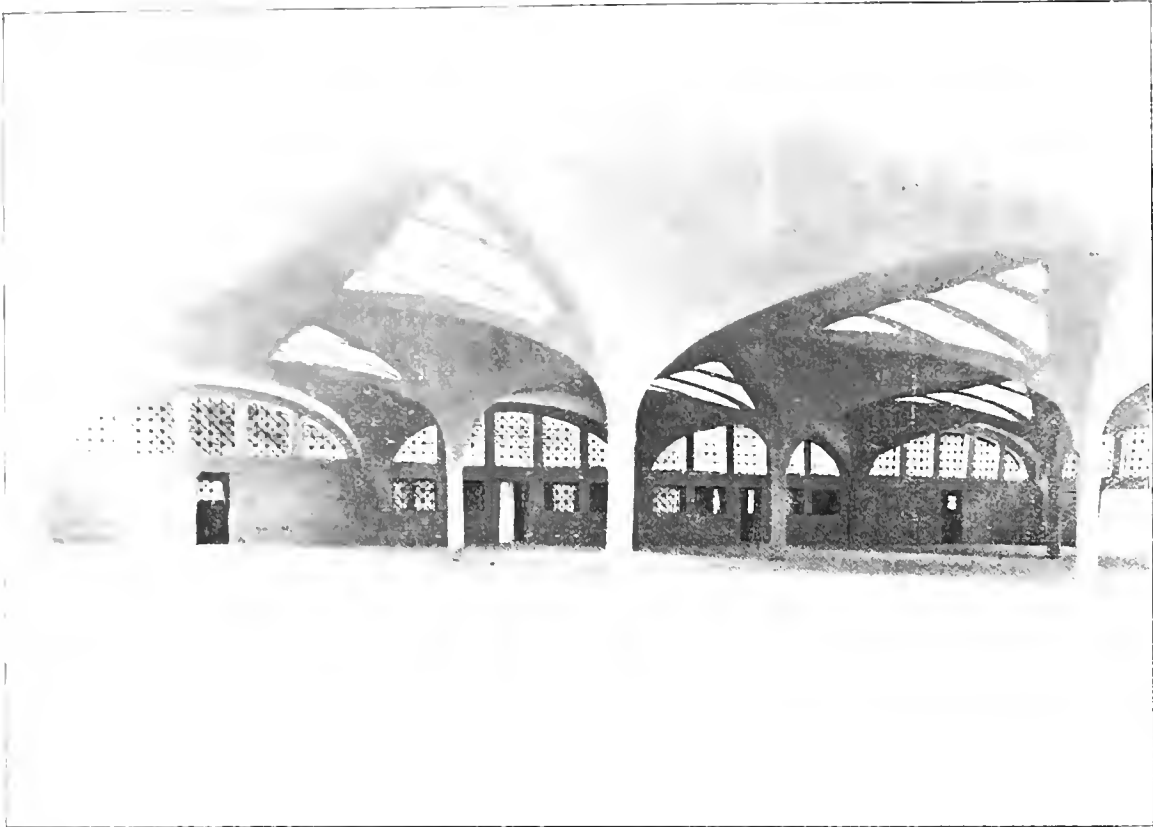
"OLD WALLS," CAMBERLEY, FOR MR. E. E. COLLINS.—MR. H. REGINALD POULTER, ARCHITECT.

“OLD WALLS,” CAMBERLEY, FOR H. J. COLLINS AND SONS

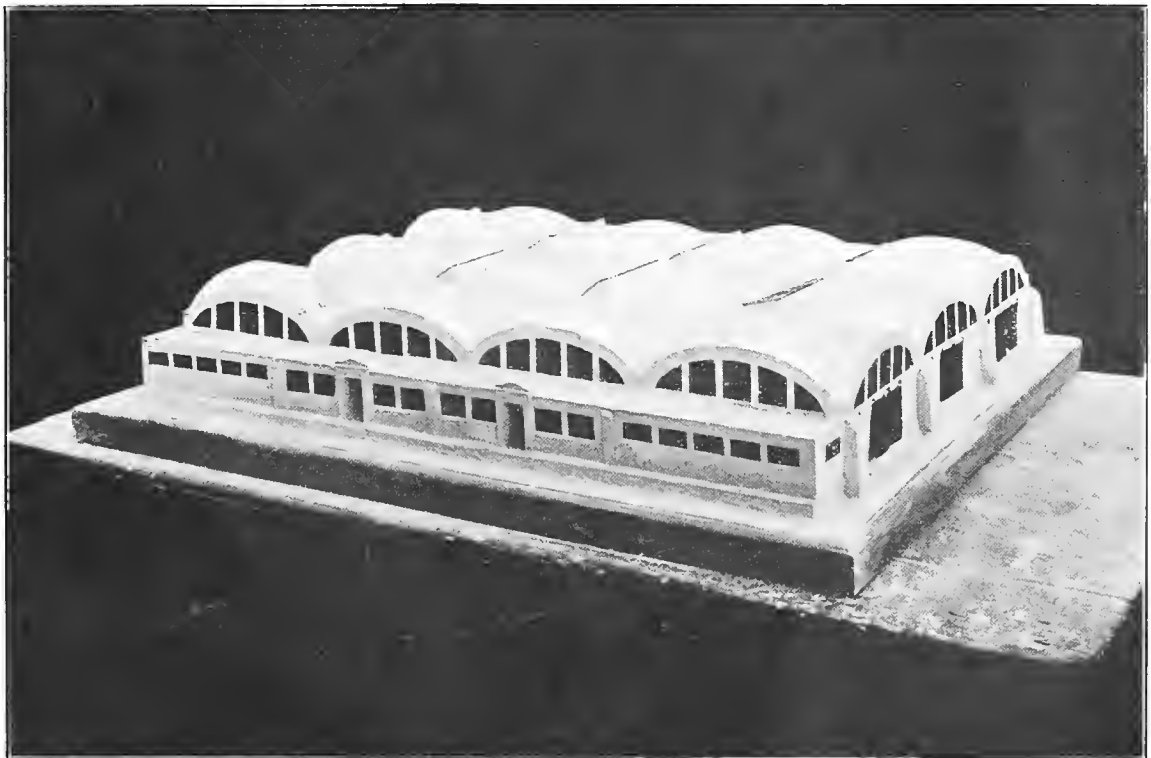
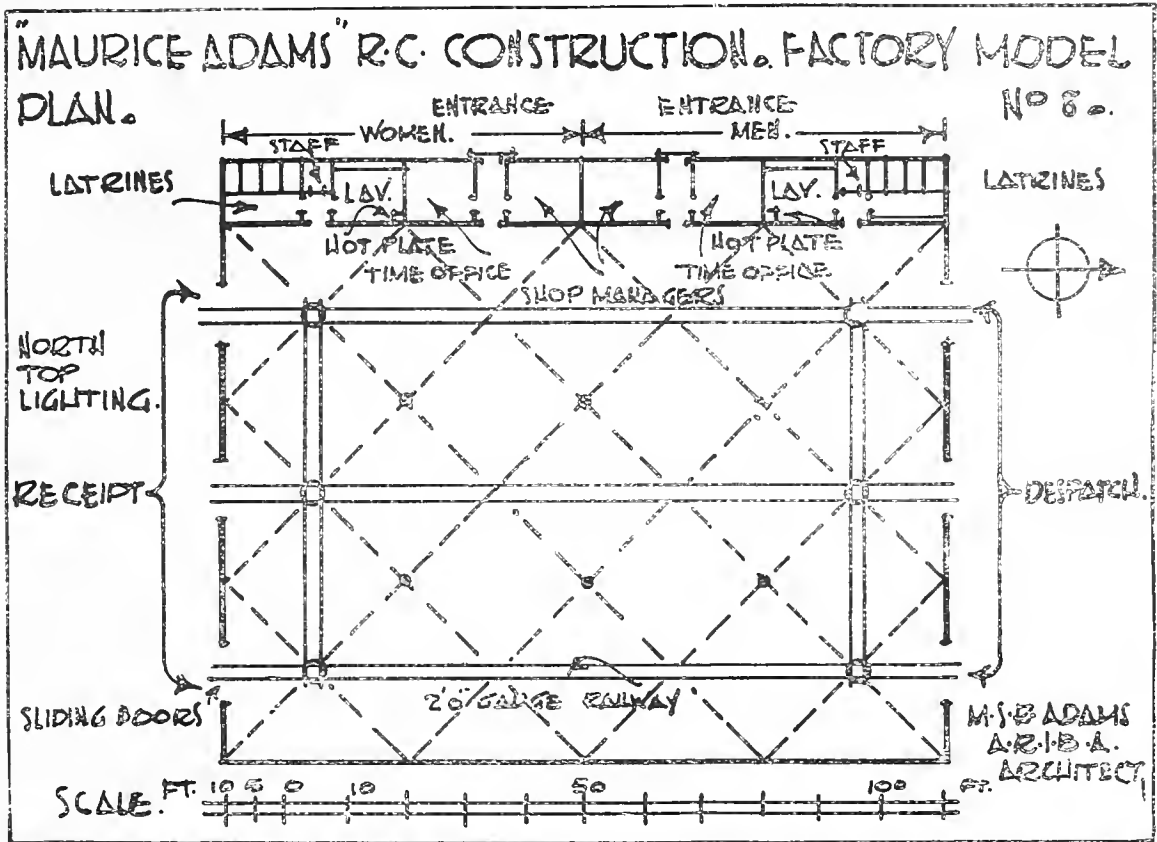


“OLD WALLS,” CAMBERLEY, FOR MR. E. E. COLLINS.—MR. H. REGINALD POTTER, Architect.





PATENT APPLIED FOR.
A REINFORCED CONCRETE CHEMICAL FACTORY FOR STAFFORDSHIRE.
120 ft. long by 90 ft. wide, with only six posts.
MR. MAURICE S. R. ADAMS, A.R.I.B.A., Architect.



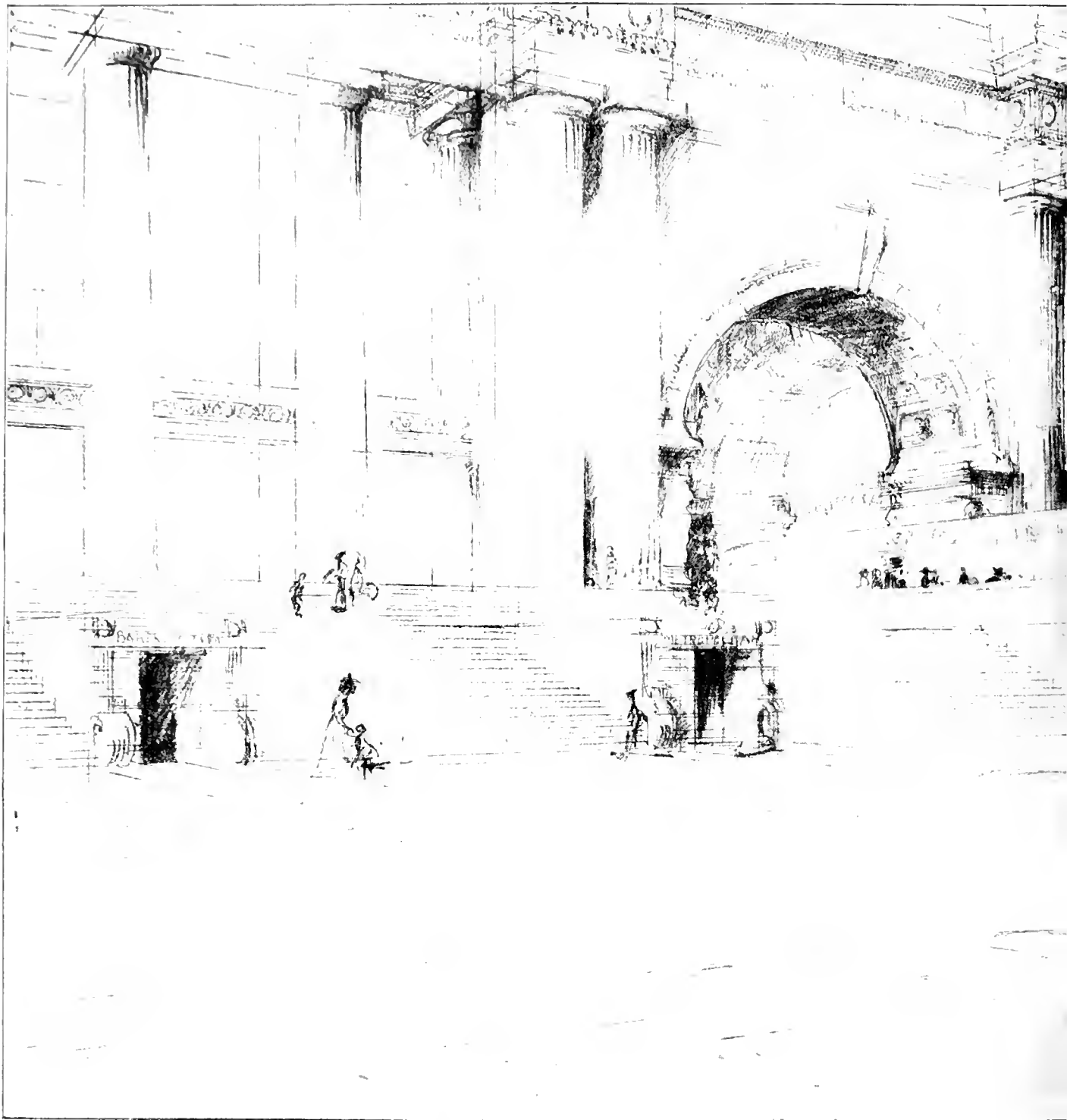
[PATENT APPLIED FOR.]

A REINFORCED CONCRETE CHEMICAL FACTORY FOR STAFFORDSHIRE.

120 ft. long by 90 ft. wide, with only six posts.

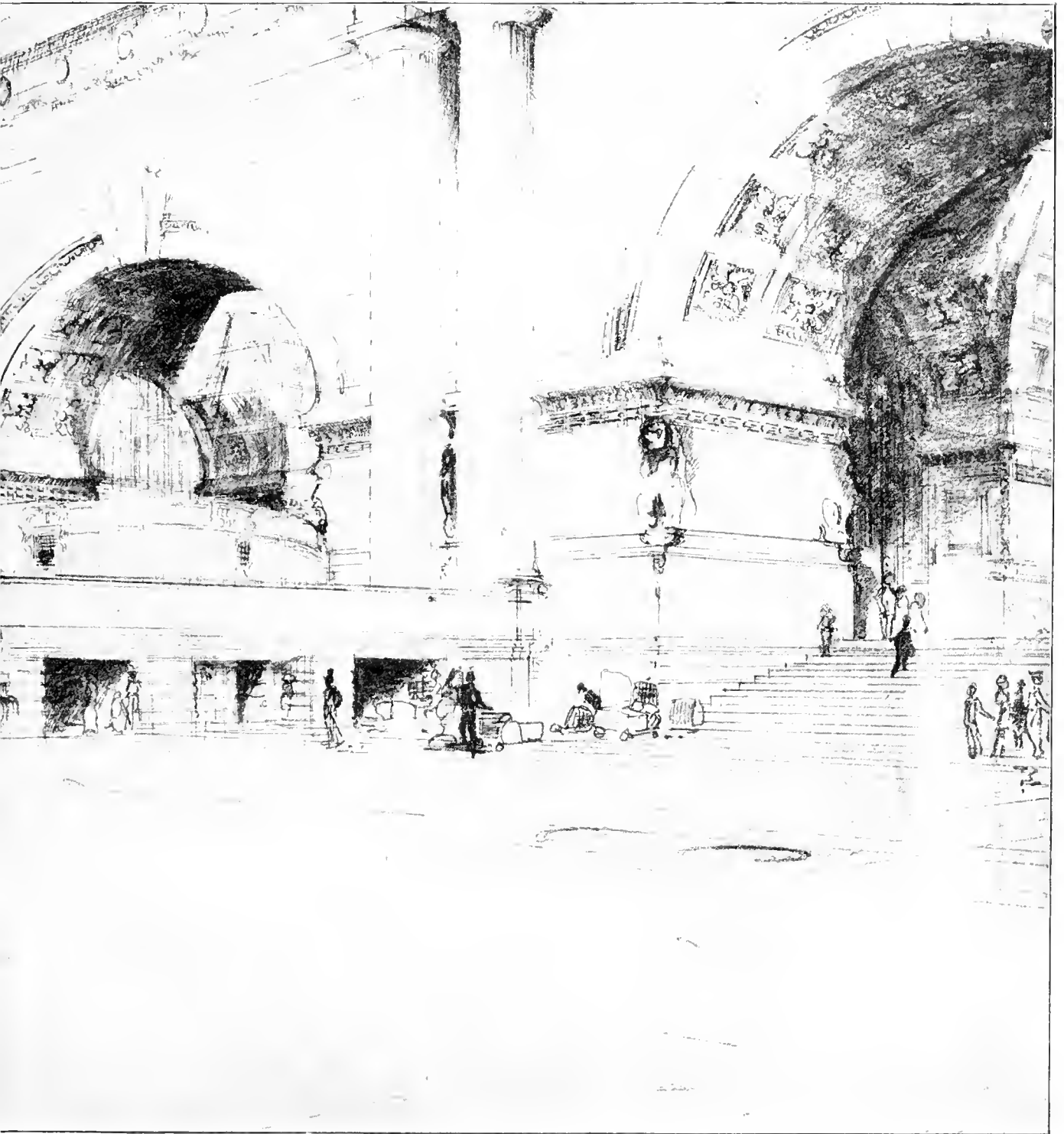
Mr. MAURICE S. R. ADAMS, A.R.I.B.A., Architect.





PROPOSED REMODELLING OF PADDINGTON
Mr. PHILIP T

JUNE 11, 1919.



STATION, GREAT WESTERN RAILWAY.
[Name], Architect.



THE STATUS OF THE ARCHITECT: ART, PROFESSION OR BUSINESS.*

By IRVING K. POND.

If this is a question, it was answered properly many decades ago for the Institute by itself. If it is a statement, the form is improper and should be: Art, profession and business; a "Trinity" and withal a "Unity"; a paradox which, in another field, the dogmas of orthodox Christianity have forced many to accept, and many others to contemplate with more or less strained acquiescence, or with no emotion whatsoever. But perhaps in the architectural field it is not a paradox, but upon analysis will prove to be a clean-cut statement of fact. Under whatever phase it may be discussed, however, I am going to regard it all in the light of the words of old Polonius, whose advice holds just as good under post-war as it held under pre-war conditions, and it held with firm grip then: "Above all," he says, "Above all to thine own self be true; and it must follow, as the night the day, thou canst not then be false to any man." If the architect sincerely maintains that attitude the public will soon enough recognise him in and through it, and repose confidence in him as an artist, and as a professional man who, with the ordered instinct of business, co-ordinates his powers and faculties and accomplishments to the end of a deeper and richer personal and public service. "To thine own self be true"—and let post-war committees and a complaining public—if it exists—go hang.

And if the architect be true to himself what does he mean by Art? Is it what the narrow-minded structural engineer—not the engineer in general, but the narrow-minded, structural engineer—for his own immediate, selfish, commercial advancement, says it is—though down deep in his own heart he knows better—a mere ornamenting of the inherent structure with pretty, or supposedly pretty, decorations? I shall not deny—but, rather, shall insist—that architects have too frequently given the public as well as the structural engineer some show of reason for entertaining at least such a suspicion. Art means, in architecture, not the application of anything, but the presence of a guiding and directing spirit through whose intervention the problem shall be so solved that function shall be perfect while through and permeating the material mass the spiritual essence of order, appropriateness and charm shall warmly irradiate. Charm is a rare word, and its essence is all too rarely distilled into architecture. Catch and hold its fleeting beauty! Art in architecture means that the desires of the soul as well as needs of the body are fully ministered to. In this age it were perhaps better to say the needs of the soul and the desires of the body. So much, and briefly, for the art. Now for the profession.

The architect who is true to himself will be true in his professional capacity, and so cannot be untrue to the profession. (My inadvertent introduction of "and so," just here, reminds me pleasantly of the rather anomalous position I occupy in discoursing in this august presence, even in response to an invitation, upon architectural art and professionalism. The *Journal* of the A. I. A. maintains and has promulgated the idea that my aesthetics, and the ethics involved therein and practised by me throughout a long series of years, are a *blight* on architecture, "from which, however," it opines, "the profession will be secure." In spite of that bar sinister, as it were, across my professional shield, I am inclined to proceed.) What is the attitude, the state of mind, the state of being almost, which distinguishes professionalism from business? It lies in a dual function of the professional mind: the one phase touching the attitude of the professional towards his client and the other touching his attitude towards his calling, including self and brother practitioner. As towards his client the professional must always hold himself in position to give full and frank advice removed from the slightest possibility of being affected by self-interest. This necessarily prevents the professional architect from engaging in the building

trades, or in any building trade; or from letting a direct contract for a client in the architect's name; from operating similarly through a "cost-plus" contract, or even a fixed fee, as this is liable—extremely likely—to bring architects into competition with each other in point of fees. The architect's disinterested position—that is, from the standpoint of self—has been wisely safeguarded in the past. I hope that the Institute as a professional body will never fall from that high estate. Post-war conditions have not made it necessary.

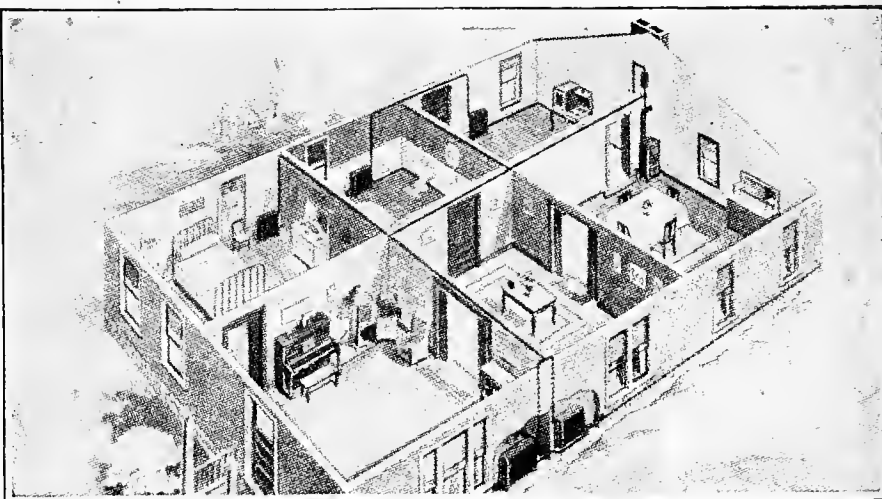
As to the architect's attitude towards his professional self; it should be one of dignity and self-respect, so that he should not feel called upon to slink out of his clothes in the dark when he retires, shunning any waking thought of himself, but so that he should be free and glad to behold his face in the mirror as he brushes his hair in the morning. A man who considers his creative power valueless, who is willing to let any wished-for or hoped-for client illegitimately mother, and, through ignorance, impotence, or abortion, fail to bring forth well-formed the children of his brain, has no self-respect, is not respected by others; has no sense of personal dignity, and could not impart dignity or charm even to his legitimate offspring—which are justly looked upon with derision (at least, with suspicion) by others.

public which knows or cares anything about the internal workings of the profession.

In the art, the profession, the business of architecture it is the duty of the Institute to set the standard high, to draw all adherents of that high standard to itself—to educate the public and the profession at large to an appreciation of that standard, and to shut the door upon all who drag it down. There is no conflict between the art and the business of architecture; neither should be developed at the expense of the other; neither *can* be. An individual may be proficient in one branch or the other, in both, or in neither. His proficiency and his professional integrity will determine as to how each branch shall develop in the practice of that individual, while a reasonable proficiency in each branch and in all branches, and a reasonable amount of self-respect, will beget in the public mind confidence in and respect for the professional and the profession.

HEATING NON-BASEMENT HOUSES.

In many places it frequently becomes necessary to erect houses without a basement or cellar. To heat such it has been necessary to use stoves in the several rooms. A modification of the common hot-water heating



Heating System for a House without a Basement.

The man who offers his advice for nothing gets just exactly what it is worth—and finds the sum or the equation balanced in the minds of his clients and of the public. If architects, as a rule, were to place a value on their creations and on their advice, giving themselves not in anticipation of favours, but only for the public weal, the vexed problem of competitions would mainly settle itself; a very minor code would be needed. Until that status exists, however, a real code will be required—not a code, by the way, such as has been suggested, which inadvertently opens the field to competitions without sign of supervision, placing restrictions only about a "formal competition" which under such circumstances never would be instituted. Self-respect will beget a respect for others, and will be treated with respect by others.

As for business, that term must be made to cover all (and only) the necessary financial and executive or administrative side of the profession, and must not include the participation of the professional man in contractual relations, except as with the client. The Institute, through its schedules, and codes, should in these business matters be of much fuller assistance to its members—and so incidentally to the profession, which depends upon the Institute for leadership and guidance. If the Institute sets the example and is true to itself it will make a real study of the schedule, nor hesitate through fear of confusing the public or creating in its mind the impression that the architectural mind is not a unity within itself—a fact which is fairly apparent to that small section of the

system has been arranged in the United States for such conditions as shown herewith.

The boiler, built in small units, is placed in one of the rooms and serves as a stove for that room. Pipes then lead from this boiler to radiators placed in adjacent rooms. The first line of pipe is taken upward to as high a point as possible, where an expansion tank of small capacity is placed. Each radiator has a connection to the return pipe line leading back to the boiler.

While the pipes may be concealed within partitions, this is scarcely practicable where the installation is made in an old house. When the pipes are in full view a couple of coats of aluminium paint make them very presentable and, in fact, scarcely noticeable.

The stove is trimmed in nickel and, according to the *Scientific American*, is quite attractive. It can be built up in units, so that its size can be gauged according to the number and size of the rooms and the exposure of the house.

The Middlewich U.D.C. has appointed Mr. Ernest G. Allen, of London, as architect for the thirty-six houses which it is proposed to build.

Plans have been approved by the U.D.C. for a cinema in the Park, Matlock, for the Midland Electric Theatres, Ltd. Messrs. Naylor and Sale, of Derby, are the architects.

Mr. Thomas Hardy, O.M., celebrated his 79th birthday on the 2nd inst. He received a large number of congratulations. He enjoys quite good health, and is able to follow his usual pursuits with characteristic zest. He occasionally sits on the Bench as a Justice of the Peace for Dorset.

*An address given at the Nashville Convention of the American Institute of Architects.

SAMUEL PERKINS PICK, F.S.A.,
F.R.I.B.A.

By the death of Mr. Samuel Perkins Pick, the architectural profession has lost a valued member, who not only did fine work himself, but was a source of inspiration to all who came in contact with his sane and fertile mind. Born at Kettering sixty years ago, the son of a veterinary surgeon of that town, Mr. Pick was educated at Kibworth Grammar School, and articled to Mr. Frank Smith, an architect at Leicester. From 1888, when he went into partnership with Mr. J. B. Everard, he was constantly engaged in important architectural and engineering work, and many buildings, especially in Leicester and its vicinity, bear witness to his practical genius and imaginative depth. When Mr. Everard retired a few years ago, Mr. Pick, as head of the firm Pick, Everard and Keay, became the acknowledged leader of the profession in Leicestershire.

Last January, on the nomination of the Royal Institute of British Architects, he went to Cologne as a member of the Overseas Civilian Advisory Board, and while in Germany gave counsel to about 2,000 officers, whose architectural careers had been broken into by the war. The effort involved in this honorary duty, long motor drives in extremely cold weather, and the strain of the journeys to and from Germany, intensified symptoms which had caused his friends anxiety since the preceding November. Mr. Pick was thoroughly exhausted when he returned to Leicester. His condition was seen to be very grave indeed, and, after three months' acute suffering endured with fortitude, he quietly passed away before the sun went down on May 25.

The important undertakings with which Mr. Pick was associated include the Leicester part of the Derwent Valley Water Scheme, the Leicester Borough and County Asylums, the Leicester Royal Infirmary, the 5th Northern General Hospital (Military) at Leicester, St. Philip's Church and the suburban church of St. Michael and All Angels, Leicester; The Coppice Hospital, Nottingham; alterations and additions to Addenbrooke's Hospital, Cambridge; and the Royal Hampshire County Hospital at Winchester. There are many excellent private houses to his credit, as well as a number of war memorials and other monuments. In all his work Mr. Pick maintained a consistently high level. His familiarity with the best traditions, his sound common-sense and scorn of irrelevant show, gave an air of stability and intrinsic rightness to all he did. He knew that into all good work, done in a proper spirit, a characteristic beauty would come of its own accord. Such ornament as he employed had its root in his own feelings and the purpose inherent in his plan, and one of his last sayings, by which we may well remember him, was: "The older I grow, the more I value reticence." But, although he never sought an imposing effect he was so imbued with knowledge and depth of feeling that everything he designed had its peculiar beauty and dignity. His reticence was of the kind which implied a reserve of power. He was invariably original; but, although he was capable of a bold innovation, his work never gave the impression of mere novelty. Any irresponsible departure from sane tradition was foreign to his wisely conservative nature.

The most impressive monument of Mr. Pick's genius for design is Park's Bank at Leicester. This is beyond all doubt the finest modern building in that town, where nothing is comparable to it in beauty and dignity except the best of the mediæval churches. It is based on a profound knowledge of Renaissance architecture but is not a slavish copy in any particular. On everything Mr. Pick designed he left the original mark of his own sober genius, and it is impossible to look at this noble structure from any angle without feeling that it expresses an exceptionally fine mind and character. Yet with all this æsthetic grandeur, the practical occasion of its being is never for a moment forgotten. The writer has been shown how the interior, which is as impressive as the external elevation is full of ingenious contrivances to facilitate the business of bank-

ing. On either side the front door are groups of sculptured figures by Mr. Allen, of Liverpool, which enhance the beauty of the whole. The inclusion of these illustrates Mr. Pick's generous desire to find room for the work of an artistic colleague whose talent he admired.

When designing a hospital, that he might thoroughly understand what was required for efficiency, he would visit representative institutions and have long discussions with the best medical authorities. The same practical forethought is shown in the Leicester School of Art, where very complex requirements have been fully satisfied in a plan of marvellous simplicity. We are told that this building is most easy to administer and to work in, and that it is remarkable for excellent lighting, the convenience of its rooms, and the orderly and understandable arrangement of the whole. In case an extension should happily become necessary, this school has been so designed that by the addition of three wings enclosing a quadrangle it could be developed to four times its present size. Externally, the building has a fine and spacious appearance, which is not wholly accounted for by its actual dimensions. The same combination of good design, quiet originality, and practical convenience is to be found in his private houses and commercial buildings, and all who live or work in these will testify to their suitability, dignified feeling, and economy in management. It is easier to read a good book in one of Mr. Pick's rooms than in most mural surroundings, and in his sculleries, as someone humorously put it, the tap is always the right distance from the sink.

A notable characteristic of Mr. Pick was his entire freedom from professional jealousy. Remembering his debt to those who guided his own youth, he was always ready to help any sincere member of his own profession, and was genuinely troubled when any talent, however modest, was ignored. His kindness to the younger men will be especially remembered, and many architects are grateful for the help and sympathy he gave them at a time when assistance and encouragement were most needed. The fine quality of his work and his single-minded zeal in all that might benefit the profession led to his becoming Vice-President of the Royal Institute of British Architects, and he was twice President of the Leicester and Leicestershire Society of Architects.

Few men had a more intimate knowledge of mediæval churches, and none could have a deeper sense of all they stand for as monuments of time and reminders of eternity. As an archaeologist Mr. Pick was delightful, and he will be sorely missed at the gatherings of the Leicestershire Archaeological Society, where his considerate and modest criticisms illuminated many a discussion. His own papers were always valuable. The last of these, on "Swythland Slate Headstones," was a critical and poetic commendation of an unappreciated Leicestershire art which flourished in the eighteenth century. The writer has been with him on many occasions in churchyards around Leicester, and seen how moved he was by the graceful quaintness of the finer specimens of this bygone craft. He loved to see them in their homely native setting, for, a countryman at heart, the parish church, the manor house, the cheerful inn, and the ancient windings of a village street were the symbols of all that he held most dear. He loved it all—the romance, the piety, the laughter, and the tears—and the art and literature of this familiar England touched the deepest chords in his loyal, tender nature. It was this profound sense of the meaning of all that survived of the old tradition which made him such an opponent of light-minded and injudicious "restoration." As an artist, and also as a man of feeling, with a true historical sense, he saw the utter futility and irreverence of all attempts to recreate the past. The Society for the Protection of Ancient Buildings, with its wise policy of conservation by candid repair, had no stauncher supporter than our old friend, who, like Mr. Hardcastle in the play, "loved everything that is old," and knew that the old ways are generally the best.

Mr. Pick had a thoroughly critical appre-

ciation of the art and craftsmanship of the eighteenth century. The restraint and finish of its architecture appealed to him strongly, and in his own home he was surrounded by choice examples of the work of this period—paintings, furniture, silver, and Sheffield plate. He understood the greatness of men like Reynolds and Gainsborough, as he entered into the spirit of the water-colour men of a later date. It was this keen appreciation of the glories of the past which made him such a convinced advocate of sound instruction in art and craftsmanship, and what the country owes to his discernment and influence can never be fully estimated. At the Leicester School of Art his memory will always be held in reverence; and as long as his wise spirit continues to be a living force in that beneficent institution Leicester will have one strong defence against vulgarity and materialism. Mr. Pick was an enthusiastic Mason, and held high office in that mysterious and immemorial craft. He did valuable work on the Museum and Libraries Committee, especially in the selection of pictures for the Art Gallery. The extension of the historical side of the Leicester Museum was largely due to his stimulating enthusiasm, and he was the means of introducing several books of value and interest to the Reference Library in Bishop Street. A former President of the Leicester Literary and Philosophical Society, he served his generation nobly in more ways than we have space or knowledge to record.

The ashes of this remarkable man were buried in Leicester Cemetery on the Wednesday following his death. At the service in St. Peter's Church, which was filled with sincere mourners, Canon Elliott said it was a matter for profound thankfulness that a man who had invariably devoted his great powers to the highest and most unselfish ends had dwelt among us and left so sweet a memory behind.

S. H. SKILLINGTON.

Building Intelligence.

HAMMERSMITH.—The Borough Council has adopted a scheme for the reconstruction of an area lying between King Street and the river, and proposes to develop it under the Housing of the Working Classes Acts. Negotiations are proceeding for the purchase of some 70 acres of land in the northern part of the borough, upon which a model township will be built. There will be about 500 houses, some as flats and the others single-family residences. The proportion will depend upon the lay-out of the scheme prepared by a panel of experts, with Mr. H. T. Hare, the President of the Royal Institution of British Architects, at the head thereof.

The London County Council General Powers Bill came before the chairman of Ways and Means (Mr. J. H. Whitley) as an unopposed measure in the House of Commons last week. It was stated that the Bill related to the widening of the Strand and Liverpool Road, Islington, and also to the right of the public to use the flat roof of the Temple Station on the District Railway. When the railway was authorised in 1864 there was a provision that the roof should be open to the public, but after some years the rights of access to it, owing to complaints by the neighbours, were stopped. Now it was proposed to continue the rights under the control of the London County Council so that no "user" would be created. The preamble of the Bill was approved.

The borough surveyor of Newbury, Mr. S. J. L. Vincent, has received instructions to prepare details of a scheme for a public hall at the back of the Corn Exchange.

Two tenders were before the Havant Urban District Council for the execution of certain building works proposed to be carried out at the engine-house, the amounts being £512 and £510 respectively. Owing to the great expense of building at the present time, it was decided not to proceed with the original plan, but to erect a temporary shelter, at a cost not exceeding £60.

COMPETITIONS.

INCORPORATED INSTITUTE OF BRITISH DECORATORS.—The Incorporated Institute of British Decorators is offering travelling studentships and a series of silver and bronze medals during 1919. Two travelling studentships of £25 each will be awarded by competition, open to any students between the ages of twenty and twenty-five in any recognised school of art, training class, or other institution devoted to the study of applied art in any form, and situate within the United Kingdom, provided that such student shall have been a member of such school, class, or institution for a period of at least six months prior to September 29, 1919. Not more than two sets of competing drawings shall be submitted by any one such school, class, or institution. All further information relating thereto may be obtained from the Secretary, Painters' Hall, Little Trinity Lane, London, E.C.4, by application in writing not later than June 30, 1919, dated from the address of the institution in which the competitor is a student. The designs and envelope are to be addressed, carriage paid, to the Secretary, Painters' Hall, London, E.C.4, and must reach there not later than September 29, 1919. The decision of the Council, which shall be final, will be given on or before October 14, 1919, and communicated by registered letter to each of the successful candidates. The Council reserve the right to retain all drawings and designs submitted by competitors for a period of three months for exhibition purposes. No award will be made unless the work submitted be in the opinion of the judges of sufficient merit. The silver medal of the Institute will accompany each award of the travelling studentship to the first two successful competitors under the foregoing rules, each to be engraved with the name of the winner, followed by the words "Travelling Student, First Prize" (or "Second Prize," as the case may be) and the year, "1919." A third silver medal and £5 will be awarded to the competitor who submits the drawing or design (executed by him in the course of his training at one of the recognised art schools in the United Kingdom), which shows (a) the best general knowledge of the principles of architecture in relation to design, or (b) the best scheme of colour decoration as applicable to the interior of some existing building. Such design to be submitted, and such competition to be open to the same candidates as are, in accordance with the rules hereinbefore provided in the case of the travelling studentship competition, so far as applicable. The bronze medal of the Institute will be awarded to a working painter, apprentice, or improver in the employ of a member of the Institute for the best executed panel not less than 2 ft. in area, to be submitted in accordance with the rules hereinbefore laid down for the travelling studentship competition so far as applicable. A printed form of certificate will be given with each medal, stating the grounds upon which the same was awarded as appearing in the medal register of the Institute.

The Selby R.D.C. has appointed Mr. J. H. Blenkinsopp as architect for its housing scheme.

The Thames Conservancy Board have arranged to have a number of the old lock-houses rebuilt this year, some of which were erected in 1714.

The Braintree R.D.C. has adopted the layout plan prepared by Mr. A. T. Lloyd, the architect, for ninety-one workmen's houses on the site between East Street and Crossing Road.

A five-day week now prevails in the building industry in Seattle, Washington, the action of the Building Trades Council, representing about 6,000 workers, having been put into effect. Similar action is expected soon in Tacoma.

For the laying of the foundations for the proposed Nurse Cavell memorial in St. Martin's Place, the tender of Messrs. Mowlem and Co., Ltd., Grosvenor Wharf, Westminster, of £574, subject to variations in the cost of labour and materials, has been accepted.

The Perth T.C. has instructed Messrs. Smart and Stuart, W. Erskine Thomson and A. K. Beaton, architects, to draw up plans in connection with three building sites in Craigie, Dunkeld Road, and Scone Road, which will provide accommodation for 300 houses.

Our Office Table.

Four firms had been invited to tender for repairs and decorative work at the Kingston-on-Thames Cemetery, but it was reported at the meeting of the Burial Board that only one replied, and that firm stated that, owing to the scarcity of labour, it was impossible to tender. Alderman G. Huckle declared that many men would not work, although doing nothing. Only the previous day he was told a gardener said to a man who wished to employ him, "I am getting £2 13s. a week out-of-work benefit, and I can't come to you unless I am paid 12s. a day." The cemetery superintendent said it was impossible to get repairs done, because men were being paid to do nothing. A man who was asked to repair a fence refused on the ground that he was drawing £3 9s. 6d. a week in out-of-work benefit for himself and allowances in respect of his children.

Sir A. Geldes, in reply to Mr. Lambert (South Molton, L.), last week, who asked whether he had received a protest from the Federation of South-Western Newspaper Owners against the order restricting the import of paper from abroad and compelling paper users to purchase 80 per cent. of their supplies from British mills; and what reason there was for such restrictions except to afford protective privilege to concerns which had not had the enterprise to install and use up-to-date methods and machinery—said he had received the protest. The regulations against which the protest was directed were based upon the unanimous recommendations of the Paper Industry Inquiry Committee, upon which producers and consumers were represented in equal numbers. They formed, in his opinion, as satisfactory and equitable a solution as was possible of an exceedingly difficult problem; and they were, he believed, generally accepted as such by the different interests concerned. The object of the present regulations was to safeguard the industry for a limited period, in accordance with the transitional trade policy which was designed to give an opportunity of re-establishing normal conditions—the "object" is a veiled pretext for taxing every newspaper in the Kingdom (and incidentally, its readers), to put money into the pockets of a close ring which has exploited us all up to the hilt during the war.

In a paper read before the Royal Archaeological Institute last Wednesday afternoon on the history and evolution of the chalice, Mr. W. W. Watts said the Cup used by Christ at the Last Supper was declared by one authority to have been a two-handled vessel made of sardonyx. Another version declared the Cup to have been of silver. St. Jerome, however, reconciled this apparent discrepancy by pointing out the probability that Christ employed two cups. In the early days of the Church chalices made of precious metal were commonly in use. Both at Ely and St. Albans were set up schools of workers in precious metals, and at Ely in 1074 William the Conqueror was presented with a sum of money made from melted-down chalices. In the possession of the Royal Irish Academy was a unique chalice, discovered in a village in Co. Limerick. The chalice was made of gold, silver, bronze, and enamel, and was adorned with fine filigree work. The lecture was illustrated by lantern slides showing the work of European goldsmiths through ages marked by the production of artistic chalices.

An expert committee has been appointed to consider suggested alterations to Hampton Court Gardens. The personnel is as follows:—Sir Aston Webb, President of the Royal Academy, chairman; Colonel F. R. S. Balfour, nominated by the Royal Horticultural Society; Mr. W. Watson, Curator of Kew Gardens, nominated by the Director; Mr. Robert Wallace, landscape gardener; Miss Wilmott, gold medallist of the Royal Horticultural Society; and Mr. Ernest Law, the historian of Hampton Court. The President of the Royal Academy has consented to act as chairman of the committee. Sir A. Mond invited another well-known

architect and landscape gardener to serve, but has not yet received his reply. The terms of reference will be:—(1) Whether any suggested alterations to the Hampton Court gardens are desirable. (2) If so, what changes the committee would recommend for my consideration.

New housing schemes submitted to the Local Government Board during the week ended May 31 numbered 50 per cent. more than in any previous week. Three hundred schemes in all were submitted. Of these, 295 are promoted by local authorities, and seven by Public Utility Societies. In 267 of the schemes the area is stated, and amounts to 2,139 acres. The total number of schemes submitted to the Board is now over 1,900 representing roughly 25,000 acres. At an average of ten houses to the acre, the schemes provide for a quarter of a million houses. Conspicuous among the schemes submitted during the week are those from local authorities in outer London. The Bexley Heath Council's schemes cover 230 acres, which would give room for nearly 2,500 houses. A scheme from Merton and Morden covers 103 acres, representing about 1,000 houses. Other schemes from the Home Counties are promoted by the Amersham (56 acres), Hanwell (40½ acres), Surbiton, Ilford and Marlow Councils.

The principal Belgian window-glass factories have formed a co-operative association, with a central office at Charleroi. Thirteen leading factories have joined this new organisation, the object of which is to further in every way the purchase of all machinery and materials necessary for the re-establishment of the industry, and to push publicity of its resources at home and abroad, and its ability to supply at reasonable prices and promptly. The minimum amount of capital has been fixed at 224,750 francs, and this has been divided into 8,990 shares of 25 francs each, which have all been subscribed to and a first payment of 10 per cent. has been made. The principal Belgian window-glass manufacturers belong to this organisation and have been named on the board of directors.

The Dean and Chapter of St. Paul's have approved a design submitted by the Kitchener Memorial Committee, of which the Earl of Plymouth is the chairman, of a special Memorial Chapel, which is to be constructed in St. Paul's Cathedral. The Chapel is to be situated at the base of the South-Western Tower, at the entrance to the Cathedral. The architecture is entrusted to Mr. Detmar Blow and the Cathedral architect, Mr. Mervyn McCartney. Special features will be the recumbent figure of Lord Kitchener and an altar with the figures of St. Michael and St. George.

Room XXIV. of the National Gallery, containing the masterpieces of Turner, Crome, Constable, and other masters of the early part of the Nineteenth Century, was open to the public last Saturday. A recent acquisition was also on view for the first time in Room XXV., namely, "The Beaumont Family," by Romney, which has been purchased by the Trustees with the help of a grant from the Government.

The Trustees of the National Galleries of Scotland have been left the residue of an estate, the net personality of which is £67,403, on condition that they hang the painting of a dog which belonged to the testator in a conspicuous place in one of their galleries.

Sir Charles T. Ruthen, O.B.E., M.S.A., upon whom the King has conferred the dignity of Knight Bachelor, in the Birthday Honours List, is a member of the Council of the Society of Architects, and also acts in the capacity of hon. examiner to that body. He has for many years taken an active part in the public life of Wales, and is an authority on housing problems. In January, 1917, Sir Charles—or as he then was, Mr. Ruthen—was appointed, together with Sir Leonard Powell, an inspector to the War Cabinet Committee on Accommodation, and in February, 1918, he became chief inspector to that Committee, and, in addition, Deputy-Controller for the whole of the London area. These positions he still holds in an honorary capacity.

FOR
Olivers'
Seasoned
Hardwoods,
APPLY TO—
WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.

TENDERS.

*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender: it adds to the value of the information

BARNES. For repairs, etc., to cottages in Merthyr Terrace, Barnes, for the Metropolitan Water Board:—

Chapman and Sons*	4126 10 0
Cook, F. T.	167 0 0
Clarke, G. W.	178 10 0

* Recommended for acceptance.

CHESTERFIELD. For erection of 26 houses for the working classes, for the Chesterfield Corporation:—

Mauls, W., and Co., Nottingham	122,500 0 0
Kirk, G. F., Ltd., Chesterfield	21,045 2 4
Webber, G., Chesterfield	21,343 18 0
Charlesworth, R., Ltd., Sheffield	24,002 12 3
Tesbury, G. S., and Son, Ltd., Sheffield	25,315 15 6

DERBY. For alterations and additions to the English Baptist Church, Derb. Mr H. G. Jones, Bank Chambers, Henwood, architect:—

James, E., 3, Delwyn Avenue, Henwood, Cardiff	£1,503 0 0
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Accepted.

HACKNEY, N.E. For sub-station buildings extension, for the borough council:—

Marrable, R. N., and Sons, Leytonstone*	£5,017 0 0
Jones, W., and Sons, 64, Victoria Street, S.W.	5,878 0 0
Roberts, L. H., and R., 141, Lower Clapton Road	5,930 0 0
Hughes, R. M., 13, St. Dunstan's Road, W.C.	5,961 0 0
Shurmer, W., and Sons, Ltd., Upper Clapton	6,003 9 0
Hilday and Greenwood, Battersea	6,291 0 0
Rome, E. A., and Co., Homerton	6,366 0 0
Salsbury, H., and Sons, Ltd., Harpenden	6,763 0 0
Silk, W., and Son, Ltd., Homerton	7,222 0 0
Arding and Hobbs, Ltd., Clapham	7,896 17 5

* Recommended for acceptance.

HENDON. For erection of new factory for Messrs. Garstin and Co., Ltd. Mr. H. Holmes, 5, Rosemont Terrace, High Road, North Finchley, architect:—

Linzell, F. L., 309, King's Road, Chelsea	£6,113 0 0
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Accepted.

LEICESTER. For the erection of a temporary structure adjoining the Hosiery and Textiles Department, for the education committee:—

Kellett, J. C., and Son	£1,595 0 0
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Accepted.

LIVERPOOL. For erection of buildings, comprising one two-storey reinforced concrete warehouse, two one-storey brick and steel warehouses, large welfare building for 2,000 employees, and a two-storey office block, in connection with the erection of a match factory at Garston:—

Huntingdon, F. D., Ltd.	Accepted.
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SEVENOAKS. For the erection of 10 pairs of cottages at Greatness, for the U.D.C.:—

Bentley, C., and Son, Sevenoaks*	£8,500 0 0
The Garden City Housing Co., Victoria Street, London	9,452 5 0
Erngham and Son, Dartford	13,500 0 0

Accepted.

SOUTHEND-ON-SEA. For laying surface water sewer in the main London Road, for the corporation:—

Hos, W., and Son	£2,245 0 0
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Accepted.

SURBITON. For repairs at Ramdagh House, Surbiton, for the Metropolitan Water Board:—

Gaze and Sons*	£74 13 0
Powley Bros.	89 0 0
Offer and Sons	89 10 0

* Recommended for acceptance.

TOYHAM. For repairs to cottage at Ferry Lane Pumping Station, Tottenham, for the Metropolitan Water Board:—

Almond, H.*	£70 0 0
Webb, A.	93 0 0

* Recommended for acceptance.

WEST HAM. For school works, for the West Ham Education Committee, Knox Road Special School, Completion of building:—

Hosking, G. and L.	£2,750 0 0
Maddison, W. J.	2,747 0 0
Luton, J. T., and Son	2,725 0 0
Symes, A. E.	2,705 0 0
Webb, A.	2,635 0 0
Clemens, W. J.	2,500 0 0
Horswill, H. C.*	2,498 0 0

* Recommended for acceptance.

CHIPS.

The Kew local war memorial will take the form of a social institute to be built in Kew Road, at an estimated cost of £6,000.

The West Ham T.C. is recommended to pass plans submitted by Holloway Bros. for additions to the premises of Venesta, Ltd.

Mr. E. G. Bates, a retired builder, of Croydon, is giving £3,000 to provide small pensions for the deserving blind of the town.

It is the intention of the Government to submit to Parliament next session a Bill to vest all the sources of water supply in the State.

The local committee is hoping to raise £25,000 for a war memorial, which may take the form of an institute and public hall at Dartford.

The King has signified his intention of conferring the honour of knighthood on Thomas Sims, Esq., C.B., Director of Works, Admiralty.

The local committee has approved plans, prepared by Mr. Thomas Richard, of Messrs. Richards and Mathews, for the Landore Memorial Hall.

The Alwick U.D.C. has accepted the offer of the Assembly Rooms as a gift from the Duke of Northumberland, for its conversion into municipal offices.

Subject to certain amendments in the plans, the Carlisle Consistory Court has granted a faculty for alterations in the interior of St. Mary's Church, Carlisle.

Mr. E. B. Barnard has been re-elected chairman of the Metropolitan Water Board for another term of three years, and Mr. F. L. Dove is appointed vice-chairman.

Plans have been prepared by Messrs. Marshall and Tweedy, Newcastle-on-Tyne, for extensive premises in Pilgrim Street, for Cooper, Ltd., warehousemen, Manchester.

Hull Housing Committee reports that the Northern Association of Brickmakers has been informed by the Government that all bricks for housing schemes will be purchased by the Director of Building Material Supplies and allocated to local authorities as actually required.

LIST OF TENDERS OPEN.

COMPETITIONS.

June 16.—The Beverley War Memorial Committee invite designs in competition for a war memorial, to be erected at a cost not exceeding £3,000. A professional assessor has been appointed. Further particulars of L. Huntley, The Public Library, Beverley.

July 14.—£25 premium offered for designs for a War Memorial at Penzance, cost not to exceed £2,000. C. E. Venning, 58, Morrah Road, Penzance.

No date.—For laying out estate and designing working-class dwellings thereon for the city of Nottingham. Premiums of £350, £100, and £50 respectively for first, second, and third premiated designs. Conditions and place of site for one guinea, returnable on application to W. J. Board, Town Clerk, Guildhall, Nottingham.

BUILDINGS.

June 11.—Completion of new school buildings (now partly erected) at the Grammar School at Nantwich.—Plans and specification can be seen at the offices of H. Beswick, F.R.I.B.A., county architect, Newgate Street, Chester. Tenders to R. P. Ward, Director of Education, Chester.

June 16.—For 20 houses at Yeading, Hayes, Middlesex.—For the Hayes Urban District Council. Tenders to be sent to D. C. Fidler, architect, at the Council offices, Grange Road, Hayes.

June 16.—New shop front and alterations to No. 74, Duke Street, Barrow.—For the Barrow Co-operative Society, Ltd.—H. T. Fowler, A.R.I.B.A., 6, Cornwallis Street, Barrow, architect. Tenders to the Secretary, Co-operative Society, Abbey Road, Barrow.

June 17.—For semi-detached cottages, for the Welwyn Rural District Council, viz., six at London Road, Welwyn, six at Woolmer Green, and eight at Station Road, Digswell. Bills of quantities, etc., from T. E. Moore, the surveyor, Mill Lane, Welwyn. Sealed tenders to P. R. Longmore, Deputy Clerk, 24, Castle Street, Hertford.

June 20.—Twenty-one cottages at Eldon Street, Canton, Cardiff, and neighbourhood.—For the Corporation.—E. J. Elford, M.I.C.E., city engineer, City Hall, architect. Tenders to the Town Clerk's Office, City Hall, Cardiff.

June 24.—Erection of general stores, forge, machine shop, smiths' shop and conveniences, at Faverdale, Darlington.—For the North-Eastern Railway Co.—Plans and specifications may be seen, and quantities obtained upon application to A. Pollard, the company's architect, York. Tenders to R. F. Dunnell, secretary, York.

June 26.—Erection of 60 houses, and the construction of roadways, footpaths, sewers, etc., required in laying out the site, at Whitehaven.—For the Whitehaven Town Council.—J. S. Stout, 35, Lowther Street, Whitehaven, architect. Tenders to E. B. Crossdell, town clerk, Town Hall, Whitehaven.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

Rates for Trade Advertisements on front page and special and other positions can be obtained on application to the Publisher.

RECEIVED.—M. Co.—E. P. A. and Co.—T. B. B., Ltd.—A., Ltd.—I. C. S.—R. and H.—M. R. and Co.—L. F. Co., Ltd.—F. A. N. and Co.—B. and P.

SHARON.—No.

D. L. S.—Please send.

SEPTIMUS.—We see no reason to the contrary.

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AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

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Records of the Great War, Royal Academy,	
1919. Elevation and plan. Captain B. Neville-	
Smith, Architect.	

Strand, W.C.2

A Small House in London for Mrs. Charles Hunter,	
1919. View and plans. Mr. Philip Tilden, Archi-	
tect.	
War Memorial and Roll of Honour, Tottenham.	
The original design altered in execution. Maurice	
B. Adams, F.R.I.B.A., Architect.	
Hygienic Cottage Furniture at Shoreditch. De-	
signed by Mr. P. A. Wells, and made in the	
Technical Day School, Pitfield Street, N.1.	

Currente Calamo.

Mr. W. J. Willcox, the architect to the Somerset Standing Joint Committee, in a letter to the *Morning Post* of the 11th inst., says that his Housing of Police Committee recently opened three tenders for a police cottage out of an invitation to thirteen contractors, some of whom have done much work for the county. The tenders were £1,643, £1,300, and £1,260 respectively. The ten other contractors would not tender. And this was for a plain, unornamented single cottage of two storeys, to be built of brick and covered with tiles. The cottage was to contain a living-room, small sitting-room, wash-house, food place, coal and bicycle place, and three bedrooms, each with a fireplace. There is no sewer in the village, therefore the plumbing costs were negligible. Just before the war, Mr. Willcox says, he carried out a similar cottage in another Somerset village, the cost of which, with boundaries, was £330. The police rent contribution is £5 per annum. In the absence of more details the prices quoted certainly seem high, and if, without reason, they become general building will not improve much. That it is still possible to build economically seems apparent from a tender accepted by the Luton Rural District Council for a cottage housing scheme in concrete at £350 per cottage. Mr. Gordon Allen, F.R.I.B.A., also, in a letter to the *Times* of the same date, gives some particulars of the Crayford Garden Village, of which he was the architect, and where 400 cottages were built in concrete, each containing a living-room, parlour, bath, and either three or four bedrooms; the average cost per house, including all fees and charges, road-making, sewerage, drains, fencing, etc., being £325 complete.

Mr. Gordon Allen says quite truly that concrete houses can undoubtedly be as artistic as those of any other kind, for no building material is more adaptable. Naturally, Georgian brick architecture cannot be reproduced in concrete; but away from clay-bearing districts houses of this style often appear to be jarring and out of keeping with local tradition. And it is in such parts of the country where the use of bright red brick-work would offend nature—as well as the neighbours—that suitable aggregates for

concrete are usually found. This gravel or broken stone, after having been converted into concrete blocks, will produce walls possessing charming colour effects. Concrete walls, too, can becomingly be clothed with pleasantly textured rough-cast, to “weather” into soft shades with the passing of the seasons. We are not so sure as Mr. Gordon Allen is that time and labour are *always* saved by using concrete blocks. It is quite true, as he says, that one 16 in. by 9 in. by 9 in. block is equivalent to 10 bricks, but blocks of that size use a lot of material, and cement is very dear, and so are the machines used to make them. For the full benefit of concrete from the point of view of cheap and desirable construction we incline to some system that, with thin walls, will economise space and ensure permanent stability. Given these, the range of concrete building will widen in pleasurable contrast with the phenomenal expansion of the cost of labour and materials that bids fair to paralyse building—except, of course, at the cost of the taxpayer—mostly for other people, while he seeks a home in vain!

The little project of the Tunbridge Wells Town Council for the erection and letting of sixty houses under the national housing scheme gives a representative illustration of what such municipal enterprise means in pounds, shillings and pence, and some of the salient figures in connection therewith are profitably summarised by the *Estates Gazette*. We fear the results are but too likely to be repeated in many plans worth quoting. The estimated capital expenditure on the three score houses, at present-day prices, is put at £50,045, of which £1,250 is estimated to go for land (rather a high price for 6½ acres), and £41,400 for the building of the houses (£690 each), including drainage and water supply, sewers and water mains being put down for £2,950, street works £3,245, and fencing, etc., £1,200. On this capital basis the estimated annual expenditure is £3,030, repayment of principal and interest in respect of the borrowed capital, and this will be brought by rates, taxes, insurance, repairs and management expenses up to £3,809 9s. As the houses are designed to let at 10s. per week, the total yield from that source will be £1,513 4s. (after allowing 3 per cent. off for empties and irrecoverables), leaving an annual

total deficiency of £2,296 5s. The borough surveyor of Tunbridge Wells, in the course of a preliminary report, has estimated that the increased cost of building at the moment is probably about 110 or 112 per cent, above pre-war figures, and he reckons that the cost will be approximately £690 per house (as compared with £330 pre-war price). When the scheme was before the Council the opinion was expressed by one of the members that the capital expenditure might even reach £60,000, and that to let the houses at 8s. per week would not be advisable, for even a rent of 10s. would be attended with a loss of £38 on each house per year, whilst the real economic rent would be about 25s. per week. It is fortunate from the local ratepayers' point of view that the loss only partly falls upon Tunbridge Wells, for otherwise the situation would have been intolerable, seeing that the vast bulk of the ratepayers are occupiers of small houses and would have had to be rated (and will even now be rated to some extent) to provide better housing accommodation than they enjoy themselves for householders who are quite as well able to pay economic rents as themselves.

In common fairness the next State Housing Scheme *must* include the lower middle classes, to begin with, and, once on the road, we do not see that dukes and other impecunious noblemen can be excluded. Many of them will be “homeless” after the disposal of their mansions, the sales of which are proceeding merrily enough. What shall we all do, except live by taking in one another's washing, when the State has become the universal provider, and while it can find any section of its citizens left with anything to skin them of in the way of taxation? The one chance left is for the new Ministry of Health to set to work to breed a race that can revert to Paradiseal conditions, and wear fig-leaf aprons and chew a rationed apple now and then in the intervals of blissful contemplation or wrapt imagination, dreading only the only punishment that will doubtless be inflicted—the instant electrocution of every being that dares to commit the capital sin of private enterprise. We commend to Dr. Addison the renewed and constant study of the best text-book for all students of the requirements of such a model community—Gulliver's description of Laputa.

We are glad to see that the report is contradicted that the Duke of Abercorn was about to sell his estate and emigrate to South Africa. But it would not in the least have surprised us had he done so. We know that not a few of the hundreds of people of wealth and position who are at the present time parting with their property by hundreds of acres at a time are doing it with the feeling that trouble is coming, and that it will be easier to carry cash than real estate to one or other of the British Dominions, where life is easier and pleasanter, and a man has not to pay half his income in income-tax and the rest in death duties and increment values. Moreover, there are, in the great self-governing States, far better opportunities of giving children a fair start in life than at home, and while they have to be kept every requisite of family life is cheaper—and so is education and better. And, presently, when the next period of unemployment comes along—hastened by the enormous increases in the cost of labour and the extortion of the profiteers, the best of the bone and muscle of Britain will follow the brains to the Dependencies and to America, and leave the aged and the incompetent to meet the crushing demands of the Chancellor of the Exchequer and the local rate-makers as best they may. The profiteers will find that they have driven out of the country their best customers—the well-to-do on the one hand, and the cream of the masses on the other, who spent lavishly till funds failed and homes had to be stripped to find the scanty meal alone possible after the heavy rent has been somehow scraped together.

The wanton way in which building operations are being impeded, while people are clamouring for houses, is really too bad. Inquiry by the *Liverpool Daily Post* into the reason why sixty semi-detached houses at Liscard, commenced upon before the outbreak of war, are not now completed and ready for occupation shows that the building is held up for the simple reason that the builder himself is held up, and some 300 people who could otherwise be soon comfortably housed in these sixty dwellings are kept homeless because all attempts to obtain the release of the mainspring have so far proved unavailing. The Rullerton estate, which lies between Mill Lane and Marlowe Road, close to both tramway and railway, was being developed by Mr. T. S. Roberts when war broke out. Some pretty little pebble-dashed and semi-detached houses with small gardens were completed along several roads and avenues, and all are occupied. When sixty others in Eric Road and Franky Avenue had been commenced upon and more or less completed, Mr. Roberts was, in March, 1915, called up, and the eighty men he employed were taken off the work. Mr. Roberts, who is thirty-nine years of age, and whose wife and children reside in one of the finished houses, is now in Egypt. His father, Mr. Owen Roberts, also a builder on his own account, is in ill-health and unable to proceed with his son's work. This, among other arguments, including the one that the work

required to be done is of urgent national importance, has been used, but so far without avail. Mr. T. S. Roberts remains in Egypt, and the building of these houses continues to be indefinitely postponed. The half-built houses, it may be added, stand more to the acre than present Local Government requirements.

The remarkable revolution now going on in the law of landlord and tenant as to dwelling-houses is causing some confusion in our country county courts. In London the Judges of the High Court follow each other's rulings, and apply the Increase of Rent Acts, 1915 and 1919, freely, and in their true spirit. But in many quiet country districts the old feeling and sympathy for landlords and the land laws still holds its own, and sometimes sways the county court judges in their use of these amazing Acts. For this reason, the decision of the Lord Chief Justice in the recent case of "Nathan v. Hart" is likely to have a startling effect in these out-of-the-way places. The plaintiff's action was for possession of a house at Cricklewood, of which defendant was tenant. He had bought the house for £850 on March 25, 1919, when defendant's formal tenancy was to expire. Plaintiff now wanted the premises for his own occupation. Defendant pleaded the Acts. She said that the plaintiff, as new owner, had agreed to allow her to remain, and declared she could not get another house to move into. The Acts applied, because the house had been bought for plaintiff since September 30, 1917. Lord Reading believed defendant's story, and held that, under Section 5 (2) of the Act of 1919, after considering all the circumstances, "including especially the alternative accommodation available for the tenant," he must enter judgment for the defendant as the tenant, with costs. So this purchaser has the house, which he bought "with possession," but he cannot yet use it for his own occupation, which was the very purpose of his purchase. Certainly, a startling result of our emergency legislation!

A readable two-shilling-worth, by Mr. Ernest Law, which has just been issued by Messrs. G. Bell and Sons, Limited, of York House, Portugal Street, W.C., on the Chestnut Avenue in Bushey Park, will be perused with special interest just now, when another architect of pre-eminence in his calling has been called upon to preside over the committee of inquiry into the best means of preserving and enhancing the amenities of Hampton Court Palace, and its surroundings. Mr. Law establishes it as a fact that Wren not only laid out Bushey Park. It is also, unfortunately, a fact that Wren's design for the Chestnut Avenue—exactly one mile in length—has been during the last 150 years spoiled by the reduction of its width to about 50 ft., and, moreover, thus narrow, has been raised about a foot and a-half above the ground on either side of it, impairing the general effect disastrously. It is also to be lamented that Wren's grand scheme for a magnificent new entrance to the palace itself was abandoned by Queen Anne, who, says Mr. Law, "cared nothing for build-

ing or architecture, and little for gardening, and who thought more of a good cup of chocolate or tea than all the art in the world." Towards the end of her reign, however, an attempt at some sort of a satisfactory finish was made by the erection of the two massive piers of Portland stone surmounted by the carved figures of lions, the gates between which were brought thither from the garden entrance to the Home Park in the reign of George I. The "Diana" Fountain was another of Queen Anne's "improvements," originally acquired by Charles I., and a beautiful piece of sculpture, it formerly occupied the centre of a small basin in the "King's Privy Garden," fitting it in size and scale, whereas where it has now stood for 210 years its value as a work of art is impaired by its misplacement in inappropriate surroundings. Mr. Law thinks Sir Aston Webb missed a hint from Wren in the proper arrangement of his trees in the Avenue in the Mall leading up to the Victoria Memorial, with the result that the last four or five trees in the inner row already obstruct the view of the pylons surmounted with the boys inscribed "South Africa" and "West Africa," and that "the sooner they go the better." Mr. Law's brochure is beautified by a portrait of Wren, reproduced from the Royal Collection at Hampton, by some of Wren's original designs and plans, and some views, ancient and modern, in the Avenue.

We still receive complaints of the difficulty of obtaining chance copies of this paper. We have repeatedly explained that this is no fault of the news-vendor, and that as no returns of unsold copies are taken by us, he will only order copies for regular customers. Wherever it is found impossible, then, to get the paper punctually and regularly, we will send it weekly, for any period, post free, at the published price, sixpence per copy. The reasons for the discontinuance of the pre-war practice of accepting returns of unsolds are the renewed and continuous increases in the printers' charges, which have this month been advanced by another 5 per cent., making 115 per cent. above pre-war prices, and the still heavy cost of paper. We have also to ask the indulgence of advertisers when compelled to omit their advertisements by the consequent limitation of our space.

Mr. H. Vale, of Wolverhampton, has been appointed quantity surveyor for the proposed housing scheme on the Hall Park Street site, Bilston. It is proposed to erect thirty-eight houses.

A proposal at the Baptist assembly in Sunderland to establish the cause in Durham City was opposed on the ground that this was impossible and unnecessary, as the city already contained more churches than it knew what to do with.

The spire of St. Stephen's Church, Vincent Square, Westminster, has been condemned as a dangerous structure, and preparations are being made to take down a part of it at once. The church was founded by the late Baroness Burdett-Countess in 1850 as a memorial to her father, Sir Francis Burdett.

In the members' private lobby at the House of Commons there are four pedestals, of which three still await the statues they are meant to carry. Sir William Harcourt presides in solitary majesty over the scene. It is now suggested that a second pedestal should be given to a statue of Mr. Joseph Chamberlain.

PROTECTION FOR THE UNFIT AND LAZY THE CAUSE OF RISING PRICES.

In spite of Whitley Councils, Industrial Leagues, and the plain speaking of the responsible trade union leaders, it is more and more evident that the resolve of the less wise is to force still further and further increases of wages, without increase of output. The masses, who are still blind to the fact that each rise simply means another addition to the prices of the indispensables of life, of which they are the greatest consumers, with a trifle added for himself by the profiteer, refuse stoutly to increase output, and unite to keep production down to the capability of the partially competent workman and the shirker, and unscrupulously break treaties with their employers when it suits them.

Take the case of the miners. The average output of coal by 1,111,000 persons employed for 1913 was 287,412,000 tons, giving an average output per man per four weeks of 19.8 tons. The estimated output for 1919, based on the figures to the end of April, upon 1,124,000 persons working, is 228,257,000 tons, and during the week ending April 24 the average output per man per four weeks was 15.4 tons. The last big wage increase took effect that week, all arrears having been paid prior to that date. The promptly following result has been a heavy addition to the price of coal, already dear enough in all conscience; but that probably troubles the miner very little, as he gets his coal for nothing, and a lot of it.

In other great industries of which we have inside knowledge things are little better. In the printing trade wages have increased 115 per cent. above pre-war prices, and the output in two typical newspapers is less than one-half. We should be surprised to learn that the printer is really any better off; he, like the rest of us, is paying through the nose—or the mouth and back rather—for the benefit of the partially competent or lazy workman, when he himself, if he were allowed, might fairly earn more than he gets, even at the increased minimum, and in less time.

In the building trades things are as bad, and "ca'anny" rampant; and the growing disposition to disregard all agreements with the employer really scandalous. If the present gross instance at Liverpool catches on, and we fear it will, we should not be surprised to see a lock-out throughout the kingdom. The joiners came out on strike there on June 6, and the plumbers last Friday. The full facts deserve the closest study.

The operative plumbers and joiners served six months' notice last October on the Liverpool Master Builders' Association, in accordance with the rules, for 6d. per hour increase, and the other branches of the building trade did likewise. In addition, the Liverpool branch of the National Federation of Building Trade Operatives served a similar notice on behalf of all branches of the trade. In view of this latter demand, the Secretary wrote to the operative plumbers and joiners in November last asking them when the time came for the matter to be discussed whether his association had to treat with the operatives' federation or the plumbers' and joiners' societies, and these societies wrote back stating that he had to negotiate with their federation.

Just about this time the North-Western Federation of Building Trade Employers (which covers the whole of Cumberland, Westmorland, Lancashire, Cheshire, North Wales, and North Derbyshire, and

to which federation the Liverpool Master Builders' Association is affiliated) negotiated with the National Federation of Building Trade Operatives with regard to the formation of what is now known as an area scheme, and a Centre Area Council, consisting of twenty-six employers and twenty-six operatives, was set up to settle the wages for the whole of the area covered by the North-Western Federation, which took the place of previous machinery whereby each town settled its own wages, and these wages were settled by the council on February 19 last, except for Liverpool, whose demands were considered by this Centre Area Council on April 25, when it was decided by four cross votes from the operatives' side that the Liverpool wages should not be increased. This decision under the rules was final.

The operative plumbers and joiners evidently contend that they are not now parties to this area scheme, but they are still members of their federation, and the federation distinctly stated at the meeting of the Centre Area Council on April 25 that they represented the plumbers, and the joiners' representative stated that they were not satisfied with the decision but would honourably abide by it.

The operatives complain that the Liverpool Master Builders' Association will not meet them, the reason being that it cannot meet them on a demand that has already been settled; otherwise by meeting them the Association would admit that there are legitimate demands in existence that have not been dealt with. If the plumbers and joiners have any grievance at all it is with their own federation and not with the Liverpool Master Builders' Association.

The position at the present moment is that a new constitution has been set up, very strongly supported by the Operatives' Federation and agreed to, for the settlement of the wages in all branches of the building trade throughout the North-Western Federation area, and hundreds of men in all branches of the industry in the lower-paid districts have had as much as 6d. an hour advance since March 1. It has been decided by the decision given on April 5 last that Liverpool should not receive any more money per hour, but the decision gave to the Liverpool operatives a fixed wage of 1s. 8d. per hour to the skilled tradesmen, whereas 2d. of the same up to that decision was only a war wage granted by the Court of Arbitration.

The whole of the rates fixed by the Centre Area Council have been registered by the Ministry of Labour and are now the only rates for the district recognised by Government. The public, through the differences, are bound to be put to considerable inconvenience, whether the job is a small one or a large one, we trust that every person likely to suffer inconvenience will put up with it in the interests of constitutional government relating to employers and employed, as otherwise chaos would follow.

The position, in a few words, is that the wages for Liverpool have been settled by the agreed authority, and any branch of the building trade objecting to the position is placing itself in a similar position to a person who, having had a decision given against him by the House of Lords Appeal Court, demands a new trial.

That means anarchy at once and national bankruptcy in the near future. Every workman who is wearily waiting for a home should bear in mind that if the trouble spreads the delay of the Housing scheme, which is not progressing very quickly, will be due in the first place to the pragmatic perversity of the Liverpool joiners and plumbers.

Is there no remedy for all this? None, in our opinion, unless an example of independence and loyalty to the common good is shown by the better informed of all classes. Not many weeks ago the London representative of one of the great engineering works in the provinces was making his usual call at a large engineering factory which during the war has been producing war material largely, and was struck by the indifference of the owners to the evident necessity of moving with the times. The customer confessed that his firm was simply waiting to see what was going to happen, and whether it was worth while keeping going at all. Asked why, he said the labour difficulty was the chief trouble; and, taking his visitor into one of the shops, bade him notice one of the men working at an automatic lathe, by which pieces of metal were being turned out with little attention from the man, true to gauge and perfectly ready for their use. Nothing was said till they left the shop, when the visitor said, "He takes a long stop between each piece." "Exactly," said the owner; "as you know—for you made us the lathe—once the perfect accuracy of the first piece turned is tested and established—which takes time—there is no need at all to repeat the same stoppage with each of its successors." "What does the man get a week," asked the visitor. "Four pounds," was the reply. "Well, then," said the visitor, "you give me twelve pounds a week—that's three times his money, and I'll give you five times his output per week." "Ah!" said the owner, "I wish I could! But you know what would happen at once!" "A strike, of course?" "Yes."

"And yet," said the visitor, who is a skilled engineer, to us, "I could teach any of the many young demobilised officers I see are advertising piteously for jobs in the papers, in six months to do all, and more, that the man was doing, and to be well worth three times his money. Isn't it a pity there are no such men of his sort ready and willing to take work of the sort on, and encourage a few dozen anyhow of decent employers to show the world how willingly they would pay good wages for value received?"

We thought so, too, and that no national "technical education" is worth much that does not make the competence and opportunity to prove it its basic planks.

The pre-Reformation Lady-chapel at Thame's Ditton is to be restored as a war memorial.

The people of Poynton, Stockport, have decided to build a public hall as a war memorial. Lord Vernon has promised a site.

It has been decided to build a combined Sunday-school and parish-hall in connection with St. John the Baptist Church, Westtown, Dewsbury.

The Chisbury R.D.C. has inspected sites for housing schemes at Worthen, Chisbury, and Brompton Rishton. Mr. E. Davis, of Carno, has been appointed architect.

The Maybole T.C. proposes to acquire a site at Dimcullan for the provision of fifty new houses, and has appointed Mr. James Kennedy Hunter, of Ayr, as architect for the scheme.

A sub-committee of the Rowley Regis U.D.C. has been appointed to inspect land and to give instructions to the surveyor to prepare plans and estimates of cost for erecting public buildings there, including an office, shedding, a fire station, and a caretaker's house.

The Galashiels Town Council have adopted plans for a memorial to Galashiels men fallen in the war, embodied in plans prepared by Sir Robert Lorimer for an extension of the Municipal Buildings at an estimated cost of £16,000. Provision is made in the plans for having the names of the fallen heroes inscribed on bronze tablets in the vestibule of the building.

Our Illustrations.

AN IMPERIAL MUSEUM AND MONUMENT OF RECORDS OF THE GREAT WAR.

The design here shown from the drawing now at the Royal Academy Exhibition provides for a museum to contain permanent and complete records of the war, together with a memorial in the form of halls of honour to hold sculpture and memorial tablets, the whole conception being a monument to the deeds of the British Empire. A half plan of ground and second floors is shown on the drawing. There are three halls of honour with galleries open to the grand stairways, one in the central feature and one in the centre of each end pavilion; the halls are connected by the museums. The end pavilions are devoted to public records, and a library for works and literature connected with and illustrating the progress of the war. The lower ground floor and archives which cover the entire plan is given up to official records. Picture and photograph galleries occupy the second floor. The general offices for administration being situated in segmental portion of the end pavilions above the ground floor. The main entrances are approached by an inclined carriage-way passing under the portico; on the other side the plan shows a broad balustraded terrace on the same level, and overlooking formal gardens on either side. The design is the central feature in a suggested reconstruction scheme in the metropolis. The architect is Capt. B. Neville-Smith, of Reading.

A SMALL HOUSE FOR MRS. CHARLES HUNTER IN LONDON.

The site is a very narrow one, although of great length, and it has hence been the object of the designer to utilise the total width for the rooms, arranging the staircase, lifts, and so on at either end, instead of having the usual passage hall. Symmetry has been attained in the plan, not with a view to forcing Palladian principles so much as to proving that it is the infallible solution to most planning problems.

The house contains a 6-ft. stone staircase and an ante-room; dining-room, 35 ft. by 20 ft.; great saloon, 50 ft. by 20 ft.; with the great staircase entering it at one end; 2 floors of bedroom suites each containing 2 bedrooms, 2 dressing-rooms, and a bathroom, and ample accommodation for seven servants. Mr. Philip Tilden is the architect. We reproduce his pen-and-ink drawing at the Royal Academy and give the plans of the house.

WAR MEMORIAL AND ROLL OF HONOUR, TOTTENHAM, N.

The mother parish of All Hallows, Bruce Grove, is erecting a triptic mural monument recording the names and allocations of Tottenham soldiers and sailors who lost their lives fighting in the great war. The work in course of execution is being done by Messrs. James Whitehead and Sons, of Kennington, from the design of Mr. Maurice B. Adams, F.R.I.B.A., the architect of the marble cartouche erected in the same church recently by Sir Herbert Nield, M.P., and exhibited last year at the Royal Academy.* The illustration given to-day, from the architect's working drawing, shows the original design adopted by the War Memorial Committee, to be carried out in marble, alabaster, and Portland stone, the cross and badges as well as symbolic carvings partly

gilt and heraldically coloured. The shaped surround verge to be in green marble. The drawing is self-explanatory, but owing to the considerable advance in prices, the scheme has been changed, though the mural space occupied by the cenotaph very closely corresponds with the detail reproduced herewith. The figure-work has been omitted, but the cherubs and scrollwork will be of Grinling Gibbons character, harmonising with the Stuart monuments in the same building. The lettering follows the original intentions. This parish church war memorial also comprises a proposed chapel to All Souls in the north transept, to be carried out from Mr. Maurice B. Adams's plans, including a wrought-iron grille screen between the chapel and the choir. The site for the Roll of Honour is in the south aisle near the main entrance to the church, instead of being situate in this chapel, as suggested at the outset.

HYGIENIC COTTAGE FURNITURE AT SHOREDITCH.

The main object of the recent exhibition held at the Technical Institute in Pitfield Street, Shoreditch, was for the purpose of suggestions and experiment in form and finish. It is not claimed that the furniture shown exhausts the possibilities of design and construction in furniture for cottage use. In so far as possible, the guiding principles in this cabinetwork were lightness coupled with strength, fitness for use, comfort, and ease in moving and cleaning. Cost of production was considered; consequently needless details, such as cornices and pediments on wardrobes, are advisedly omitted. Wooden drawer-knobs and racks for looking-glasses are employed in lieu of brass fittings. The dining-room types of chairs, dressers, and tables shown were stained brown and polished. The seats of the birch chairs are screwed or nailed to the curved back and front rails to form a concave seat insuring comfort, cleanliness, and strength. For the sake of experiment the designs were varied, avoiding as far as might be the appearance of kitchen chairs, but the main objects besides strength and pleasing character is facility for dusting and utility. The bedroom furniture is made of birch, kauri pine, and whitewood, but its design is equally applicable to oak. Space is left under the wardrobe to allow of the floor being cleaned, and on the top there are no pockets for dust. The panels are of "three-ply" grooved into the framing, the whole thing being light and readily moved about. The dressing table has a wooden support to the looking-glass in place of the usual screw centre. The two easy-chairs for the sitting-room, with adjustable backs, are made at the least cost possible, considering the conditions under which their manufacture was done. Loose cushions allow of cleaning both for the "sofa" and chairs. Small "what-nots" are contemplated for corner positions, as even cottages have things which harbour dust to keep somewhere for decorative or commemorative purposes. All this furniture was made by the elder boys in the technical day school from designs by Mr. P. A. Wells, head of the Cabinet-Making Department of the L.C.C. Shoreditch Technical Institute. Permission has been given for the designs to be used for commercial purposes on condition that manufacturers name the source from which the designs are obtained.

Old St. Pancras Church, in Pancras Road, which was erected in 1350, and formerly stood on the left bank of the Fleet, is to be restored at a cost of £3,000.

FOUNDATIONS IN BAD GROUND.*

The question of foundations and the supporting power of the various kinds of rock, earth, clay, and silt, met with in practice, is a matter of vital importance to all those who are engaged in the planning, designing and construction of important works in Architecture and Engineering. The architect is, broadly speaking, mostly concerned with the design of foundations for important buildings, which design as a rule only involves the bearing capacity and stability of the particular class of material on which he builds. On the other hand, the engineer, in addition to this type of foundation is often called upon to deal with the design of foundations for such structures as dock and river walls, retaining walls, bridge abutments, etc. The design of these structures involves not only the bearing capacity of the materials on which they are founded, but also the great lateral pressures often exerted by the retained materials on the back of these structures. The consideration of this latter type of foundation is such a vast subject that to deal with it only briefly would involve a great deal more time than is available this evening. It is, therefore, proposed to deal only with the first type, viz., "Foundations to Buildings," and chiefly those foundations which have to be built in bad ground.

When we consult professional literature we find that the subject is very poorly treated, and this in spite of the fact that faulty foundations have caused the partial or whole failure of numerous buildings. It is a rare thing to find, even after the most diligent search, any published information which will aid an Architect when confronted in practice with a particularly difficult foundation problem, calling for precise knowledge of the matter. Why this should be so is rather difficult to understand. Perhaps it may be due to the fact that people in general are interested in those things which they can see, and far less interested in those things which are concealed. Building foundations are concealed in the ground. There is no artistic beauty to recommend them to anybody, and numerous architects will, therefore, pay particular attention to the upper part of the building, whilst they are only too glad to forget everything which is below the basement floor.

When we consult the various building regulations, we find that they also are remarkably silent, and give the minimum of detailed information required for solving a difficult foundation problem. We might ask again why this is so, and perhaps the explanation is to be found in the characteristic of the Anglo-Saxon race to solve their problems by methods of induction. As new problems arise they are often approached in a spirit of conservatism, prohibitive rulings at times being applied in the early beginning, conservative permissions afterwards granted, and ultimately such freedom as is based upon extended experience as well as upon carefully-thought-out theories. While we, therefore, have often looked in vain in the past to professional literature and building regulations for precise information relating to foundation work and earth pressures, we should, each of us, I think, make an endeavour to remedy this as far as possible. A great deal can be done in this direction in two ways.

Firstly.—By recording in professional literature instances of difficult foundation work which come under our personal notice, the methods adopted to overcome them, and the success, partial success or failure of the methods adopted; and

Secondly.—By making definite experiments either in the field or laboratory or both, on the resistances and lateral pressures exerted by such materials as sand, clay, etc., under the different physical conditions in which we find them in practice, and then publishing the results.

All theories for the calculation of earth

* Paper read before members at the General Meeting of the Royal Victorian Institute of Architects, by H. Stanley Harris, B.Sc., A.M.Inst.C.E. 8

* See BUILDING NEWS, May 16, 1917, for photograph.

pressures which have any theoretical basis fall into one or other of two classes:—

- 1st. The theory of conjugate pressures, due to Rankine, and commonly known as Rankine's Theory; and
- 2nd. The theory of the maximum wedge, commonly known as Coulomb's Theory.

There is no need to give here the proofs of these theories, as they are to be found in most engineering text-books, and are familiar to most engineers and architects. Probably the best known and most widely accepted of these theories is Rankine's Theory. The assumptions made in this theory are:—

1. That the mass of the material dealt with consists of an incompressible, homogeneous mass, granular and without cohesion, the particles being held together by friction.
2. That the top of the mass is bounded by a plane surface of indefinite extent, and the mass rests on a homogeneous foundation, and is subjected to its own weight.
3. That the whole mass behaves as an elastic solid, in a state of strain, and that the principles of the ellipse of stress apply.
4. That if the top surface of the mass is horizontal, the pressure on any vertical plane through the mass is also horizontal, and the centre of pressure is one-third the depth from the bottom.

From these assumptions is derived the well-known formula for earth pressure against the vertical back of a wall retaining earth.

$$P = \frac{Wh^2}{2} \left(\frac{1 - \sin \theta}{1 + \sin \theta} \right) \dots \dots (1)$$

Where "P" denotes the total pressure against the wall, "h" the height of the wall, "W" the unit weight of the earth, and "θ" the angle of repose of the retained material. From this equation Rankine developed a theory for the safe depth of foundations. In this theory Rankine assumes that when a building is subsiding the material underneath the foundations is squeezed out laterally, the material displaced tending to move, in the direction of least resistance, that is, upwards, and the building goes on subsiding until the downward pressure of the building is balanced by the resistance to movement of the upheaving earth. The safe depth to which building foundations must be taken, according to Rankine's formula, provides for a state of exact equilibrium between the weight on the foundations and the displaced material.

Rankine's formula for safe depth is

$$d = \frac{P}{W} \left(\frac{1 - \sin \theta}{1 + \sin \theta} \right)^2 \dots \dots (2)$$

Where d = safe depth in feet.

P = pressure on Foundations in Pounds per square foot.

W = Weight of soil in pounds per cubic foot.

θ = Angle of repose of the soil under foundations.

In order to test the accuracy of this formula as applied to such materials as sand, earth, ashes, clay, silt, etc. *Mr. Crosthwaite, an English engineer, has recently carried out some very important experiments, which have tended to throw more light upon the behaviour of these materials under pressure. Mr. Crosthwaite's experiments were very simple, and consisted of loading up a plunger of known diameter with known weights, measuring the penetration of the plunger into the soil tested, weighing a cubic foot of the soil, and calculating the value of θ the internal angle of friction. With the known data and the observed penetration of the plunger the value of "θ" is easily ascertained. Thus from equation (2) we get

$$\frac{1 - \sin \theta}{1 + \sin \theta} = \left(\frac{d \times W}{P} \right)^{\frac{1}{2}} = q \text{ say}$$

$$\text{then } \theta = \sin^{-1} \frac{1 - q}{1 + q}$$

Mr. Crosthwaite contended that if Rankine's Theory were correct then "θ" the internal angle of friction of the material calculated that the formula should agree with the angle of repose of the material obtained

by observation of the natural slope, and also the observed penetration of the plunger should be directly proportional to the intensity of pressure—that is, should obey a straight line law.

A number of experiments were first made on Leighton Buzzard sand, just as it was received from the pit. The mean angle of repose, for five samples, gave an angle of repose of 52 deg. 23 min. Great care was taken to consolidate the sand as much as possible, and the consolidated sand, which was slightly damp, varied in weight from 93 to 98 lb. per cubic foot.

At a pressure of 3,232 lb. per sq. foot, a penetration or settlement of 1.51 inches was obtained before the plunger came to rest in a state of equilibrium, while, with a pressure of 7,566 lb. per sq. foot, a penetration of 3.81 inches was observed. The mean of the calculated values of "θ," the internal angle of friction, was found to be 61 deg. 38 min., which differed from the observed value of the angle of repose 52 deg. 23 min. by 9 deg. 10 min., but agreed very closely with the angle of rupture of the material.

In these experiments with sand a rather curious thing was noticed with regard to the weight per cubic foot of the sand. It might be thought at first sight that damp sand, well pounded into a bucket, would weigh more per cubic foot than dry sand, but the reverse was found to be the case. By pounding the damp sand into a bucket only 101 lb. per cubic foot could be obtained, while 108 lb. per cubic foot was obtained by merely shaking the same sand dry into the bucket. The explanation seems to be that the mobility of the dry sand allowed it to assume closer order than the damp sand, and so contain less voids between the grains.

Sand having various degrees of water saturation was then tested, and gave the following penetrations:—Fairly wet sand, with about 7 per cent. of water saturation, gave a penetration or settlement of 3.31 inches, with a pressure of 15,408 lb. per sq. foot, while absolutely saturated sand, with 31½ per cent. of water saturation and weighing 121.42 lb. per cubic foot, gave a penetration or settlement of 5.28 inches, with the same load.

Experiments were then made with damp garden earth, having an observed angle of repose of 46 deg. 12 min. With earth, weighing 56 lb. per cubic foot, a load of 1,008 lb. per square foot gave a penetration of 7.62 inches before stability was reached, while the penetration of the plunger, with a load of 13,892 lb., in an earth weighing 101.7 lb. to the cubic foot, was 8.05 inches.

The experiments on ashes and cinders gave large penetrations with small loads. With ashes weighing 27.3 lb. to the cubic foot, a load of 576 lb. per square foot gave a penetration of 5.58 inches, while a load of 2,307 lb. per square foot gave a penetration of 8.17 inches in ashes, weighing 31.19 lb. per cubic foot.

A curious difference was noticed between the behaviour of sand and ashes under load. In sand, equilibrium was obtained almost immediately after penetration took place, while in ashes, hours elapsed after the application of the load before equilibrium was established.

These experiments on sand, earth and ashes, gave results which seem to be in reasonable agreement with Rankine's Theory for granular materials, as the penetrations were found to be practically proportional to the loads which produced them. They seem to point to the fact that, for such materials, Rankine's Theory holds, provided the correct angle of internal friction is used in the calculations, and not the angle of repose. It appears, however, that the angle of internal friction is not constant for any one material, but varies with the aggregation of the particles of the material. It is, however a comparatively simple matter to find the correct angle of internal friction for any of the materials. All that has to be done is to dig some of the material out of the trench or trial hole, care being taken not to break it up; test it for penetration with the plunger, under a given load, and calculate the correct angle of internal friction; or the

test could be made with the apparatus on the material at the bottom of the trench. The experiments made with weak clays—that is, clays with varying proportions of moisture—showed that these materials behaved in an entirely different manner to that of the granular materials like sand, ashes, etc., just described. The penetrations, instead of varying directly with the loads, increased enormously with the loads. In the case of weak clays, the penetrations appear to vary as the square of the loads, and Rankine's Theory apparently does not hold for the weak clays. The behaviour of weak clays under pressure is at present more or less of a mystery, and there is room for a considerable amount of research work with regard to the physical properties of the different varieties of weak clay under pressure.

The experiments just described relate to the application of the loads directly on the surface of the material tested, and the penetrations found for the different materials would give us an indication of the amount of settlement we might expect in a building if the foundations were placed directly on or very near the surface, and not taken down any depth into the ground. It appears from the experiments that if the foundations for a building are placed at or very near the surface some settlement must be expected, no matter what the foundation material is, unless this material is solid rock.

Rankine's Theory for safe depth of foundations in granular materials states that the foundations should be taken down to a certain calculated depth, if we are to be reasonably safe from appreciable settlement. The usual method of applying this theory is to calculate the safe depth, excavate down to this or some greater depth, and then start the foundation work, when we should expect no appreciable settlement. To test the truth of this Mr. Crosthwaite made a number of experiments on damp sand, well consolidated. The plunger was first started from the top surface of the sand, and with a load of 12,400 lb. per square foot gave a penetration of 1.95 in., when equilibrium was obtained. A small cylinder was then sunk into the sand to a depth of 4½ in., and well below the safe depth. The sand was excavated out of the cylinder and a load of 15,900 lb. per square foot was applied to the plunger, which was now resting on the sand at the bottom of the cylinder. The application of this heavy load gave a penetration of only 25 inches. To confirm this another experiment was made, but this time, instead of driving down a cylinder, a hole 3½ in. in depth was scooped out of the sand. When the plunger was started from the top surface with a load of 15,900 lb. per square foot a penetration of 2.45 in. was obtained, but when this same load was applied to the plunger resting on the sand at the bottom of the scooped-out hole a penetration of only 12 in. was obtained.

These experiments show conclusively that if foundations are taken down below the calculated safe depth for ordinary granular materials, no appreciable settlement need be feared, and that Rankine's Formula is correct. This leads to the somewhat strange conclusion that for granular materials such as sand, earth and similar materials, that which carries the load is the material above the foundation, and not the material below the foundation. For weak clays ranging down to the consistency of mud there is apparently also a safe depth, but it is not the one calculated from Rankine's Formula. Before a rational formula for safe depths in weak clays can be adopted a considerable amount of further research work must be carried out on these materials, and any satisfactory safe depth formula evolved will probably have to take into account cohesion as well as internal friction in the clay.

Experiments which have already been made on fairly stiff clay gave a settlement of 61 in., with a load of 4 tons per square foot, while a very wet clay, practically silt, gave a settlement of 24 ft. 7 in. with a load of 1.25 tons per square foot before equilibrium was established. A safe depth for silt such as this, although of little practical value for most structures, has a scientific interest.

* Min. Proc. Inst. C.E., Vol. CCIII.

inasmuch as it appears to indicate that some safe depth law seems to exist even for such a material as silt. A practical example, which seems to bear out the fact that even very soft materials have a safe depth, is the case of some concrete tanks, which were founded in peat on a moor, at a depth of 17 ft. 3 in., with a maximum pressure of .44 tons per square foot. The tanks were sunk as open cylinders, the men excavating inside them. When completed to the required depth and loaded with water and superstructure no further settlement occurred, although settlement might have been reasonably expected. After a period of twelve months had elapsed no change in level had occurred.

These experiments on settlements under load have been described in detail, as, apart from their scientific interest, they might afford an answer to the question why some buildings erected with shallow foundations, on apparently good ground with moderate loadings, have shown signs of appreciable settlement.

Clay, in one or other of its various forms, ranging from stiff compact clay to clay that is practically mud or silt, is perhaps one of the most inconsistent and treacherous foundation materials that architects and engineers have to deal with.

Shifting ground, such as is found in colliery and salt mine districts, which are often riddled with underground workings, is also a fruitful source of foundation troubles.

Filled-in ground, especially if found resting on top of river silt such as we find in many of the low-lying parts of Melbourne, along the banks of the Yarra, has also provided some very perplexing foundation problems, some of which so far have proved so difficult that no satisfactory solution has yet been found.

There are two general methods of dealing with foundations in bad grounds of the kinds just described. One is to spread the foundations so as to reduce the load per square foot on the soil to a minimum, either by making the foundations very wide or by covering the whole site of the building with a foundation mattress or raft, strong enough to resist the upward soil reactions. The other is to go right down through the bad ground to a good bottom, if one exists, either by piling, by excavating to the solid ground and building up piers of masonry or concrete, or else by sinking cylinders to the solid ground and filling them up with mass concrete.

In the case of comparatively dry, stiff clay of good depth, a satisfactory foundation can generally be built, if the foundations are taken down a sufficient depth to be beyond the influences of climatic changes. This depth would in most cases be greater than the safe depth for stability calculated from Rankine's Formula. Although, as we have seen, weak clays do not appear to obey Rankine's Theory, strong, stiff clays which behave like an elastic solid, do apparently obey this theory, provided the correct angle of internal friction is used in the calculations. Where, however, large masses of strong, stiff clay slip, due to interstratification with beds of gypsum, water-bearing sand, or other causes no general theory for foundations could deal with such a case. It would be just as reasonable to expect a formula to give the strength of a cast-iron pillar, filled with an unknown number of blowholes, as to expect a formula to provide a satisfactory foundation in such ground.

If ordinary foundations in strong, stiff clay are not taken down deep enough, settlement and cracking in the building are likely to occur, through water percolating into the clay in the winter, causing it to swell, and then drying out in the summer, contracting, and sometimes developing fissures. In order to minimise the movement in such cases, a layer of sand 6 in. thick is sometimes placed in the bottom of the trench and the foundations then built on this cushion of sand. This has been found successful in many cases, but in others where the clay has been rapidly dried out by the summer heat and developed fissures, the sand has simply run

into the fissures and settlement and cracking have occurred. The only remedy in such cases is to take the foundations down deep enough to be beyond the effects of climatic changes.

When we have to deal with shifting ground, due to underground workings, the most satisfactory solution, so far found is to place a concrete raft of good depth, reinforced with steel, either in the form of bars or rails, over the whole site. This, however, in many cases is not sufficient, but if the building itself is constructed of a stiff framework of either structural steel or reinforced concrete securely tied and braced together in all directions, and the walls of the building, both external and internal, kept as light as possible, a reasonably satisfactory result is often obtained. The weight of the walls is usually reduced by dispensing with all brickwork or masonry where possible and using hollow tiles, hollow concrete blocks, or else using thin concrete walls $2\frac{1}{2}$ in. thick, reinforced with some form of ribbed steel lathing. Two local instances where $2\frac{1}{2}$ in. external concrete walls, reinforced with metal lathing and light steel bars, have been adopted, are the Newport power house and the new sulphur storage house at the Mount Lyell Chemical Works, Yarraville. These light concrete panels are not cast between shuttering in the usual way, but the concrete, made of sand and cement, with about 8 per cent. of the volume of cement of hydrated lime, is either plastered on to the metal lathing or else shot on with a cement gun in layers, until the correct thickness is obtained.

This makes a thin, light concrete wall, impervious to water and with the steel reinforcement helping to resist cracking. A racking and twisting of the steel framework may take place, the concrete walls developing cracks, but once the ground has resettled into its new position these cracks and deficiencies can be made good, and the final result is often as satisfactory as when the building was first erected.

When we have to erect a building on made ground of shallow depth, say, only 15 or 20 feet of filling, or less, resting on good ground, and there is danger of slight movement of the filling, the most satisfactory method of dealing with the foundations is to take stout piers of masonry, mass concrete, or reinforced concrete, spaced at convenient intervals, down through the filling to the good foundation. These piers may then be arched over at the top with masonry or concrete arches, or spanned with reinforced concrete beams, running along the tops of the piers, and the building started from the tops of these beams or arches. The Darracq Motor Works at Fulham, in London, are built in this way, the whole of the piers and beams being in reinforced concrete, taken down through the filling to the old gravel bed of the river Thames.

Where there is no danger of movement in the filling, piles of either wood or reinforced concrete may be used, connected at the top with a reinforced concrete beam, upon which the building is started. Where, however, there is danger of the filling moving, the piles, especially if of great length, are apt to move with the filling by turning round their points, and instances have come under notice where walls of buildings have been thrown out of plumb as much as 8 inches, and gable walls belled out as much as 18 inches through this movement of filling and piles.

If the piles are of great length, say 70 or 80 feet long, driven through soft silt such as we find on the banks of the Yarra, and the building erected on them is very high compared to its breadth, there may be danger of both settlement and lateral movement of the piles due to wind pressure on the sides of the building. Take the case of a building 50 feet wide, say, and 120 feet high, and of considerable length, presenting a large surface to the wind and resting on piles 80 feet long, driven through river silt of the consistency of slurry. Say the piles under the walls were spaced at about 8 feet centres, with a wind pressure of 50 lbs. per square foot, there would be a big bending moment on the piles which would result in extra load

being put on the piles under the leeward wall, perhaps amounting to as much as 15 tons over and above the dead weight already on them. Unless the wind pressure had been taken into account when spacing the piles, they would probably become overloaded, resulting in settlement. But this is not all. There would be a side pressure on the piles, tending to push their tops forward laterally and rotate each pile as a whole around its point, resulting in lateral movement of the building. The silt through which the pile has been driven would exert little or no resistance to this forward movement, and once the pile has been rotated out of the plumb, say by wind pressure on the building, or by movement of the silt, then the dead weight of the building would tend to continue the process, causing still further settlement and lateral movement. It is, therefore, of great importance to make a building resting on long piles, driven through silt as wide as possible in proportion to its height, keep the dead load on the piles low, and also securely brace and cross brace their tops so as to make the whole framework of piles act like one structure as much as possible.

That wind pressure can act in this way with disastrous results was vividly demonstrated in a large timber building which recently collapsed. The building consisted of a number of light posts about 15 feet high, supporting big timber, braced roof trusses, seven or eight feet deep. The posts rested on light sole plates, stiffened with four struts and taken about two feet into made ground, resting on top of river silt of considerable depth. The timber trusses presented a relatively large area to wind pressure, with the result that when apparently the wind caught them the posts rotated around their bases—the soft foundation being powerless to prevent it—and the roof trusses collapsed, leaving whole rows of posts standing up at an angle of about 45 degrees.

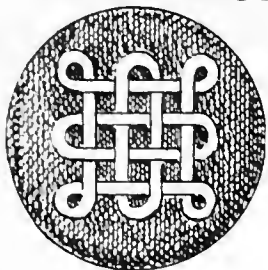
The method of going down right through the bad ground on to a good bottom, though sometimes the most satisfactory, is as a rule a very expensive method. Where the money available for the foundation work is not sufficient to adopt this method, or where the filling, or filling and soft ground, underneath, is of such great depth as to make the adoption of the method impossible, the only alternative left is to reduce the load per square foot on the ground to a minimum by covering the whole site with a raft or partial raft. When this method is adopted and the ground is very bad, some settlement is inevitable, but the raft, which should be monolithic and of considerable stiffness, will, in most cases, tend to make settlement even over the whole site and so help considerably in minimising cracks in the building. The modern way of constructing these rafts is to build them of reinforced concrete, consisting of slabs and beams all tied together with steel, and the concrete cast in such a way as to make the whole raft monolithic. A raft, constructed in this way, is merely an inverted floor with the upward soil reactions corresponding to the ordinary downward floor loads, and the columns and piers acting as supports. In a continuous beam foundation of this description there is always a definite load coming down on the foundations, and a corresponding soil reaction. If the live loads on the floors of the building vary as they generally do, causing variation in the upward soil reactions, it is impossible to keep the pressures uniform on the foundations—and of the same amount always. In our building designs we have two elements of load to deal with, dead load and live load. The dead load is constant and the live load is variable. The wall columns usually carry a small portion of live load and a large portion of dead load. As a result of this the soil reactions under the wall footings are reasonably constant. The interior footings carry relatively heavy live loads and light dead loads, and the live loads being variable, the soil reactions cannot be constant. This is a serious matter as far as the safety of the building is concerned, and might be dangerous unless the soil values were conservatively selected. The soil reactions under the wall footings being always

(Continued on page 405.)

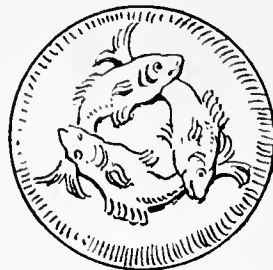
MOTHER PARISH OF ALL HALLOWS, TOTTENHAM, LONDON.

WAR MEMORIAL & ROLL OF HONOUR.

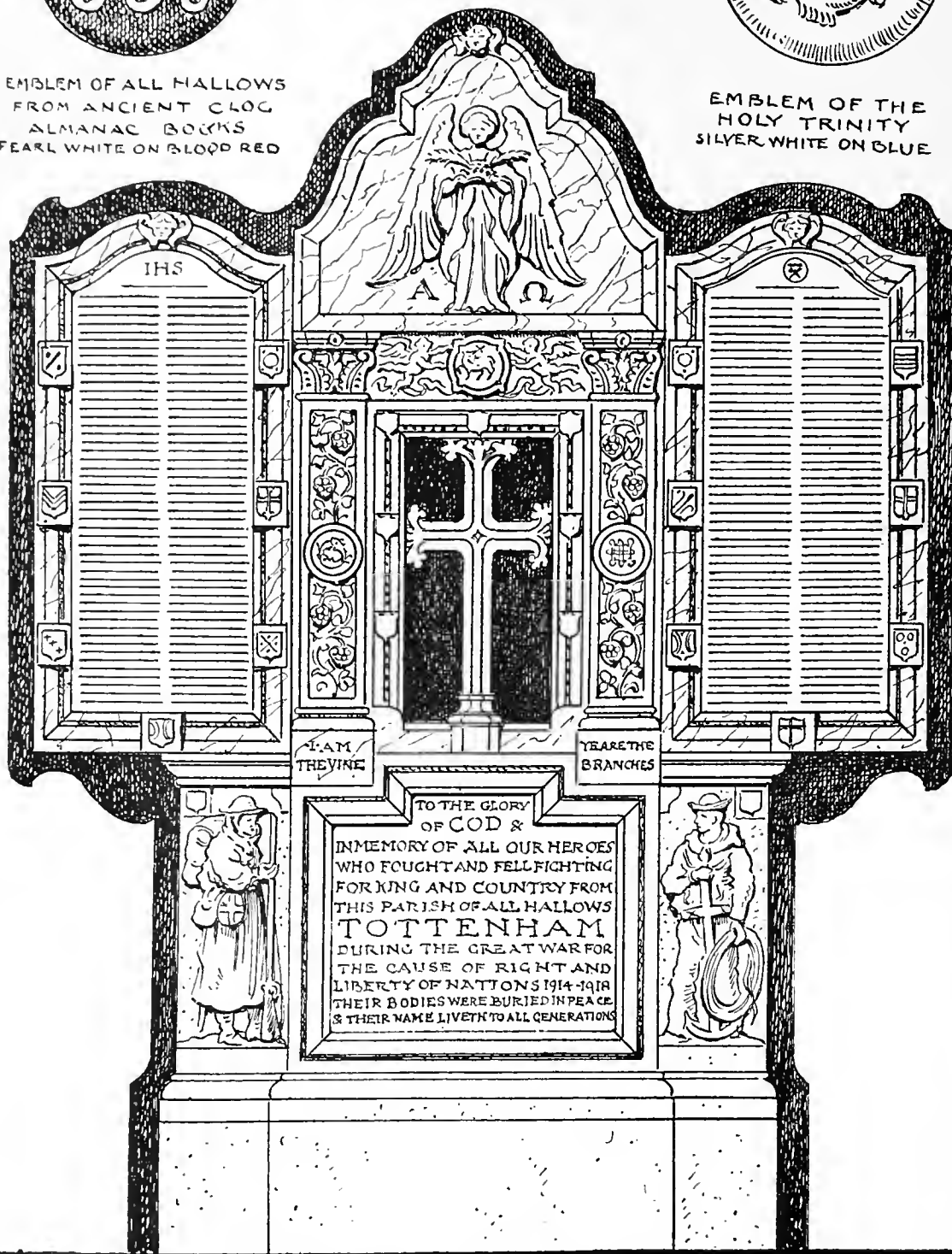
MAURICE B. ADAMS, F.R.I.B.A., Architect. 3



EMBLEM OF ALL HALLOWS
FROM ANCIENT CLOG
ALMANAC BOOKS
PEARL WHITE ON BLOOD RED



EMBLEM OF THE
HOLY TRINITY
SILVER WHITE ON BLUE

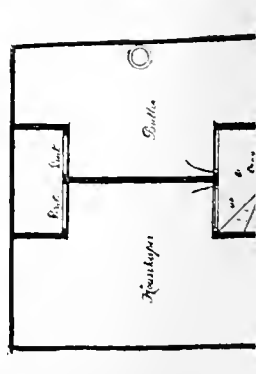
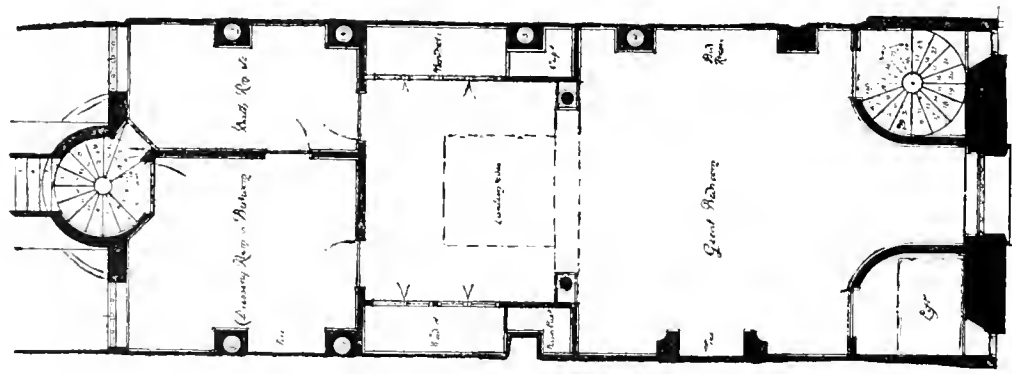
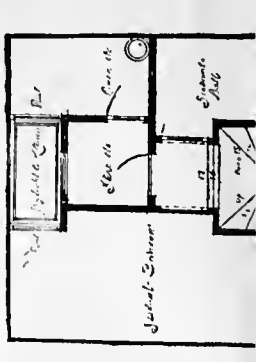
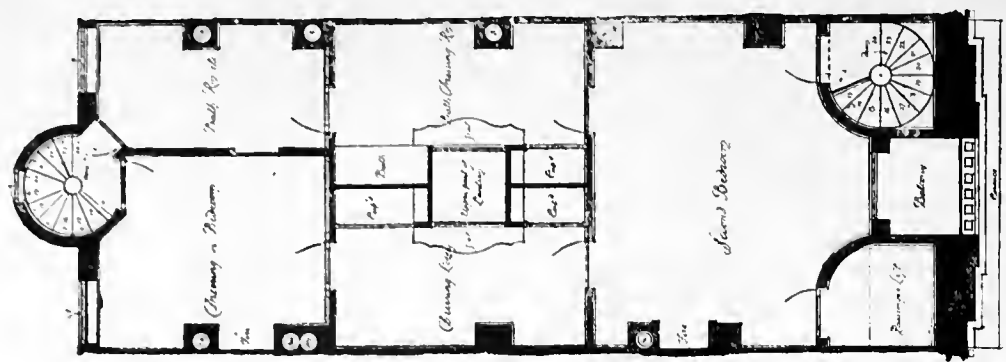
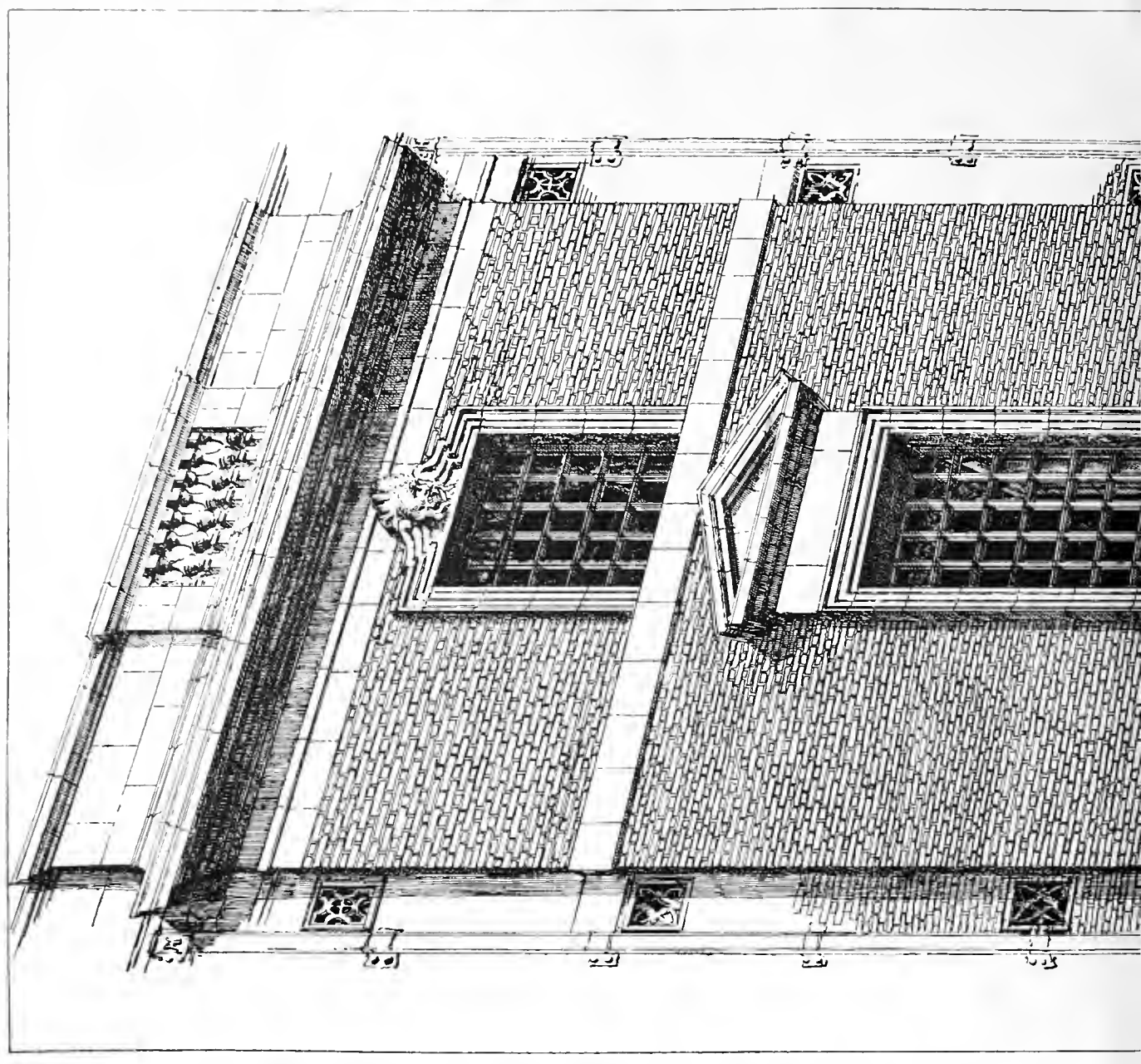


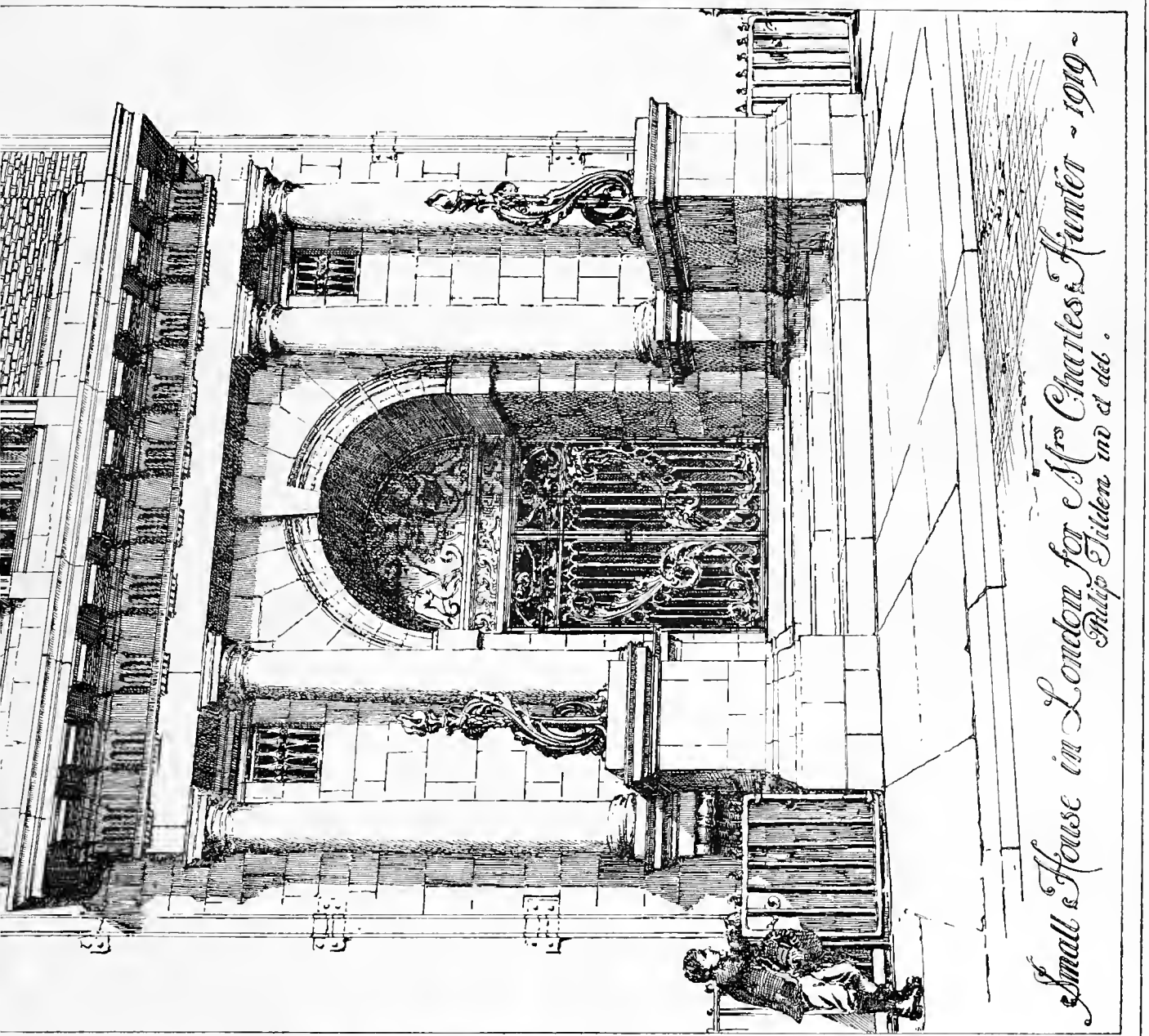
I AM
THE VINE

YE ARE THE
BRANCHES

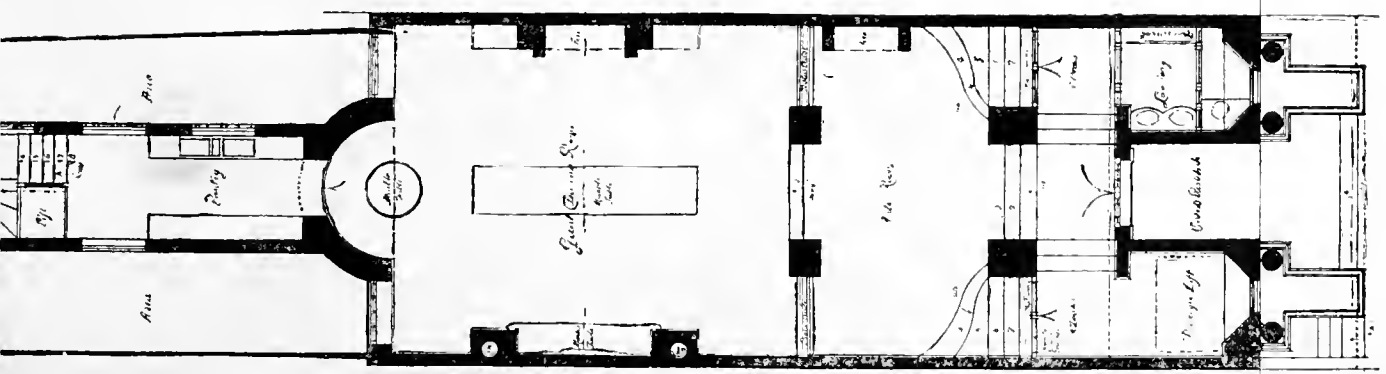
TO THE GLORY
OF GOD &
IN MEMORY OF ALL OUR HEROES
WHO FOUGHT AND FELL FIGHTING
FOR KING AND COUNTRY FROM
THIS PARISH OF ALL HALLOWS
TOTTENHAM
DURING THE GREAT WAR FOR
THE CAUSE OF RIGHT AND
LIBERTY OF NATIONS 1914-1918
THEIR BODIES WERE BURIED IN PEACE
& THEIR NAME LIVETH TO ALL GENERATIONS

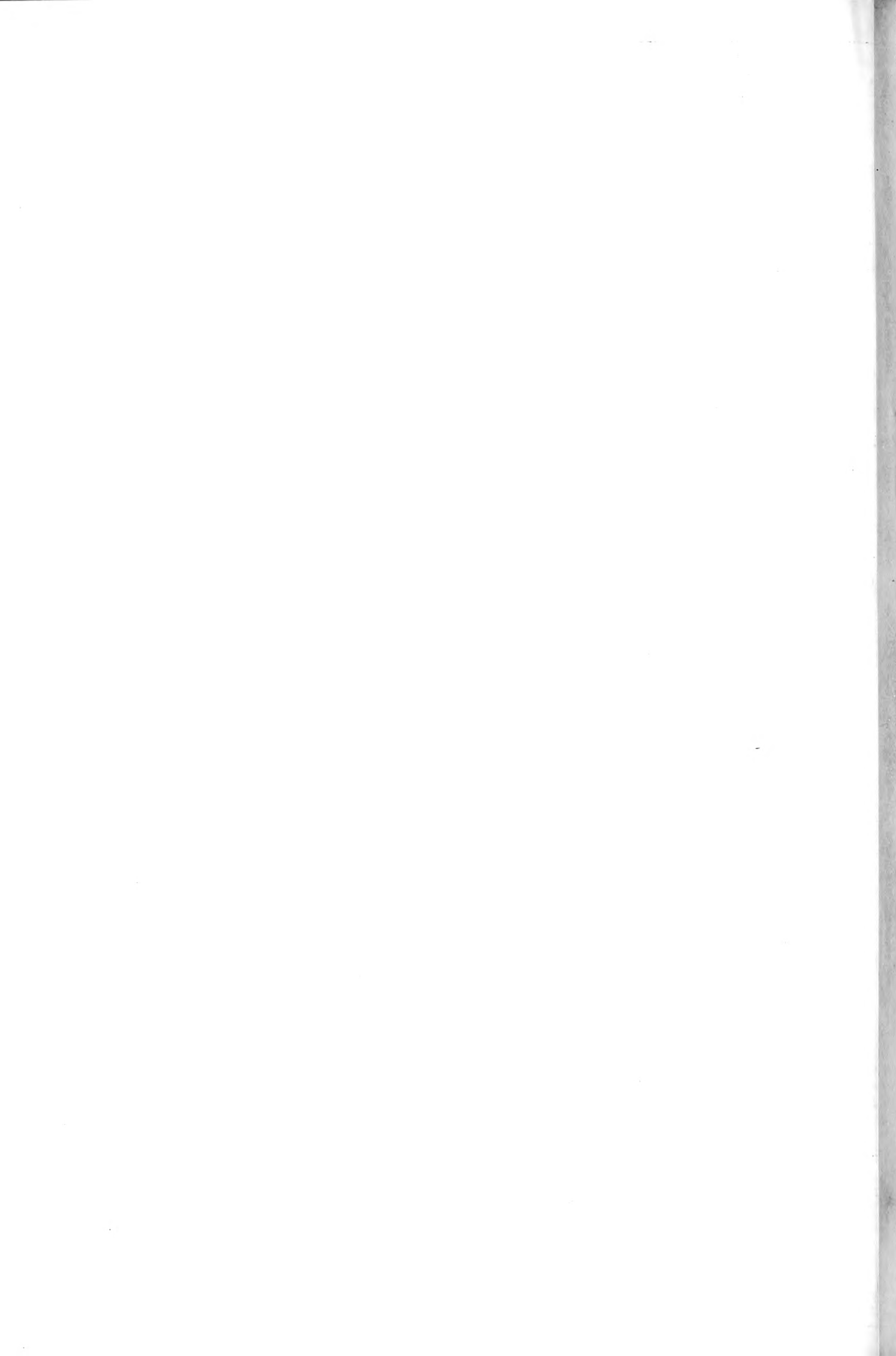
THE ORIGINAL ADOPTED DESIGN ALTERED IN EXECUTION.

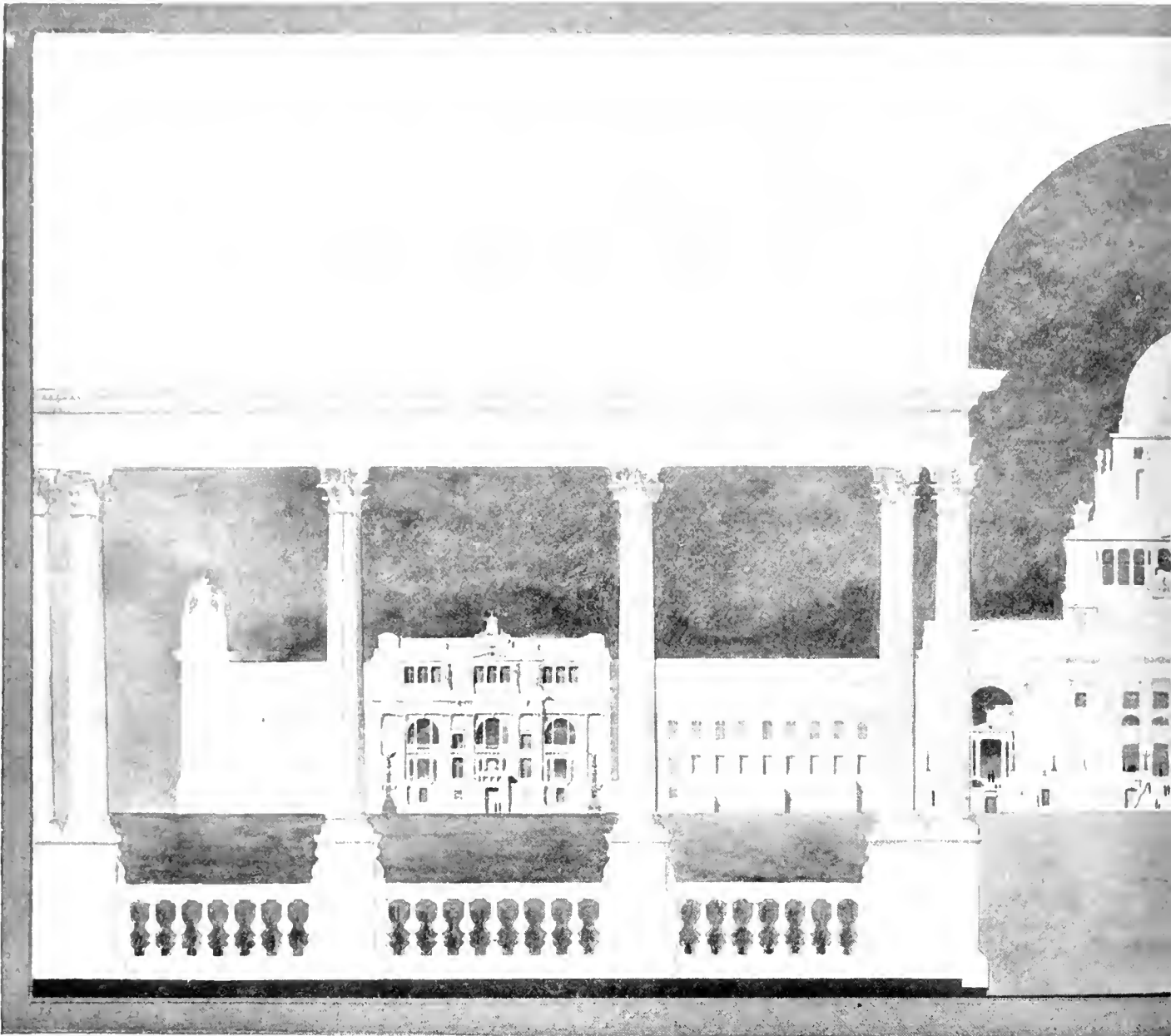




*Small House in London for Mr Charles Hunter - 1919 -
Philip Tilden and et al.*

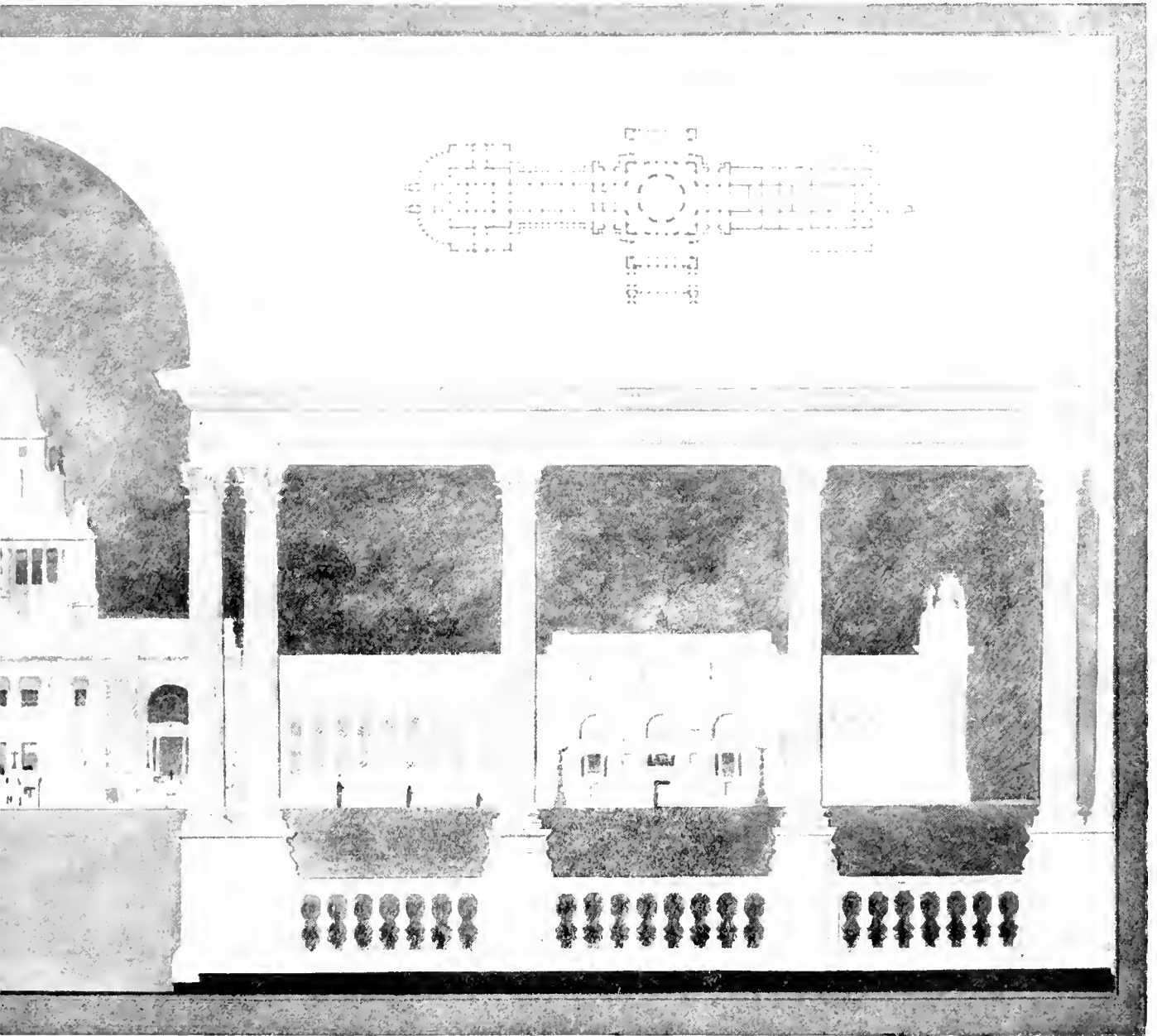






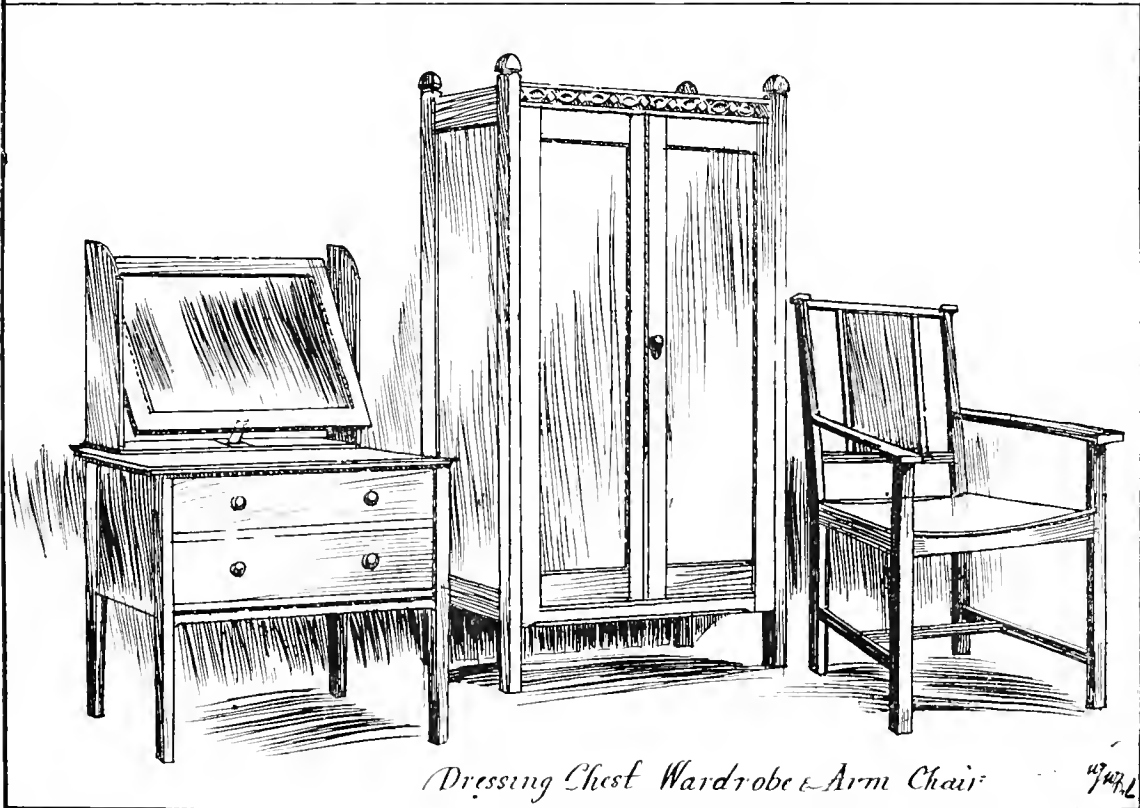
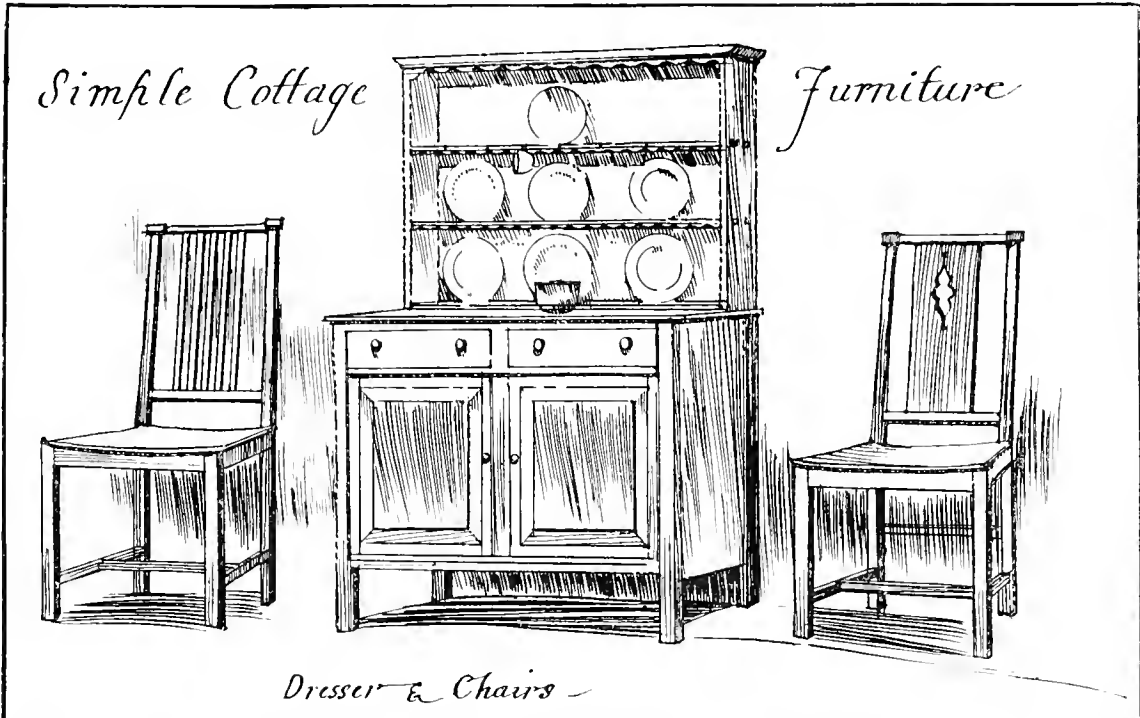
DESIGN FOR AN IMPERIAL MUSEUM AND A MONUMENT
Captain B. NEVIN

JUNE 18, 1919.



RECORDS OF THE GREAT WAR : ROYAL ACADEMY, 1919.
SMITH, Architect.





HYGIENIC COTTAGE FURNITURE AT SHOREDITCH.
Designed by Mr. P. A. WELLS and made in the Technical Day School.



(Continued from page 392.)

near maximum, there is a tendency for the wall footings to compress the soil beyond the compression in the interior, and a large bending moment which is thus created and extends over the entire building has a tendency to rupture numerous connections in the interior. This is not a mere theory which is called to your attention, but a fact which has been established in actual construction work.

In the laying out of continuous footings there is one condition which is of great importance. It is necessary not only that the soil pressures be uniform, broadly speaking, but also uniform as far as the local elements of the building are concerned. Take an actual case. The building consisted of a main part and two wings. The main portion was ten stories high and the two wings five. In addition, there was a large tower in the centre. There was a provision in the specification that three stories would be added to the wings at some future time. The soil value of the ground was 2,000 lbs. to the square foot. Consider the seriousness of this problem. It is evident that we have here a beam effect which reaches the entire length of the building, creating heavy stresses in the reinforced raft below, or in the building above, or in both. The soil under the central portion of the original building would be very heavily loaded, and the soil under the foundations to the wings would naturally be subjected to a lesser soil pressure, provided allowance was made for the weight of the future extension. The result of this would be a tendency for the centre to sink into the ground and a compulsion of the footings under the wings to assist in carrying the centre. Thus, we have a long sweep bending moment going along the entire length of the building, and it would be quite impossible to make allowance for it. Let us assume that allowance could be properly made for it and let us see what would happen in the future, when all initial settlements had taken place under the entire foundation, and additional stories were built on the wings. The extra loads would have to be supported in part by the middle, and so would cause reverse bending moments of enormous magnitude to be provided for by the reinforcement in the mattress. A case such as this is very difficult to provide for satisfactorily by means of raft construction. Where the money available is not sufficient to provide a raft over the whole site and the soil has a moderate bearing capacity, a partial raft is often used. This consists of what practically amounts to an inverted reinforced concrete tee-beam, the tee part being made sufficiently wide to reduce the bearing pressure to a safe limit, and the stem of the beam being made sufficiently deep and reinforced with steel in the top and bottom to provide for bending moments, due to uneven settlement. This type of foundation was adopted for the foundations to the New Seamen's Mission Institute recently erected in Flinders Street Extension. Bores which were put down on the site showed the ground to be of the following nature:—

6 ft. of loose filling.
5 ft. of stiff silt.
4½ ft. of soft, sandy silt and shells.
9½ ft. of soft silt.
7 ft. of stiff, blue clay.
Giving a total depth of about 25 ft. of filling and soft silt.

Bores were also put down on the site of the old Seamen's Mission building on the other side of the road, which had stood for a number of years comparatively well, with the exception of some slight settlement, on foundations giving a bearing pressure of 15 cwts. per square foot. The result of these bores indicated that the ground underneath the old building consisted of made ground and silt of approximately the same depths as that under the site of the new buildings. It was, therefore, decided to adopt the same type of foundation for the new building as had been used in the old—but reducing the bearing pressure on the ground from 15 cwts. per square foot to approximately 8 cwts. per square foot. The question of piling the site was also gone into, but the complicated nature of the plan of the building necessitated so many piles that the extra cost over

the cost of the foundations adopted led to its abandonment. The tee-shaped reinforced concrete foundations were taken down about two feet below the ground surface, as it was not thought advisable to disturb more of the hard surface crust, found on top of the filling. When the building was partly completed some horizontal cracks appeared in the walls facing Flinders Street, showing that settlement was taking place in this wall. The settlement was allowed to go on for about six months and careful levels were taken each month. At the end of six months the horizontal crack had opened about ¼ in. As the building was now nearing completion it was thought advisable to stiffen the filling under the wall showing cracks. This was done by boring a series of diagonal holes, spaced 18 in. apart on each side of the foundation, taken down a depth of 4 ft. below the foundation, and pumping in liquid cement grout, under a pressure of about 100 lbs. to the square inch. The result of this was that the cement was forced into all the air spaces and soft parts of the filling, consolidating them and practically making a rough concrete out of the filling. After this operation the horizontal crack in the wall was filled up and the cavity between the 4½ brickwork was also filled up with 2 to 1 cement mortar. No further opening of this crack has been observed, although a period of nearly twelve months has elapsed since the cement was pumped into the filling. The building appears to have settled fairly uniformly over the whole site—the settlement in the front part of the building along Flinders Street amounts to about 1½ in., while the settlement in the back portions of the building amounts to about ½ in. The difference between the amount of the settlement in the front and back portions of the building appears to be due to the vibration set up in the front of the building through the heavy traffic along Flinders Street. That this is so is proved by the record of the levels taken every month—the settlement was uniform each month until the time of the strike. During the strike, which lasted ten weeks, no heavy traffic passed along Flinders Street, and no settlement was recorded by three different sets of levels taken during this time. As soon as traffic started further slight settlements were recorded. The settlements in this building so far are very small, when regard is taken of the nature of the ground on which it is built, and they appear to be getting less and less as time goes on. As we get further away from the Seamen's Mission building towards the site of the Metropolitan Gas Company's works the ground goes from hard to worse. On some parts of the gas company's site there is a depth of over 80 ft. of river silt, making the problem of providing for a solid foundation such as is required for heavy machinery, so difficult as to be almost beyond solution. In the case of three reinforced concrete rafts all in line, carrying three heavy buildings, and taken down about 8 ft. from the surface into the silt, some remarkable settlements have occurred. The load on the silt is about 800 lbs. to the square foot—one of the end rafts has settled down more one end than the other—the deepest end having settled 26 in. in five years. The raft under the central building has settled down about 24 in. at each end, while the settlement in the centre of the raft is very much less. The other end raft has also settled, but in the opposite direction; the most settlement has occurred in the end nearest the central raft, and amounts to about 23 in. Other cases exist there where not only settlement but also lateral movement of the building has occurred in spite of all precautions taken to prevent it. This lateral movement of the building would not be so bad if the building remained in its new position, but one corner of the building would be pushed out to-day and pulled back again next week, when probably the opposite corner of the building would be pushed out. The building in which this backward and forward movement exists is a big coal store, and is probably due to variations in coal loading causing movements in the silt. When one part of the store is loaded and the

other unloaded the loaded part causes the silt to roll up in the unloaded part, and vice versa. These earth movements cause some very peculiar actions to take place in the steel bracing of the roof trusses—members which to-day are straight and taut would tomorrow be bent up into a big bow—and later on this same member would be straight again and some other member bowed up. Ground such as this must cause the engineer-in-chief a considerable amount of anxiety regarding the safety of his buildings and plant, and seems hardly a suitable site on which to erect and maintain a gasworks, if other sites are available. The settlements which have occurred in some of the buildings at the West Melbourne Gasworks appear to be large, but they are made to look quite insignificant by the settlements which occurred in three reinforced concrete buildings erected in Tunis, in North Africa, and recorded in *Engineering News*.

The buildings consist of two five-story grain warehouses, 45 ft. x 100 ft. and 50 ft. x 125 ft. These are parallel to each other, and between them is a flour mill 112 ft. x 112 ft., all being unconnected. They stand on marshy ground lying between the shore of the Mediterranean and the hills. The material is a soft mud, and it is stated that many of the buildings of the town are tilted in various directions, while the surface of the ground rises in ridges due to the displacement of the soft material.

The buildings were founded on rafts, placed 10 feet below the surface of the ground. In June, 1906, just after completion, one of the side buildings was observed to be settling along the outer long side, inclining outward from the central building until it eventually came to rest at an angle of about 25 deg. The building was made of reinforced concrete and did not collapse. To bring the building back again to its correct position, 4,000 tons of sand in sacks were piled in the building on the higher side. Excavations were also made under the higher side to allow the material to be easily displaced. In a few days the building was restored to its vertical position. In August the building on the other side began to settle in the same way, while under test loads. A transit had been sighted on it, the movement began with about 1,500 tons on the floors and the progress of the movement as follows:—The figures represent the overhang of the top above the base at ground line—1 in. at 7 a.m.; 3 feet at 2 p.m.; 9 feet at 6 p.m.; 9 feet 11 in. at 7 p.m.; 14 feet at 9 p.m., and a total of 17 feet at midnight. The building turned around on axis at about the centre of its cross sectional area. It was brought back to the vertical in the same manner as the other building by loading up the high side and by excavating under the high side. The buildings were straightened out successfully, but are now 15 to 18 feet below their original levels.

PROFESSIONAL AND TRADE SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The results of the election of the President and Council of the R.I.B.A. for the coming year are as follows:—President, J. W. Simpson, Members of Council: R. Atkinson, Maj. H. Barnes, M.P., Sir J. J. Burnet, Max Clarke, H. P. Burke Downing, Bamister F. Fletcher, W. Curtis Green, G. Hubbard, J. J. Joass, H. V. Lanchester, W. R. Lethaby, T. G. Lucas, C. S. Peach, A. N. Prentice, G. G. Scott, H. D. Searles-Wood, F. M. Simpson, and P. Waterhouse. The Associate Members of the Council are: L. P. Abercrombie, H. W. Cubitt, W. R. Davidge, E. S. Hall, J. S. Harrison, and D. L. Solomon.

Mr. Hobart Hampden, at the wish of the parish of Hampden, historically associated with John Hampden, the patriot—has written to the Wycombe Rural Council offering to make a new road by the common as a war memorial.

At a special meeting of the Deudraeth Council, held at Penrhynudraeth last Thursday for the purpose of appointing architects for the Deudraeth housing scheme, which comprises the erection of nearly one hundred workmen's dwellings, the Council unanimously appointed Messrs. Owen Roberts and Sons, architects, Portmadoc.

Building Intelligence.

Houses Housing Scheme.—The Hetton Urban District Council contemplate erecting some 500 houses within their district. Sites have been selected, and correspondence is now taking place with a view to acquiring same. Mr. A. H. Fennell, of Chester-le-Street, and of the firm of Fennell and Davis, West Street, Gateshead on Tyne, has been appointed architect and surveyor for the scheme. Mr. Fennell was recently appointed surveyor to the Durham County Agricultural Society. Mr. Fennell has other work in hand, including a cinema theatre at Chester-le-Street, also several alterations and rebuildings of workmen's clubs in the district. Mr. Fennell served in France as a 2nd Lieut. in the Royal Engineers, was a prisoner of war in Germany for about seven months, and was recently demobilised, and recommenced his practice, which was closed down during the war.

FUNDAMENTALS IN THE MAKE-UP OF A CONCRETE MIXTURE.

In the course of a study given before an annual convention of the American Railway Engineering Association, Prof. Talbot, of Illinois University, gave the following fundamentals in the make-up of concrete:—

(1) The cement and mixing water may be considered together to form a paste; this paste becomes the glue which holds the particles of aggregate together.

(2) The volume of the paste is approximately equal to the sum of the volume of the particles of the cement and the volume of the mixing water.

(3) The strength given by this paste is dependent on its concentration; the more dilute the paste, the lower its strength; the less dilute, the greater the strength.

(4) The paste covers the particles of aggregate partially or wholly, and also goes to fill the voids of the aggregate wholly or partially. Full coating of the surface and complete filling of the voids are not usually obtained.

(5) The coating or layer of the paste over the particles forms the lubricating material which makes the mass workable.

(6) The requisite mobility or plasticity is obtained only where there is sufficient paste to give a thickness of film or layer of paste over the surface of the particles of aggregate and between the particles sufficient to lubricate those particles.

(7) Increase in mobility may be obtained by increasing the thickness of the layer of paste. This may be accomplished either by adding water (resulting in a weaker paste) or by adding cement up to a certain point (resulting in a stronger paste).

(8) Factors contributing to the strength of concrete are, then, the amount of cement, the amount of mixing water, the amount of voids in the combination of fine and coarse aggregate, and the area of surface of the aggregate.

(9) For a given kind of aggregate the strength of the concrete is largely dependent on the strength of the cement paste used in the mix, which forms the binding material between the particles of aggregate.

(10) For the same amount of cement and the same voids in the aggregate that aggregate (or combination of fine and coarse aggregates) will give the higher strength which has the smaller total area of surface of particles, since it will require the less amount of paste to produce the requisite mobility, and this amount of paste will be secured with a smaller quantity of water. This paste, being less dilute, will therefore be stronger. The relative surface area of different aggregates, or combinations of aggregates, may readily be obtained by means of a surface modulus calculated from the screen analysis of the aggregate.

(11) For the same amount of cement and the same surface of aggregate, that aggregate will give the higher strength which has the fewer voids, since additional pore-space will require a larger quantity of paste, and, therefore, more dilute paste.

(12) Any element which carries with it a dilution of the cement paste may in general be expected to weaken the concrete. Smaller

amounts of cement, the use of additional mixing water, increased surface of aggregate, and increased voids in the aggregate all operate to lower the strength of the product.

(13) In varying the gradation of aggregate, a point will be reached, however, when the advantages in the reduction of surface of particles is offset by increased difficulty in securing a mobile mass, the voids are greatly increased, the mix is not workable, and less strength is developed in the concrete. For a given aggregate and a given amount of cement a decrease in the amount of mixing water below that necessary to produce sufficient paste to occupy most of the voids and provide the lubricating layer will give a mix deficient in mobility and lower in strength.

A certain degree of mobility is necessary in order to place concrete in the forms in a compact and solid mass, the degree varying considerably with the nature of the work, and generally it will be found necessary to sacrifice strength to secure mobility.

More thorough mixing not only mixes the paste and better coats the particles, but it makes the mass mobile with a smaller percentage of mixing water, and this less dilute paste results in higher strength.

IMPORTANT SALES OF GOVERNMENT PROPERTY.

BIG SUMS REALISED.

The progress made in the sale of surplus Government property under the direction of the Disposal Board, Ministry of Munitions, is indicated by the fact that the value of the stores sold up to date amount to upwards of £107,000,000.

Among the interesting figures gleaned from official sources, the following items are noteworthy:—Horses and animals, £3,701,654 in the United Kingdom and £10,451,719 abroad; for ferrous metals, £2,118,806, and for non-ferrous £8,557,218; for chemicals and explosives, £13,949,051; and for sales to contractors, £3,220,711.

A feature of the sales of mechanical transport, including agricultural machinery, in various parts of the country is that the prices obtained run uniformly high, that at Winchester realising £2,000 more than the inventory value of the machinery.

It is interesting to note that the controller of telephones, telegraphs, and electrical instruments has visited Belgium, with the result that sales will be considerably accelerated. Of the several sales authorised by him, one includes that of 150,000 lamps, and he has also arranged for a quantity of samples of captured or surplus materials to be on view at the Agricultural Hall, Islington.

ANOTHER STONEHENGE EXHIBIT.

At Stonehenge, there is just now, in striking contrast with its famous circle of huge stones, one of the finest collections of bricks in the country, part of the surplus war material which the Disposal Board of the Ministry of Munitions is offering for sale by tender.

It is estimated that the number stacked is upwards of fifty thousand, an imposing display of material which should appeal with peculiar interest at the present time to builders and housing authorities generally.

A stained-glass window, representing the Transfiguration, has been placed in Christ Church, Basing, to the memory of Mr. Robert Willey, F.R.I.B.A., an ex-Mayor and Alderman of the borough.

It is stated at Peterborough that a syndicate has purchased three large brickyards in the district which control an output of between 60 and 70 million bricks annually. The works bought are those of the United Brick Company at Norman Cross and Whittlesey, and the Northam works at Eye.

It was decided by the Henstead District Council, which met last week at the Union Workhouse, Swainsthorpe, under the chairmanship of Mr. G. H. Mutimer, to invite architects to send in their names in connection with the scheme for the building of forty houses, and to make a selection from them under the expert guidance, as consultative architect, of Mr. E. T. Boardman. A previous decision of the Council in favour of competitive designs was rescinded.

Our Office Table.

The Housing and Town Planning Committee of Edinburgh Town Council had before them last week a letter from the Local Government Board expressing regret that the Committee were not providing at present a proportion of houses of the cottage type. Councillor Cameron moved that they consider the advisability of negotiating with the Government for the purpose of forming a cottage dwelling-house scheme on the parade ground at the King's Park. The Committee agreed to recommend no action. In connection with the tenders for the erection of houses on the Gorgie area; letters were received from the Edinburgh and Leith Master Plasterers' Association and the Edinburgh and Leith Master Plumbers' Association stating objections to the principle of sole contracting, and asking that each trade tender separately for its own work. The Committee agreed to recommend the adoption of the principle of separate contracts. The secretary of the Amalgamated Society of Carpenters, Cabinet-makers, and Joiners sent in a resolution of the Society refusing to take part in the reconstruction of huts. The Committee, in view of this opposition, decided to depart from their decision to procure huts for housing. They made it clear that the huts were only intended to be a temporary expedient.

To Chobham appears to fall the distinction of being the second district in Surrey to get a housing scheme well under way. The honour belongs really to the Chertsey Rural Council, in whose area Chobham is situated. It was on May 22 that the plans were sent to the Local Government Board; on the 27th an inspector was persuaded to visit the site and approve the plans; tenders were at once obtained, and that of Messrs. W. G. Tarrant, Sons, and Co., of Byfleet, was accepted on Tuesday, June 3. All in twelve days! The scheme—an instalment only—provides for eight cottages at Burrow Hill, costing on an average £684 each, including land, drainage, etc. The houses are not of the elaborate character of those at Guildford, and do not provide bath or parlour, but there is a large living-room and a kitchen, three good bedrooms, and outhouses.

At their meeting last week the Housing Committee of the Rochdale Town Council considered the question of architect for the new housing scheme—a matter which had been deferred from the previous meeting, and decided to recommend the appointment of Mr. P. W. Hathaway, the Corporation Architect, as architect for the scheme, with Professor Abercrombie of Liverpool as consulting adviser. Professor Abercrombie will prepare the "lay outs" of all the sites acquired by the Corporation for the erection of houses, and will submit plans of the types of houses suggested. He will also be available for consultation on any points that may arise. The working out of the scheme will devolve upon Mr. Hathaway. For Professor Abercrombie's assistance in the original scheme to build 300 houses on the Spotland site, his fee according to scale was to have been £1,350. The committee will recommend the Council to substitute for that arrangement an agreement whereby the Professor's services as consulting adviser for the whole scheme, of 2,000 houses, are to be retained at a fee of £1,000.

"Concrete for Houses, Farm, and Estate," by Fred Ballard (London, Crosby Lockwood and Sons, 3s. 6d.) is a useful epitome of elementary knowledge of concrete construction, which not a few architects and builders would find of service, so ample is the evidence that we have not yet fully grasped the advantages the material affords, especially in times like this of dear labour and material, and when we are faced with the caprices of workmen in the various trades. It will also pay the building owner, who is hesitating to spend money, to read it, unloaded as it is by technical formula, and well furnished with practical illustrations, especially in the section dealing with farm buildings.

The weekly return of housing progress issued by the Local Government Board

shows a slight falling off occurred in the number of building schemes submitted to the Local Government Board during the week ended June 7, as compared with the last week in May; their number was, nevertheless, higher than in any earlier week. It is to be noticed also that the new schemes comprise a greater proportion of proposals from the remoter rural areas, which, speaking generally, have not been ready or able to respond quite so quickly as the urban areas to the demand for house building. One of the difficulties in these areas, as in some urban areas, is that with every cottage fully occupied no accommodation exists for contractors' men to use while building new houses. This need is being met in a number of cases by the use of army huts acquired from the Government Surplus Property Disposal Board. The provision of railway facilities for housing schemes involving the setting up of new areas is under consideration. In the 39 site schemes approved during the week by the Local Government Board the area involved is more than 1,000 acres, a greater area approved than in any previous week except that ending April 5.

In a White Paper issued last Saturday the Local Government Board expresses the view that the maximum time between the approval of the house plans by the Board and the submission of a provisionally accepted tender by the local authorities or utility societies should be five weeks, and every endeavour must be made to reduce this period as far as possible. In addition, particulars are given as to subsequent procedure. The Board hopes to issue at an early date (a) a model form of specification, (b) a model form of schedule to show the net rates of payment for labour and materials, and (c) a model form of agreement and conditions of contract. If modifications or economies are required by the Board owing to the excessive cost or otherwise, its approval will be given subject to the carrying out of such modifications or economies during the progress of the work. This arrangement is designed to prevent delay. Another circular to local authorities intimates that in certain cases they may, after obtaining the opinion of the Housing Commissioner that a site is generally suitable for a housing scheme, request the district valuer to negotiate with the owner or his agent without first reporting his opinion of the value.

There is a visible spurt in the building trade at Edinburgh. Last Thursday the Edinburgh Dean of Guild Court granted a warrant on an application by H.M. Commissioners of Works for a new public office in the General Post Office. The new office will be situated between the present Money Order Office and the Parcel Office, and will have entrances from the North Bridge. The cost, it is understood, will be £12,000. H.M. Commissioners of Works also petitioned for warrant for the conversion of the block of houses and shops in York Buildings and down to 8, Duke Street into a Government office. The department to be accommodated is the Board of Agriculture, and the desire is to bring together in one building the scattered offices of the Board. Extensive alterations will require to be made, and the cost, it is said, will be about £10,000. The Court continued the case for a report on the plans which had come in too late. A warrant was granted for the erection of a slipper factory at Savile Road to Messrs. John Rankine and Son, Chambers Street, Edinburgh. The building will be a two-story one, costing about £5,000. In all there were 39 petitions for warrants, of which 14 were granted and 10 were continued. The remaining 15 were remitted to the burgh engineer.

In the Birthday Honours List the award of the M.B.E. has been conferred on Mr. Fergus Carstairs Rogers, M.S.A., of Kimberley. Mr. Rogers, who receives this decoration in return for valuable services rendered in connection with recruiting, has been a member of the Society of Architects for the past ten years, and belongs to the South African branch of that body.

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TENDERS.
 *Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

AMERSHAM.—For a new residence at Rushmead, Coleshill, Amersham:—

Pitcheb Construction Co. . .	£20,156 0 0
Rust and Ratcliffe . . .	29,698 0 0
Faulkner, J. W., and Son . .	28,780 0 0
Willecock, H., and Co. . .	28,750 0 0
Saint, W.	27,964 0 0
Barnsley, J., and Sons . . .	25,444 0 0
Godson, G., and Sons . . .	25,177 0 0
Coopers, J. K., and Sons . .	25,102 0 0

CAMBERWELL.—For rebuilding the Southampton Street School, Camberwell, for the London County Council:—

Leslie and Co., Kensington Square . . .	£26,729 0 0
Wallis, G. E., and Son, Ltd., Maidstone . . .	25,655 4 0
Holloway Bros., Ltd., Grosvenor Road . . .	24,788 0 0
Lawrence, W., and Son, Finsbury Circus . . .	23,603 0 0
Holliday and Greenwood, Ltd., Battersea . . .	23,500 0 0
Thorne, F. and T., Isle of Dogs . . .	23,333 4 0
Akers, W., and Co., Ltd., South Norwood . . .	22,819 0 0
Gabraith Bros., Ltd., Camberwell Green . . .	21,322 17 11
Downs, W., Ltd., Walworth Road . . .	21,314 0 0
King and Son, Vauxhall Bridge Road . . .	21,142 0 0
Leng, T. D., Evelyn Street, Deptford . . .	19,777 0 0
Bowyer, J. and C., Ltd., Upper Norwood* . . .	18,959 0 0

*Recommended for acceptance.

CARDIFF.—For erection of two additional workshops at the rear of the technical college, for the education committee. Messrs. I. Jones and P. Thomas, 6 and 7, St. John's Square, Cardiff, architects:—

Davis, D., and Sons, Trade Street . . .	£5,600 0 0
Bond, E. A., and Co., 47, Beda Road . . .	5,474 0 0
Evans, E. R., Bros., Gwynneth Street . . .	5,474 0 0
Tucker Bros., 181-3, Broadway . . .	5,290 0 0
Knox and Wells, Bangor Street . . .	5,150 0 0
Turner, E., and Sons, Penarth Road . . .	4,954 0 0
Thomas, F. J., Hamilton Street* . . .	4,790 0 0

All of Cardiff. *Accepted.

CORWEN.—For extension of the present pavilion for the Royal National Eisteddfod of Wales:—

Woodhouse, L. H., and Co., 16, Honna Road, Bridgford, Nottingham . . .	£2,956 0 0
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Accepted.

EASTBOURNE.—For alterations and additions to business premises, Penvensey Road and Langney Road, for Messrs. Bobby and Co., Ltd. E. Searchfield, 53, Park Road, S.W.18, architect:—

Bainbridge and Son, Eastbourne . . .	£4,318 0 0
Woolnough, J. W., Eastbourne* . . .	3,755 0 0

*Accepted.

FLEETWOOD.—For alterations at Chancer Road, Fleetwood, Council School, for the Lancashire Education Committee:—

Riley, T., Ltd., Fleetwood . . .	£373 0 0
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Accepted.

NEWLYN, CORNWALL.—For water supply works at Newlyn, for the Paul Urban District Council:—

Bennett, W. E., Bodmin . . .	£4,126 2 3
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Recommended for acceptance.

WIMBORNE.—For repairs, etc., at the infirmary, for the board of guardians:—

Cobb, H.	£282 0 0
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Accepted.

The death is announced of Mr. Frederic Hammond, F.R.I.B.A., F.R.A.S., district surveyor for Hampstead. He was in his seventy-third year. The funeral took place on Wednesday afternoon last at Highgate Cemetery.

LIST OF TENDERS OPEN.

BUILDINGS.

June 20.—Twenty-one cottages, at Eldon Street, Canton, Cardiff, and neighbourhood.—For the Corporation.—E. J. Elford, M.I.C.E., city engineer, City Hall, architect. Tenders to the Town Clerk's Office, City Hall, Cardiff.

June 24.—Erection of general stores, forge, machine shop, smiths' shop and conveniences, at Faverdale, Darlington.—For the North-Eastern Railway Co.—Plans and specifications may be seen, and quantities obtained upon application to A. Pollard, the company's architect, York. Tenders to R. F. Dunnell, secretary, York.

June 26.—Erection of 60 houses, and the construction of roadways, footpaths, sewers, etc., required in laying out the site, at Whitehaven.—For the Whitehaven Town Council.—J. S. Stout, 36, Lowther Street, Whitehaven, architect. Tenders to E. B. Crosswell, town clerk, Town Hall, Whitehaven.

June 26.—Erection of sixteen semi-detached houses in Beech Tree Lane and Paddy's Lane, Camnock.—For the Camnock Urban District Council.—R. Blanchard, engineer and surveyor, Council Offices, Camnock. Tenders to the Chairman of the Camnock Urban District Council, Council Offices, Camnock.

July 5.—Erection of sixteen houses in connection with the Brixham Council's housing scheme at Garlie Rea.—For the Brixham (Devon) Urban District Council.—Tenders to H. G. Smith, clerk, Town Hall, Brixham.

CHIPS.

The Prince of Wales's Hospital, Tottenham, will be enlarged at an estimated cost of £146,000.

The Lexden R.D.C. has appointed Mr. T. Arthur Clarke, of Lexden, as architect for its housing scheme.

The Worthing T.C. has agreed to acquire the pier at a cost of £18,446, and to erect a pavilion on the shore end.

Richmond has decided to build a public hall as a war memorial. The T.C. will be asked to appropriate a site on its Red Lion Street area for the building.

The village of Adlington, Lancashire, has decided to complete the parish church by the addition of a tower, spire with eight bells, and a clock, as a memorial to the 105 men who fell in the war. The estimated cost is £7,000.

Plans have been approved by the Aberdeen T.C. for alterations to the Gaiety Picture House, Shiprow. Mr. J. Rust is the architect. Also for alterations to Market Buildings for the Aberdeen Market Co., Ltd. Messrs. Kelly and Nicol are the architects.

The American Ambassador will unveil on Tuesday, June 17, at 3.30 p.m., the memorial tablet which has been erected in St. Mary's Parish Church, Ealing, by the New England Society of Brooklyn, N.Y., in memory of John Horne Tooke, whose tomb in the adjacent churchyard has also been repaired.

Prebendary Webb Peplow last Saturday week dedicated the "Victory and Memorial" peal of eight bells recently hung in St. Stephen's Church, Grove Road, Clapham Park, and cast by Messrs. Gillett and Johnston, of Croydon, to the order of a lady who desires to remain anonymous, at a cost of £1,250.

At a recent meeting of the Status Committee of the Society of Engineers it was agreed that members should increase their fees (other than those charged as a commission) by 33 1/3rd per cent., and the fees mentioned in "Professional Practice in Engineering, Part I, Consulting Engineers," should be altered accordingly.

The sub-committee of the Stranraer Town Council appointed to consider the applications for the vacant office of burgh surveyor, etc., have selected eleven out of the thirty-eight candidates as a short list—viz.: Messrs. R. W. Macvey, C.E., Kelso; J. Spence, C.E., Coatbridge; A. Peddie, Helensburgh; W. B. Mitchell, Dornoch; R. W. Duff, Stirling; A. L. Thompsson, M.R.S.T., Tavport; E. W. W. Ross, C.E., Edinburgh; W. Mason, Edinburgh; W. Miller, Castle-Douglas; J. Cooks, Rothesay; A. H. Swanson, Linlithgow.

Pictures are not always good investments. John Linnell's picture "The Eve of the Deluge," painted in 1843, was sold at Christie's last Friday for 37 guineas. At the sale of pictures belonging to Gilloft, the pen-maker, in 1872, the price obtained for the picture was 1,040 guineas. W. P. Frith's pictures "The Road to Ruin" (a set of five) were appraised twenty years ago at 1,500 guineas, but their valuation last week was 460 guineas. D. MacIise's "Sleeping Beauty," exhibited at the Royal Academy of 1841, at a sale in 1865 realised 939 guineas; it was now bought by Mr. Sampson for 22 guineas.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

FIMBER.

Maximum prices at which imported timber may be sold have now been fixed by the Controller of Timber Supplies till further notice. They are too long to quote here; but will be found in the "London Gazette" of Feb. 7, 1919.

IRON.

- Rolled Steel Joists, English... Compound Girders, Ordinary Sections... Compound Stanchions... Angles, Tees, Channels and Fitch Plates... Wrought-Iron Girder Plates... Steel Girder Plates... Steel Sheets (Single or Double)... Steel Strip... Basic Bars... Mild Steel Bars... Steel Bars, Ferro-Concrete Quality (basis prices)...

Prices controlled by Ministry of Munitions.

OTHER METALS.

Table listing various metals and their prices per ton, including Lead Water Pipe, Copper Sheets, Tin, Lead, and Zinc.

BRICKS.

Table listing various types of bricks and their prices, including First Hard Stocks, Second Hard Stocks, Mild Stocks, and Picked Stocks.

WHITE AND COLOURED GLAZED BRICKS.

Table listing white and coloured glazed bricks with prices per 1,000, including stretchers, headers, quoins, and bullnose.

Best Buff, Cream and Bronze, £2 per 1,000 extra on Best Whites.

Other colours, Hard Glaze, £5 10s. per 1,000 extra on Best Whites.

Moulded Stretchers or Headers, 1s. 2d. each.

Majolica and soft glazed Stretchers or Headers, £32 per 1,000.

Majolica and soft glazed Bullnose, £38 10s. per 1,000.

NOTE.—Above prices are in full truckloads at London Goods Station.

SAND AND BALLAST.

Table listing sand and ballast prices, including Thames Sand and Pit Sand.

CEMENT AND LIME.

Table listing cement and lime products, including Best Portland Cement, Ground Blue Lias Lime, Grey Stone Lime, and various types of stone.

ORLS.

Table listing various oils and turpentine, including Rapeseed, Cottonseed, Olive, Coconut, and Linseed Oil.

TILES.

Table listing various roofing tiles, including Plain red, Hip and Valley, Broseley, and Staffordshire tiles.

SLATES.

Table listing slates, including Best Welsh Blue (Portmadoc) Slates and minimum prices for Portmadoc Slates.

Table listing slates with dimensions and prices, including 24 by 12, 22 by 11, 20 by 12, 18 by 12, 16 by 12, 14 by 10, 18 by 9, 16 by 9, 14 by 8, 18 by 9, 16 by 9, 14 by 8.

Note. Bangor Slates: 24 by 12 to 20 by 10... 20 by 10 to 14 by 10...

Where quotations for slates are not obtainable at present architects and builders will do well to specify and use some of the excellent substitutes which have found favour of late.

ASBESTOS ROOFING TILES, supplied by the British Uralite Co., Ltd., 8, Old Jewry, London, E.C. From £4 14s. per 1,000, 9 in. by 9 in., 400 tiles per square of roof covered, price per square, 37s. 8d., to £33 8s. per 1,000, 24 in. by 24 in., 34 tiles per square of roof covered, price per square, 22s. 3d.

ALLIGATOR ROOFING, supplied by the British Roofing Co., Ltd., 40, Trinity Square, E.C.3, in rolls of 216 feet super, with the necessary mastic and nails for fixing: 1 ply, 20s. 6d. per roll; 2 ply, 26s. 6d. per roll; 3 ply, 34s. 6d. per roll.

"POLITE." Made by Bell's Asbestos Co., Ltd., Southwark Street, S.E. Standard tiles in red, blue, and grey colours, carriage paid to nearest railway station. 15 1/2 by 15 1/2. "Polite" lining sheets are now available, unrestricted by Government control. Corrugated roofing sheets (grey), in 3 ft. 7 1/2 in. widths, 1/2 in. thick in 4 ft., 6 ft., 7 ft., and 8 ft. lengths, sq. yard, 5s. 6d. Diagonal roofing tiles (grey), 15 1/2 in. by 15 1/2 in., C 4 or F 5 pattern, 1,000, £20 3s. Flax building sheets (grey), 2s. 3d., to 6s. 2d. Cover-strip for joints, 2 1/2 in. by 3 1/2 in., per lin. yard; do. do., 2 1/2 in. by 1 1/2 in. Roman-type tiles (grey), 4 1/2 in. by 2 1/2 in. by 1 1/2 in. "straight cover," 3s. Ridge tiles, Roman-type (grey), 3 ft. 7 1/2 in. long, half-round, slotted for rolls of tiles, 1s. 3d. "Polite" sarking felt, in rolls of 24 yards by 1 yard wide, per roll, 18s. Crates for tiles and sheets, extra on above prices.

ROK ROOFING. Made by D. Anderson and Son, Ltd., Lagan Felt Works, Belfast, and Roach Road Works, Old Ford, London, E. Prices and particulars in new booklet "V." to be had on application.

LION ROOFING, in rolls, 24 yds. by 1 yd. Manufactured solely by F. McNeill and Co., Ltd., Roofing Felt Works, Bunhill Row, E.C. and Kirkcaldy, N.B., etc. Lowest current prices and Lion Roofing pamphlet free on application to F. McNeill and Co., Ltd., 4, South Place, London, E.C.2.

GLASS (IN CRATES).

Table listing glass products in crates, including English Sheet Glass, Plate, and Stipplyte.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Ellingham House, 1, Arundel Street, Strand, W.C.2, and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

*Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects, small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

REPLIES TO ADVERTISEMENTS.

Replies to advertisements can be received at the Office, Ellingham House, 1, Arundel Street, Strand, W.C.2, free of charge. If to be forwarded under cover to advertiser, an extra charge of Sixpence is made. (See Notice at head of "Situations.")

Advertisements for the current week must reach the office not later than 3 p.m. on Tuesday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by first post on Monday to secure attention.

RECEIVED.—L. P., Ltd.—W. and Son, Ltd.—B. and P.—S. J. O. and S.—B. S. Co., Ltd.—T. I. J. M. and Co.

M. WILLIAMS.—No. D. S. O.—Sorry; no T. H. P.—Kindly send. 2. Yes.

Messrs. Smart and Stewart, Mr. W. Erskine Thomson, and A. K. Beaton has been appointed architects in connection with the erection of 300 houses to be erected by the Perth Town Council.

A recommendation for the appointment of a Director of Housing, at a salary of £1,000 a year, was resolved upon last Wednesday by the Housing and Town Planning Sub-Committee of Edinburgh Town Council.

The surveyor to the Rowley Regis Urban District Council, Mr. W. H. Brettell, has received instructions to prepare plans and estimates for new municipal buildings, to include offices, shedding, a fire station, and a caretaker's house.

Mr. Bertram McKenna has been entrusted with the execution of the memorial to members of both Houses of Parliament who fell in the war. The memorial will take the form of a group of statuary, the central figure being Eternity holding the roll of honour in her hands, and other figures will include the patron saints of the countries forming the United Kingdom.

As a result of the Bishop's protest against the erection of a Calvary in St. Nicholas's Churchyard, Liverpool, as a war memorial, a meeting of the parishioners was held last Thursday night in the Church Institute to consider what action should be taken, and decided unanimously that the money received should be held in reserve for the memorial for further consideration as to the way in which it should be expended.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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Strand, W.C.2

OUR ILLUSTRATIONS.

View from an Archway of Westminster Bridge, by Canaletto, 1737, lent by the King, from Windsor Castle.
Interior of the Garden Loggia, Government House, Imperial Delhi, and lay-out plan of the official buildings and grounds. Sir Edwin L. Lutyens, A.R.A., and Mr. Herbert Baker, F.R.I.B.A., architects.
Village Club, Stokesay, Shropshire. Mr. Bryant A. Poulter, F.R.I.B.A., architect. View and key plan.

Currente Calamo.

The coming Peace celebrations have originated a society formed recently which concerns itself with all matters of public rejoicings or ceremony. It consists of musicians, artists, organisers of pageantry, processions, dances, and experts of all sorts, whose advice or assistance would be useful on such occasions. It is called the League of Arts for National and Civic Ceremonies, and has already been entrusted with the control of the great pageant of the Merchant Marine which is to take place upon the Thames between London Bridge and Chelsea as a part of the Peace celebrations. The British Institute of Industrial Art is acting with it in this, and is also collaborating in the editing of a pamphlet on the conduct of public rejoicings. This pamphlet contains advice on all aspects of this subject, and will be well illustrated with suggestions for street and river decoration, and in particular there will be a set of designs for that lamentably feeble branch of decoration, our national and other flags. The wretched caricatures of heraldic animals and other details, the poor proportions and ill-arranged colour-shapes of nearly all the flags which have hitherto been purchasable have been among the greatest blots on our public festivities. That such wretched and debased vulgarities should be all we could get to symbolise the greatness of our history and the splendid deeds of our sailors and soldiers is a national shame. Everyone, we feel sure, will gladly help to get rid of it, and we endorse the hope of Mr. Anning Bell, in the *Journal of the Imperial Arts League*, that the designs (by Mr. Kruger-Gray, well known as a first-rate heraldic designer) will be widely used. They may be carried out in appliqué, paint, stencil, or other method. It is hoped, also, that the League of Arts will be able to get a quantity of them reproduced by some agency and placed upon the market for sale. Altogether the pamphlet should have valuable results in improving the coming festivals. It is to be entitled, at the suggestion of Sir Frank Benson, "Rejoice Greatly: How to Organise Public Ceremonies," and will include about twelve pages of coloured illustrations with smaller designs in the

text. It will be issued by the Institute at Martlett House, Bow Street, W.C.2.

The *Liverpool Daily Post* proposes, in conjunction with the Liverpool Architectural Society, to hold an exhibition of modern materials and appliances which are employed in the building of small houses and cottages. It is hoped that the exhibition will take place in July, and it will remain open for a week. The promoters have no intention of making it a trade show of the ordinary kind, in which exhibits are retailed on the premises. Neither do they desire to display such accessories as furniture and domestic utensils, which are not germane to their immediate purpose. It is intended to provide everyone interested with the opportunity of seeing the best and newest materials for use in the construction of floors, walls, and roofs, together with examples of modern fireplaces, sanitary fittings, heating and lighting contrivances, patent doors and windows, and similar articles. Exhibits which relate to the painting and decorating of the house will be included. Any firms who wish to exhibit their products, and whose products fall within the classes to which the exhibition is confined, are asked to communicate with the hon. secretary of the Liverpool Architectural Society (Mr. Richard Holt), at 8, Victoria Street, Liverpool, before the end of this month. They should state the nature of their goods and the amount of space they will need. This is an example the other provincial architectural societies might well follow, first to show what exhibitions of the kind ought to be, and next to familiarise the public with the desirability of entrusting their design and erection to architects.

We hope the House of Lords will carefully consider the Housing Bill. The authorities, who are appointing committees, etc., in a fashion that indicates that they take it for granted that the passage of the Bill through the Commons settles everything, need a wholesome lesson of the sort the Lords administered when it was sought by the Ministry of Health to saddle the taxpayer with the cost of a second Parliamentary Secretary with little to do except draw a fat salary. There is still need, too, of a reply of some sort to the question Sir Aston Webb pithily put yesterday week in his

letter to the *Times*—what steps are the Local Government Board taking to ensure that the new houses shall come up at least to some moderate standard of design? We have asked that question several times, and shall wait, we fear, as long as Sir Aston Webb will for an answer, unless the Lords second it emphatically. We see, too, that Dr. Addison asserts that in building the houses rents must be charged that will yield a return on a large proportion of the cost, and that wages shall be paid to enable the workers to pay such rents. That is a very vicious principle, for higher wages simply mean still higher building costs and still further increased rent, bringing in its train still higher rents and nobody in the end any better off. The subsidisation of rents by the community will assuredly never break the ever-increasing links of the chain thus forged round the taxpayer!

The "No Rent" strike commenced last week at Dudley by the tenants of the Dudley Corporation houses, numbering over 302, has been described by Alderman Sir George Bean (chairman of the Housing Committee) as an attempt at Bolshevism. The increases in the rents of houses on the Brewery Fields Estate became due on the 16th inst., but in the windows of nearly all of them tenants displayed printed notices stating that no rent would be paid "pending further negotiations." At their meeting in May the Town Council decided to increase the rents of the 8s. 4d. per week houses by 5d., and the 9s. 6d. and 10s. 6d. per week houses by 6d., on account of the recent increase of 1s. in the pound on the general district rate, and 9d. on the poor rate, the total rates being advanced from 9s. 7d. to 11s. 4d. This decision aroused a storm of indignation among the tenants, who quickly held a protest meeting, and formed themselves into a Municipal Tenants' Protection Association, and on a ballot last week 242 were in favour of a strike and 13 against, while there were eight blank papers. The main complaint of the tenants is that the houses are not worth the rentals charged prior to the increases, the rooms generally being small and inconvenient. The houses for which the highest rental is charged have each three bedrooms and the others two, but all are very small. The weekly payments include the rents and rates, and it is

stated that none of the tenants know how much of the total is for rent and how much for rates. The tenants insist that the contribution of the Ministry of Munitions towards the cost of the building of the houses, which were erected in 1916, was £21,382. Similar houses, they assert, could have been built before the war and let at a profit of 5s., 6s., and 7s. a week, and they ask why the corporation, after receiving a subsidy to bring the cost of the houses down to a pre-war standard, charged 8s., 9s., and 10s. per week. On behalf of the Town Council figures have been quoted to show that the charge of profiteering made against them is absolutely without foundation. The capital expenditure on the estate was £107,444. The total capital received was £103,959, of which £82,576 was raised by loan and £21,383 received as a grant from the Ministry of Munitions, so that the grant and loan have been over-spent by £3,485. The income from the rents last year was nearly £7,000, but instead of this representing a 10 per cent. return on the capital outlay, as had been suggested by the tenants, the necessary expenditure has been such as to leave a very considerable adverse balance. The interest on the loans amounted to £3,675, and the repayment of loans £510, these sums together representing over four-sevenths of the income from the rents, and after reckoning all charges connected with the estate there was a substantial three-figure deficiency. The first year's net loss on the estate was £1,038. The loss in the year ended March 31, 1918, was £569, and last year's loss was £362. Two grants amounting to £2,600 have been provided for the general district rate. The attitude taken up by the Council is that the whole matter is one of supply and demand. Recently there were 89 applications for the houses. At the last meeting of the Town Council Alderman Sir George Bean declared that the Housing Committee would resist the agitation, and, if necessary, the proper legal remedies would be enforced. The Council, he said, could not allow the public of Dudley to be exploited by a number of people who seemed to have no conscience at all. That is as it may be; but what will be done by-and-by when the Housing Act is in full swing and people who cannot get houses for themselves are taxed to pay the rents of the inmates who may strike for reductions?

There are many communities just now desirous of showing their appreciation of the sacrifices of their local townsmen. The financial side of the question has in most cases been quickly settled by the generous response to the appeal for funds, but many of the local committees are undecided as to what form the memorial shall take. War Shrines with floral decorations are out of the question, as these are often allowed to fall into decay. The Shrine in Hyde Park, London, with its general air of neglect, is a standing reproach to the country, while inanimate statues are rapidly forgotten by the public, and are too susceptible to the attacks of the weather. It would be hard

to imagine a more appropriate or more permanent memorial than a peal of bells erected in the local church or chapel or other public building. They have an abnormally long life, and at regular intervals peal out their message of remembrance. Messrs. Gillett and Johnston, of Croydon, who have been casting and erecting bells since 1844 in all parts of the world, will gladly advise local committees both as to suitable sites and approximate costs. They issue an illustrated pamphlet, "The Story of a Peal of Bells," which may be had free on request. It is well worth perusal by architects and others, embodying as it does the valuable experience of a firm which deservedly occupies the leading position in the craft of which it is the acknowledged master.

It is reported in the daily papers that, after a vigorous protest by the Vicar of St. Botolph's, Aldgate, against the caning of a boy for misbehaving in chapel, the managers of the Central London Schools District last week decided that in future some other form of punishment should be adopted. Very misplaced lenity in our opinion. In a case tried last week at the Southwark County Court Judge Granger's utterances were much more sensible and timely, as all who are daily in touch with the present generation of "our boys" will admit. The claim before the judge was one for personal injuries, brought against Messrs. Haywards, Ltd., the well-known engineers, Southwark, by William Tindall, aged fourteen. The lad, in cross-examination, admitted that he wilfully placed a piece of metal in the tool of a machine. Judge Granger: "Was that for a joke?" Applicant replied, that he jammed the machine because he did not want to work upon it. The lad contradicted his evidence, whereupon his honour remarked it was "shocking." "This is a very sad case, indeed," he added. "Here is a most intelligent lad of fourteen who has made what is positively a false claim. He not only does that, but when he objects to work on a machine he endeavours to break it. I cannot imagine a more terrible state of things, and it is evident the boy has not had the advantage of the rod when he was at school. I hope he will turn over a new leaf and try what a little honesty will do in his relations with others." Judgment was given for defendants, with costs.

Readers temporarily sojourning at the seaside or in rural places during the next few weeks must not blame us for the difficulty of obtaining chance copies of this paper. We have repeatedly explained that this is no fault of the news vendor, and that as no returns of unsold copies are taken by us, he will only order copies for regular customers. Wherever it is found impossible, then, to get the paper punctually and regularly, we will send it weekly, for any period, post free, at the published price, sixpence per copy. The reasons for the discontinuance of the pre-war practice of accepting returns of unsolds are the renewed and continuous increases in the printers' charges, which have this month

been advanced by another 5 per cent., making 115 per cent. above pre-war prices, and the still heavy cost of paper. We have also to ask the indulgence of advertisers when compelled to omit their advertisements by the consequent limitation of our space.

THE WAR AND DRESS.

Among the minor changes in the habits of the masses, those in their habiliments are by no means the least noticeable. Perhaps, still, in some sort of a fashion—though it is not that of the fashionable tailor—Necessity knows no law, but the changes in our garments are by no means at an end, if, as we are threatened, the cost of men's clothing is likely to be much higher next autumn. Since the beginning of the year the charges of woollen manufacturers have steadily advanced, and are now about 15 per cent. above the quotations ruling even as recently as March. The principal reason for the advance, some say, is the dearness of wool purchased at the resumed auction sales. That wool is Government property, and enormous profits are being made by the Government on its sale. Added to this, the reduction of working hours in the woollen industry is seriously retarding the output of material, while labour charges have increased in nearly all departments by 100 per cent. or more on 1913 rates. A clothing manufacturer assures us that, quality for quality, an overcoat obtainable for a guinea before the war will cost quite £3 5s. next autumn, a pre-war £2 2s. overcoat will retail at about £5 5s., and a better-grade garment that could be obtained in the autumn of 1914 for £4 15s. will cost £11 11s.

This may not matter much to those of us who are ordering our resurrection robes in readiness for the end of the world, which Prebendary Webb-Peploe assures us is due at the end of the year at the latest, and perhaps before, but it is evidently giving some of us to think whether a cheaper, more comfortable, and more presentable dress for men might not be possible. It is true all the suggestions are not in that direction, but there is an unreality about the assurances in some of our snippy daily contemporaries that the tall hat is coming back to its own again that suspiciously suggests the puff paragraph. As we write, just back from the welcome downpour in Fleet Street, the prevailing smile on the faces of our splashed fellow pedestrians is assuredly not altogether one of satisfaction at the longed-for advent of the rain, but is intensified by self-congratulation that no tall hat has been irretrievably ruined, and the registration of a solemn vow never again to risk a guinea's worth on the head covering that had no affinity with any other garment donned by man but the frock coat, that reluctantly abandoned ticket of church-going and funeral-attending respectability. However came the tall hat—that symbol and delight of the rank Radicals of the early years of the last century—to supplant the three-cornered thatch of the squirearchy of its predecessor? There are mysteries in the fashions that no neophyte may presume to pierce. Some of us are old enough to remember when all the London clergy wore the garb of our waiters. Why in the fifties was that silently superseded by the clerical coat and the M.B. waistcoat favoured by the Oxford movement? Why to-day do we see pleas in some of the clerical papers on behalf of the lounge suit and the soft lay felt?

Is "mufti for the clergy" some insidious plea—some enabling Bill framed to facilitate a fuller freedom to which aproned and string-hatted bishops and deans can never aspire? As vainly such questions are asked us as by an Australian soldier, who, meeting us the other night in a West Central square, demanded "who that old cock in a bedgown was" behind the railings. We explained to him that it was a valued tradition of a great ducal British family that it was a bounden obligation of every member who transformed the green fields of Bloomsbury into golden ground rents—

"Wherever he laid out a square,
To plant a Bedford statue there,"

and that the classic robes in which the great and glorious pillars of our old nobility were arrayed were symbolical of their virtues and unselfish devotion to their King and country. "Like him they've got here," rudely interrupted the arthropodean hero, chuckling, as he flourished an evening paper with the full story and illustrations of the latest ducal divorce case.

Some of the suggestions for the betterment of our sartorial belongings are, we fancy, a little beside the mark. The *Morning Post* last Friday naturally enough sternly rebuked "the ludicrous suggestion that in view of outrageous prices now charged by tailors, men should adopt jumpers of wool." Why ludicrous? Our sisters and spouses—when the latter are not too much given to emboupoint, look not so ludicrous in a jumper. Why should not Amanda vary her worked wool slippers for her pet curate by a jumper, just to keep the lambent flames of love burning in his bosom? But if the *Morning Post* jibs at jumpers, of course there is an end of it. It is waiting for the one "sensible plan" the revival of the countryman's smock. The *Morning Post* has known men of position to wear the smock in the country, to wit, one parson, one squire, and one schoolmaster. On high occasions—at Ascot, say, one would wear the smock of blue, with criss-cross white thread-work upon it, like lace in effect. For everyday use a quiet grey smock would be in order, puckered, tucked, or gathered to taste, a honeycomb pattern neatly worked on the breast, a fetching heart at the V of the neck. Why country labourers gave up the smock, and now look upon it in disdain, is past our contemporary's understanding; for a better garment the wit of man never devised. It is cleaner than your greatcoat, for it is washable. It is proof against showers and wind and thorn-proof, cool in summer, warm in winter, and it is very comfortable, and endures for ever. With a smock a man has a lap for carrying wood, herbs, rabbits, and what not and he has a napkin wherein to gather up crumbs dropped at a wayside meal, so that not one is wasted.

When we all go a-farming smock frocks will doubtless be *de rigueur* again, and we shall see the new owners of England "puckered and tucked" in the one garment worthy of the new men who have bought the old acres. Till then we recall with regret that the one sensible dress reform attempted in the last century had a very temporary following. It should have caught on, for it had three vital recommendations; as few clothes as possible, consistent with health and decency, adaptability to conditions and circumstances, and endurance—which doubtless raised the tailors to indignant revolt. Our older readers have doubtless not forgotten its exposition by that genial prophet of a golden age of garb which should bring men comfort and not make them

look ridiculous, whose riper years have been so profitably devoted to a kindred subject—Mr. J. A. Gotch, whose suggestions and illustrations with a view, as he very aptly phrased it, "to ornament the useful and not to find a use for the ornamental," we gave on page 899 of our issue of June 29, 1883. There will be found a commonsense dress for every day use; a comfortable summer costume, with two figures in "jumpers" which even James of the *Morning Post* might tolerate, an indoor costume of white flannel which at any rate would wash and wear well, and an evening suit which would at least distinguish its wearer from the waiters at banquet or ball.

In Volume XLIV., of which the above-mentioned issue formed a part, there was a good deal about rational dress. In the March previous Mrs. Leigh Hunt Wallace had lectured at St. James's Hall on "The Martyrdoms of Modern Dress." In the following May the Rational Dress Association held an exhibition of ladies' garments at Prince's Hall, some of the designs shown at which we illustrated in our issue of May 25, 1883. Some more attractive ones were shown in that of June 1, 1883. Lady Harberton had a good deal to say on the matter in the same issue, and Mrs. King in that of May 11, 1883. There was more about the subject in our issues of Feb. 9, Feb. 16, and Feb. 23, and any aspirants of to-day anxious to start a new crusade may, perchance, get more encouragement than was given in an earlier age by Lady W. Montague to friend Belinda in her "Summary of Lord Lyttleton's Advice to a Lady":—

"Be plain in dress and sober in your diet;
In short, my deary, kiss me and be quiet!"

CAUSES OF FAILURE IN SLAG CONCRETE.

Although well made slag concrete is a very reliable building material, there have been cases where concrete, in which slag has been used as an aggregate, has failed. The chief causes of failure were given by Dr. J. E. Stead in a paper read before the Cleveland Institution of Engineers as follows:—

(1) The scrimping of the cement, leaving the finished concrete in a very porous condition, which is not serious in constructions above water level, but where fresh or salt water has free passage into or through the concrete is almost certain to cause disintegration—rapidly by sea water and less so with fresh water. Whatever the aggregate may be, porosity in concrete is certain to lead to premature destruction by sea water.

(2) To the use of the fines from old slag dumps, which often contain coal ashes and other deleterious substances. It is therefore desirable to riddle off and reject all that will pass a sieve with $\frac{1}{2}$ in. mesh, or better, the pieces smaller than $\frac{1}{4}$ in. in diameter.

Preferably it is safer not to use anything but pure clean slag. Coal ashes are sometimes present in mixed dumps and contain sulphides of iron, which in presence of air and water produce acid solutions which react on the slag, dissolving a portion of the alumina and lime, producing the aluminium-calcium sulphate, which may cause expansion.

Concrete floors and pavements have been known to expand and buckle purely owing to the oxidation of the sulphides and production of hydrated calcium sulphate, and possibly due to the production of the double salt just referred to, particularly in cases where care has not been taken to remove the fine slag, and when the concrete has been porous and kept in a damp condition. It was advisable therefore not to use any fine slag at all for floors exposed to such conditions, but employ ordinary sand instead, and in confined positions, such as the floors of dwelling-houses, to refrain from using slag as an aggregate owing to the property slag has of yielding sulphuretted hydrogen when it is moistened.

Our Illustrations.

VIEW FROM AN ARCHWAY OF WESTMINSTER BRIDGE, BY CANALETTO, 1747.

This drawing has been graciously lent us by H.M. the King from the Royal Library at Windsor. Recently the picture was included in the exhibition held by the Burlington Fine Arts Club in Savile Row, showing "Early Drawings and pictures of London." Antonio Canale, the Venetian painter, usually called Canaletto, visited London in 1746 and remained about two years. During that time he produced many pictures and drawings, chiefly of London scenes. The view which we have reproduced to-day is executed in pen-line and washed in monochrome. It measures 19 in. by 11½ in. The prospect is taken from old Westminster Bridge archway opening, looking down the river from York water-tower to St. Paul's Cathedral. Old Westminster Bridge was begun in 1738 and opened in 1750. Canaletto was born in 1677 and died in 1768.

INTERIOR OF THE GARDEN LOGGIA, GOVERNMENT HOUSE, IMPERIAL DELHI.

This oil painting by Mr. W. Walcott is another of the romantic series of Delhi perspectives shown by Sir Edwin L. Lutyens, A.R.A. at the Royal Academy Exhibition this season. We also reproduce, as a single-page sheet, the lay-out plan showing the relative positions of the great Secretariat Buildings and of the Government House, situate as these Imperial buildings are midst the monumental grounds and official gardens. The Guard-houses and Viceroy's Court will be found illustrated in our number for June 4. Our previous plates (including Mr. Herbert Baker's work as joint architect) appeared in the issues of May 7 and 21. Others will follow shortly.

VILLAGE CLUB, STOKESAY, SHROPSHIRE.

This club is a timber-framed building filled in with cement concrete. Sufficient oak has been felled for the whole of the structural timber and joinery in the interior. Some old bricks and stone have been obtained for the chimneys and plinth. The club-room is provided with a stage and cinema, but usually it will be divided by folding screens into a billiard-room, gymnasium, and reading-room. Cottages are provided on the entrance front for the caretaker and village nurse. A kitchen for preparing refreshments and baths for the villagers is a feature. This drawing by Mr. Bryant A. Poulter, F.R.I.B.A., is now in the Royal Academy, Messrs. Tabbs, Messer and Poulter, of Craig's Court House, Whitehall, being the architects.

There is a great shortage of houses in Iceland owing to the war, stated Mrs. Bjarnason, a native of the island, at a conference in London last week.

The committee appointed by Coventry City Council to select a site for a Town Hall, to seat not less than 2,500 persons, report in favour of the corner of Earl Street and Little Park Street, opposite the Council House. The cost of the building is put at £100,000, with £50,000 to £100,000 for the site.

The Archdeacon of Northampton dedicated a fumed oak rood screen in Longthorpe Church on Sunday week which had been given by Superintendent and Mrs. Slaughter, Sessions House, Peterborough, in memory of their son, Lieut. W. L. Slaughter, who fell in action in France on September 5, 1918. The screen was the work of Mr. L. Andrews, of 55, Bright Street, Peterborough.

MACADAM, MILEAGE, AND MAINTENANCE.

By A. P. SANDLES.*

Under the folds of Britain's flag was rocked the cradle of John Loudon Macadam. He was the founder of macadam roads. The vast domain of British Empire can well be proud of this illustrious citizen who climbed to a lofty place among the sons of men. He blazed a new trail that nations and progress have followed. Wander where you will, in the world, if civilisation is there, macadam roads are there. Yonder, across the border, John Loudon Macadam has hold of the four corners of my country, the United States, and is lifting us out of the mud and mire. "His body lies mouldering in the grave, but his soul is marching on."

Mr. Macadam was Road Commissioner of Scotland for fifteen years—from 1775 to 1789. Before this time he visited America. After that he began working out his "Macadam Plan." Those eminent highway engineers, Arthur H. Blanchard and Henry D. Drown, of Columbia University, New York City, say in their text book on road making:

"Macadam was the first man to recommend a broken stone surface of very small size stone for public roads. Other great engineers helped him to work out and demonstrate the success of his method. He proved there was great difference between a loose stone road and a perfect Macadam road."

As a tribute and monument to a useful man, the world has built more miles of Macadam type roads than it has of all other types combined. The "Macadam Plan" was the result of years of study and experiment by a man who devoted his life to the work. His plan has borne well for a century. The novice or amateur road builder who presumes to discredit this noted road maker gets but little applause. Macadam type roads appear in different forms, wearing different surface coats, to meet the needs of modern travel. Mr. Macadam is the man who helped us to jump from ox-cart to tin-lizzie and from mud-hoat to motor truck. He is the man who clove back the darkness and beckoned us to our place in highway transportation to-day.

Macadam roads are the most used and most abused of any form of highway improvement. They are usually built and then murdered. Lack of maintenance is a crime and a disease. If there is any one place where the old adage, "A stitch in time saves nine," fits best, it is in the care and repair of roads.

MACADAM AND MAINTENANCE.

The good road secret is "Macadam and Maintenance." When our overseas fighting lads were marching to meet or overtake the Hun, they had both feet on Macadam-Victory roads. These world-war veterans will go on the witness stand and testify that the Macadam and maintenance roads program over there made the Hohenzollerns sign the armistice before breakfast and sign the peace treaty as it is written in the language of John Loudon Macadam and the Republic of France.

No permanent road is made. Such theory violates natural law. Mountains slowly but surely wear away. Petals of the rose fade and fall. Everything, animate and inanimate, has its zenith. Then come decline and decay, which for ever play a part. This natural immutable law never has been, and never will be, repealed. It is in force on every mile of road that has been or will be made. Until the sun is cold this law will hold. In days long gone a king inscribed over his castle door this legend, "Even This Will Pass Away." In his sadness the legend was a hope and a cheer. In his gladness it was a caution and a halt on revelry. Kings and castles pass away, but the law of the legend over the door, like Tennyson's brook, goes on for ever.

He who proclaims "permanent roads" should commune with Nature and learn the error of his ways. The roads of Rome, the Appian Way, the roads of Caesar in France, were builded of stone centuries ago, and are wearing yet. They more nearly approach

permanence than any other structure ever built by man. Constantly newspapers record the fact that the so-called permanent roads fail to meet the test of time, speed, modern loads, and weather. No matter what the type of road, the patrol man must be on the job if the road is to be kept at 100 per cent. every day in the year.

REPAIR INCREASES RESISTANCE.

Mr. Macadam won a splendid victory when he invented a road on which repair would strengthen its wearing capacity and add to its power of resistance. He wisely avoided a type of construction on which repair would be a weakness. He had in mind quick mending, no traffic delay, and small cost. Macadam builded better than he knew. The fame and name of this unrowned king reaches round the world. After a century of time, the ways and wisdom of this great engineer still inspires more miles of road-making than all the others combined.

God made no mistake when He hauled and unloaded stone in convenient places for the use of man. Macadam knew this. He used material near at hand. Macadam is the natural cure for mud roads and bad roads. The supply of material will never be exhausted. Maintenance is the secret. One of the distinguished jurists and judges of Ohio has aptly said, "To neglect to build good roads is a blight on a nation, but to neglect to maintain them is inexcusable and a criminal waste of public property."

Roads must be well built. Ignorant, careless or fraudulent construction robs the public pocket-book. Brains in the engine-room of the engineer, honesty in his heart, and full knowledge of road-making, will make this official a public benefactor. Hats off to him who makes the blue print and writes the specifications which guide the workmen in building and erecting great structures. Without the engineer and architect the world would go back to chaos. The highway engineer must know his business and have the courage to umpire his game. He is a power-house. His office must be beneath his own hat. A public policeman ought to be on the job to ensure faithful performance of contract. If this safeguard is neglected, any and every type of road will be a disappointment.

DRAINAGE IS LIFE INSURANCE TO THE ROAD.

A crown on a road is worth more than a crown on a Kaiser. Drainage is the cornerstone of road-making. Drainage is life insurance to the roof and root of the road. Surface drainage is essential. Foundation drainage is the alphabet of every road improvement. Maintenance is the father and mother of good roads. Mud-holes are cancers, road-ruts a disease, dust a pestilence; breaks and cracks mean danger and damage. The patrol man and surface treatment are safety-first money-savers. Some day we may build road vehicles so that rear wheels are wider apart than the front wheels. This will distribute the weight and wear of loads over a greater surface and lessen the chance of rut-making.

The good road secret is "Macadam and maintenance." Macadam means more miles and more service to more people for the money invested. Nations of Europe, after centuries of experiment and experience, build Macadam roads. Mileage is popular. Rightly built and repaired without delay are the password and countersign.

The business of road officials is to spend money, not to save money. They should make supreme effort to give the taxpayer value received for every road dollar invested. They should build roads for the benefit of road users, and not for the purpose of making any man or set of men rich. Material men, contractors, and politicians are entitled to a square deal and nothing more.

The good road sentiment is a tidal wave. It must be honestly and intelligently met and answered. If at any time or place there is greed, grab or graft in road-making, it should be hit, and hit hard. Road officials will do well to be wary of the fellow who wants to show them a good time. That fellow expects to grind his own axe and chop his own wood with it.

Excess profit should be handcuffed and strait-jacketed. If any set of men attempt to manipulate underground wires to make

enough profit on one job of work in one road-building season to enable them to retire and live at ease the rest of their natural life, they should be strait-jacketed, and the contract held up until honesty and square dealing can be written into the records of the road improvement. Road officials should give these shysters and Shylocks a publicity shock and a chance at hard labour.

BAD ROADS TAKE MEN FROM THE FARMS.

Bad roads lessen religion and increase profanity. The man who must live on a mud road all his life won't have any fear of hell; he will be used to it. Bad roads induce farmers to leave the farm. Mud-roads for the many and joy-ride boulevards for the few is hardly a healthy national road policy. The good road should reach as far as the flag goes. It should reach as far as conscription of men for the battle line reached. The rural country homes that gave a boy to war service should have the hope of a good road some day. There should be system; main highways should be established. Co-operation between units or divisions of government should be the rule in road-making. This will avoid patchwork and crazy-quilt, disconnected road-building. But the meat-ticket growers should be neither neglected nor forgotten.

John Loudon Macadam intended that road building should have an economic value. Farm and food highways will give the consumer more crop for his dollar and give to the producer more dollars for his crop. This double-gear gain offsets and pays off the road tax. The shortest distance between producer and consumer is a good road from farm to market. Investigation discloses the fact that the average yield of fields increases when improved highways are built into an agricultural community. The good road does social up-lift work. School, church, and government improve under the influence of a modern highway. Again, these blessings off-set and pay the road tax. The good road is dollars and sense. This means common sense, not copper cents.

MILEAGE, MACADAM, MAINTENANCE.

How can everybody have the hope of a good road? How is the farmer to be served. How will rural folks be reached? France and other nations of Europe have answered these questions. Boil the story down and the answer is made in three words, viz.: Mileage, Macadam, Maintenance.

In Ohio, my home state, the average cost of roads, per mile, sixteen feet wide, in 1918, as shown by the records on our State Highway Department, was as follows:—

Water-bound Macadam	\$16,000
Bituminous Macadam	19,000
Concrete	31,000
Reinforced Concrete	32,700
Brick—Stone Base	38,000
Brick—Concrete Base	51,000

These were war prices. The average Ohio prices before the war, 1914, were:—

Water-bound Macadam	\$8,657
Gravel Macadam	8,365
Bituminous Macadam	11,064
Concrete	14,227
Brick	20,982

As a rule Macadam roads are wider than other types of roads. This should be kept in mind in comparing general cost price. While the Allied Armies were going to the Front over Macadam roads, the meat-wheat meat-ticket over here was going to the front over hard-top highways over here. Mr. Macadam was a blessing at both ends of the line. We must have road mileage without bankrupting the public money-box.

When war came, railroads failed to meet the crisis. The throat of traffic choked. Terminals clogged. Freight congested. Hums laughed and rejoiced at our predicament. The motor truck appeared as saviour. Brains, mixed with lightning and gasoline, make wonder wagons. The motor truck became an engine of war. Day and night it delivered millions of tons of freight and armies of men on time at the right place. The world knows that the motor truck was a crusader in the world war. The world knows that the motor truck would have been helpless without the hard-top road. John Loudon

*Secretary, National Crushed Stone Association, Columbus, Ohio, before Canadian Good Roads Congress.

Macadam began one hundred years ago to build Victory roads that were to humble the haughty Hun and make the Kaiser run from Hunland to Holland. "God moves in a mysterious way, His wonders to perform." Roads are the scaffolding by which nations are built up and saved when they have to be saved.

THE SOCIETY OF ARCHITECTS.

At a meeting of the Society of Architects, held at 23, Bedford-square, W.C.1, on the evening of June 19, the following were elected members:—

Major Harry Barnes, M.P., London; Herbert Frank Bottomo, London; Frederick George Coates, Grays, Essex; Ernest Harcourt Edleston, A.R.I.B.A., Nantwich; Llewellyn Charles Edwards, Colwyn Bay; William Gilbert, London; Frederick William Charles Gregory, Nottingham; Harold Vincent James, London; Albert Peregrine Lloyd, A.R.I.B.A., Swansea; Herbert Percy Maxwell, Scarborough; Henry Paul, London; William Herbert Pearson, Luton; Walter Rudman, Chippenham; Robert Wortley Graeme Russell-Walker, Brighton.

Twelve nominations for membership were announced.

The congratulations of the Society were conveyed to Sir Charles T. Ruthen, O.B.E., Member of Council, on receiving the honour of knighthood; to Lieut.-Colonel Peter G. Fry, C.M.G., D.S.O., R.E., on being awarded the C.M.G.; Mr. Fergus Carstairs Rogers, of Kimberley, on receiving the M.B.E.; and Mr. R. M. Butler, of Dublin, on his recent election to membership of the Royal Irish Academy.

The Society has increased its holding in War Loan by taking up a fresh investment in the new Victory Loan.

The report of the Society's delegates at the recent Building Industry Conference was received, and Mr. Edwin J. Sadgrove, the President of the Society, was nominated as the Society's official representative on the Building Industries Consultative Board.

As a result of the communication made to the local authorities on the question of the employment of architects on housing schemes made by it, the Society was being invited from time to time to submit the names of local architects for the carrying out of the work. A supplementary circular dealing more particularly with the proper remuneration of architects is being issued.

The Society is co-operating with the Post-War Committee of the American Institute of Architects in making an analysis of the conditions affecting the practice of architects, and with the Ministry of Labour (Appointments Department) in dealing with the future of ex-officers by delegating members of the Society on the District Selective Committees throughout the country.

The reports of the Society's representatives on the London Society and the conference on the testing of materials were received and dealt with.

Suggestions, together with financial support, are coming in from members in regard to the Society's proposed War Memorial, the form of which is under consideration.

A communication from the South African branch of the Society was received, dealing with the Statutory registration of architects, and showing the active part which that branch is taking in the question of extending Statutory registration, at present confined to the Transvaal, to the Union of South Africa.

The secretary reported progress in every department of the Society's work. The applications for membership were increasing, and the various details of the development scheme were gradually being perfected. He now had the co-operation of the newly appointed assistant secretary, Captain M. G. Kiddy (late R.A.F.), who also presented a report showing the progress which had been made in the particular work allotted to him, and indicating further possibilities for increasing the scope and utility of the Society.

OILPROOFING CONCRETE.

A series of experiments is being conducted at present by Ludwig Bloch and A. D. Hyman, waterproofing engineers for the Waterproofing and Construction Co., Inc., 50 E. 42nd Street, New York, to determine the most advantageous method of making concrete oilproof. The experiments, described in *Engineering World*, are a continuation of similar experiments performed by Mr. Bloch for the Fougner Concrete Shipbuilding Co., of Christiania, Norway, and of New York, builders of concrete ships to be used as oil-carrying tankers. It is said that the results from some of the experiments have had considerable influence on the methods adopted to oilproof the concrete ships that are being constructed.

The experiments are being conducted on cement-sand mortar proportioned about 1 part cement to 2 parts—by volume—of natural sand. A coarse aggregate was not chosen because it is not generally used in ship construction. Gasoline and 30 to 35 degrees Baume fuel oil, contributed by the Standard Oil Co., are being used in the tests. The mortar specimens consist of 2 by 3½-in. cylindrical discs and 1 by 2 by 4-in. parallelepipeds.

Two general kinds of experiments have been adopted. One consists of subjecting one side of flat specimens to oil under pressure; the other consists of immersing specimens in oil under pressure. The former is intended to determine the ability of the specimens to resist seepage, whereas the latter is intended to determine the ability of the specimens to resist absorption. The discs are employed in the seepage tests and the rectangular specimens in the absorption tests.

Various kinds of oilproofing are being investigated. The material includes that which is mixed with the mortar as an integral component and that which is applied to the surface of the specimen as a plaster coat or as a brush coat. Material which is mixed with the cement and sand is usually of an inorganic nature. The material in the plaster and brush coats, however, is varied. It includes special cements, oxides, and other chemical compounds, paints of various kinds, varnishes and shellac. The plaster and brush coats are applied to that side of the specimen which is to be in contact with the oil.

The apparatus employed consists of vertical risers of ½-in. iron pipe, at the tops of which is a glass gauge about 2-ft. long, and at the bottom of which is a container for the specimens. The length of each riser is about 24 ft. When the specimen is in the container, oil is poured in the top of the pipe until the meniscus rises to a mark on the glass gauge. The amount of seepage or of absorption is determined by observing the glass gauge. Beakers are placed under the specimens tested for the seepage for the purpose of collecting any oil that may pass through them.

A feature of the experiments is the method employed to obtain a tight joint around the discs tested for seepage. Only those who have had experience with permeability tests of concrete appreciate the difficulty of obtaining a perfectly tight joint. Some experience is required in fastening the specimen in the apparatus if leakage is to be prevented. It has been observed that the number of leaky joints has diminished as experience in constructing the joint has increased.

To fasten the specimen in the cylindrical container, the top of the container is removed and the specimen is inserted. A rope of oakum is wound around the specimen and tamped solidly into the recess between the specimen and the container. Then a rope of lead wool is wound about the specimen and the lead is tamped thoroughly with a hammer and a caulking iron. The oakum and the lead wool are wound several times around the specimen to prevent the occurrence of vertical joints. Too vigorous tamping is likely to destroy the specimen. An experienced person, however, rarely destroys a specimen by tamping.

The containers have been made, generally, of galvanized iron of various weights. However, experience has shown that the containers made from heavier iron—about No. 20 gauge—are more economical than those made from the lighter iron. The reason for

this economy is that the heavier containers can be used over and over again, many times, whereas the lighter containers can be used only two or three times. The necessary tamping of the lead wool causes a container to bulge and soon destroys the lighter one. What is more important than economy of container, however, is a tight joint around the specimen. This tight joint can be obtained by careful tamping.

Containers to hold the specimens consist of cylindrical drums of 1 cubic ft. capacity. Several 1 by 2 by 4-in. specimens are inserted in the drum, after which it is closed, and oil poured into the riser until the surface of the oil lifts to the graduation on the glass gauge. To remove included air bubbles, the container is shaken gently and then allowed to stand during various intervals. Any absorption by the mortar specimens is indicated by the subsidence of the meniscus in the glass gauge.

THE SUPPLY OF BRICKS.

An important conference between the brick manufacturers of East Denbighshire and adjacent localities, members of the Borough and Rural District Councils of Wrexham, and the Wrexham and District Local Employment Committee, was held at the Imperial Hotel, Wrexham, last Thursday, for the purpose of considering the situation regarding the brick-making industry.

The conference had been convened by Mr. Arthur E. Evans, chairman of the Employment Committee, who said that the Local Employment Committee had discussed the question of the brickworks in the Wrexham area for some considerable time, and in order that the brick manufacturers might be given an opportunity of stating their difficulties, Mr. H. F. Pentry, Chief Resettlement Officer, Ministry of Labour, and Mr. Harris, of the Building Material Supplies Department, had attended.

Mr. Pentry announced that the present position in the country regarding supplies of bricks was not serious. The Building Supplies Department of the Ministry of Munitions was not faced with any shortage of bricks. Of 1,450 selected sites for housing schemes only 400 had been approved by the Local Government Board, and of these about 235 had submitted lay-out plans, 75 of which had been approved. The general position was that up to the end of May only seven schemes were in operation.

Mr. E. Lloyd Edwards, speaking as one of the largest brick manufacturers in the Ruabon district, stated that the absence of private enterprise rendered the local works dependent upon Government orders. A very serious problem was the shortage of railway wagons. The result of the shortage was that they were continually having to cancel orders because people would not wait until the firm could obtain the wagons.

In reply, Mr. Pentry stated that this week a conference was to be held with the Railway Executive, when an effort would be made to obtain priority in railway wagons in connection with bricks, slates, cement, and other building materials.

Mr. J. Tysilio Jones suggested that brick manufacturers should put their heads together and arrange to use the raw material available for common bricks now practically lying waste, in order to compete with common bricks of another district. In getting good clay the top seams were not generally used in the district, being treated as refuse and left to lie in banks. There was no reason why this should not be utilised for the manufacture of a specially cheap brick.

Mr. Harris suggested that manufacturers should find out which of the waste clays could be weaned into common bricks to substitute the present high-priced common bricks. It was for the manufacturers to take action in this matter.

Mr. Pentry observed that brick manufacturers could move together in trying to produce low-priced common bricks in the manner already suggested. Something should be done to put their common bricks on a basis which would compete with other districts.

The conference concluded without arriving at any decisions.

Croydon Freemasons have before them a proposal for the erection of a temple where all the local lodges may meet.

SUPPLEMENTARY LIST OF SCOTTISH ARCHITECTS FOR HOUSING.

In their circular of February 22 the Local Government Board of Scotland forwarded for the information of local authorities the list of architects who had been placed on the panel as the result of the architectural competition which was authorised by the Board and promoted by the Institute of Scottish Architects, and in that circular the Board stated that they proposed to issue a supplementary panel list containing names of architects approved by them who had not taken part in the competition.

A large number of applications was received for inclusion in this supplementary list, and, at the request of the Board, a selection therefrom was made by the Institute of Scottish Architects. The Board, after communicating with the members of the Committee of Selection, have now approved the names suggested by the Institute, and the following is a list of the names and addresses of the architects who have been placed on the supplementary panel:—John Maurice Arthur, 4, Graham Street, Airdrie; Arthur Bolton, 31, St. David Street, Brechin; William Craig Boyd, 50, Wellington Street, Glasgow; J. H. Craigie, 212, St. Vincent Street, Glasgow; Alex. Davidson, Academy Street, Coatbridge; Reg. Fairlie, 14, Randolph Place, Edinburgh; A. M'Innes Gardner, 1, Bridge Street, Glasgow; A. G. Henderson, 257, West George Street, Glasgow; Alex. D. Hislop, 124, St. Vincent Street, Glasgow; David E. A. Horne, Golspie; J. Whitelaw Lockhart, 14, Cathcart Street, Ayr; T. M. Luman, 209, St. Vincent Street, Glasgow; A. N. Malcolm, Moranside, Polmont; F. C. Mears, 4, Forbes Street, Edinburgh; T. A. Millar, 9, Blythswood Square, Glasgow; J. Ineh Morrison, 24, Duke Street, Edinburgh; A. M. MacKinlay, 6, Castle Street, Rothesay; Alistair M. M'Michael, Commercial Bank House, Callander; James M'Nab, 121, West George Street, Glasgow; Alan G. MacNaughton, 137, West Regent Street, Glasgow; Gilbert F. M. Ogilvy, 6, Gray's Inn Square, London; Gavin Paterson, Cadzow Street, Hamilton; William Paterson, 3, Hope Park Terrace, Edinburgh; A. F. Balfour Paul, 16, Rutland Square, Edinburgh; R. S. Reid, 17, Young Street, Edinburgh; David Robertson, 53, Buccleuch Street, Dumfries; John Rogerson, Ochiltree, Cardross Road, Dumbarton; J. Allister Ross, Queensgate Chambers, Inverness; David Salmon, 242, West George Street, Glasgow; William Salmon, 6, High Street, Dundee; James Shearer, Crossford, by Dunfermline; John Stewart, Lanark; T. Aikman Swan, 29, Hanover Street, Edinburgh; J. D. Swanston, Kirkcaldy; James Thomson, Clydesdale Bank Buildings, Bo'ness; James Thomson, 7, Victoria Place, Airdrie; W. J. Walker Todd, 19, Young Street, Edinburgh; G. P. H. Watson, 5, Morningside Park, Edinburgh; William Williamson, Royal Bank Buildings, Kirkcaldy; Henry Wilson, Grangemouth; James Wright, jun., 261, West George Street, Glasgow; E. G. Wylie, 212, Bath Street, Glasgow; W. Barnett Wyllie, 196, High Street, Kirkcaldy; Alexander Young, 64, Victoria Street, Newton-Stewart.

JOHN T. MAXWELL.

Local Government Board, Edinburgh.

ARTIFICIAL GRAVEL.

In one of the American Southern concrete shipbuilding yards all conditions were favourable except that there was no rock or gravel at hand, and concrete is not to be made without it. Sand was there in abundance and so was clay, but mud ships have not yet been accepted as reliable carriers on the deep seas.

Clay is curious stuff. Chemically speaking it is a mixture of hydrated aluminum silicates with impurities in great variety. The geologic history, however, is often more important than its exact chemical composition, for the conditions under which it has existed for the preceding hundred thousand years or so have a great bearing upon the size and structure of its particles; and in practice the physical nature of the particles of a substance has a great deal to do with its chemical behaviour. The children of Israel needed straw to make brick, not that the straw fibre should serve as a binder, but because of a colloidal substance contained in straw which caused the particles of defective clay to bake into first quality product. It was a mean trick of the Egyptians to withhold straw, and it was bad manufacturing practice, too.

Research with the Southern clay showed that if it is fired at the proper rate and temperature very hard and porous lumps of the desired size result. Concrete made with them has practically the same crushing strength as that made with crushed rock. So proper apparatus was installed and the product used as aggregate. Owing to its porous nature it is very light, but the completed ships stood up to all the tests and proved to have a carrying capacity compared to dead weight clear above that of wooden or other concrete ships, and nearly equal to those built of steel. A standardised contractor without the aid of a good chemist would have moved the yards or imported gravel.—*Little Journal*.

OBITUARY.

The death of Mr. Joseph Hewins, partner in the firm of Hewins and Goodhand, Limited, builders and contractors, has removed one who had been connected with Grimsby trade and progress for something like half a century. The firm of Messrs. Riggall and Hewins, which later became Messrs. Hewins and Goodhand, has erected a very large number of buildings at Grimsby. They laid the first tramway there, built Marshall's mill, the workhouse, the Prince of Wales Theatre, the Palace Theatre, the Dolphin Hotel, Cloethorpes, besides schools, churches and chapels, etc. Some few years ago Mr. Hewins was seized with an illness from which he never recovered. For the last two or three years he had been unable to attend to any business, and died at his residence, "Grantham House," Heneage Road, at the age of 76 years. The funeral took place at North Thoresby (deceased's native place), and was attended by the officers and brethren of the Smyth Lodge of Freemasons, and representatives from the Grimsby and District Master Builders' Association, and the Grimsby Brick Co., Limited. Deceased leaves a widow and one daughter.

We regret to record the death of Mr. William Vincent Jull, partner in the firm of Messrs. Horne and Co., auctioneers and valuers, 85, Gresham Street, E.C., and 35, Old Queen Street, Westminster, on June 15, at 3, Aberdeen Court, W., at the age of 56 years. Mr. Jull, who had been ill for some time, had been connected with the firm for practically 40 years, and he held the position of partner for upwards of 20 years. Educated at Brighton Grammar School, he passed the Professional Associates examination of the Surveyors' Institution in 1886, and became a Fellow of the Auctioneers' and Estate Agents' Institute in 1899. He acted as superintendent in clearing the sites of Millbank Prison, the General Post-Office, St. Martin's-le-Grand, Christ's Hospital and the present Law Courts, also acting as auctioneer to the firm for the important sales of Government materials at Woolwich Arsenal, and for the Great Western Railway over a period of 25 years. Mr. Roy Lancaster, who is now sole partner, will continue to carry on the business.

ADVISORY COUNCIL ON HOUSING.

The President of the Local Government Board, Dr. Addison, has appointed an Advisory Council to give advice and assistance to the Local Government Board in connection with the Government Housing Scheme. He says he hopes to make constant use of this Council in the consideration of many large questions which are arising, and to arrange also that the Council shall be a nucleus from which sub-committees will be formed, with additional members, to consider detailed and technical questions.

The Council will be under the Chairmanship of Sir J. Tudor Walters, M.P., who was Chairman of the Committee on Building Construction, and is also Chairman of the Housing Group of the House of Commons. The following is a list of the other members of the Council:—H. B. Aldridge, Esq., Secretary of the National Housing and Town-Planning Council; Neville Chamberlain, Esq., M.P., ex-Lord Mayor of Birmingham; W. Dunn, Esq., F.R.I.B.A.; Sir Gilbert Garnsey, K.B.E., Financial Adviser to the Ministry of Munitions; the Right Hon. Henry Hobhouse, Chairman of the Somersetshire County Council and Vice-Chairman of the County Councils Association, Chairman of the Housing (Financial Assistance) Committee appointed by the Minister of Reconstruction; G. W. Humphreys, Esq., Chief Engineer to the London County Council; R. L. Reiss, Esq., Secretary of the Garden Cities and Town-Planning Association, member of the Hobhouse Committee on Housing (Financial Assistance); E. Selby, Esq., F.S.I.; E. J. Brown, Esq., member of the Joint Industrial Council for the Building Trades; R. Wilson, Esq., Secretary of the Amalgamated Slaters' and Tylers' Provident Society, member of the Joint Industrial Council for the Building Trades; Lady Emmott, Chairman of the Women's Housing Sub-Committee of the Advisory Council of the Ministry of Reconstruction; Mrs. E. Barton, member of the Women's Housing Sub-Committee; Mrs. Sanderson Furniss, member of the Women's Housing Sub-Committee, member of the Executive Committee of the Garden City Association. The following questions have already been under the consideration of Sub-Committees of the Council, under the chairmanship of the members named below:—Standardisation of materials and the use of new methods of construction (Chairman, Mr. W. Dunn). Revision of forms of contract (Chairman, Mr. G. W. Humphreys). Revision of forms of specification and schedules (Chairman, Mr. E. Selby). Financial Safeguards required in connection with Housing Schemes (Chairman, Sir Gilbert Garnsey).

COMPETITIONS.

NEWCASTLE-ON-TYNE.—In connection with the Walker Housing Scheme prizes of £145 17s., £50, and £25, for the best plans have been awarded as follows:—1, Messrs. F. L. Thompson, R. Dann, and S. P. Taylor, London; 2, Messrs. Cackett and Burns Dick, Newcastle; 3, Mr. J. G. Cooper, Norbiton, London. Mr. W. A. Harvey, of Birmingham, was the assessor.

In connection with the Wigston U.D.C.'s housing scheme Messrs. Stockdale Harrison and Sons, of Leicester, have been appointed architects. Two sites have been selected on which to erect 50 houses on each.

The Birmingham City Council has accepted its Housing Committee's proposal to build 95 houses, and resolved to ask for sanction to borrow £76,000 to cover the cost, which was estimated at £300 per house. To get a 5 per cent. return a weekly rental of 21s. 6d. will be needed. It is proposed to build smaller houses without parlours on some estates.

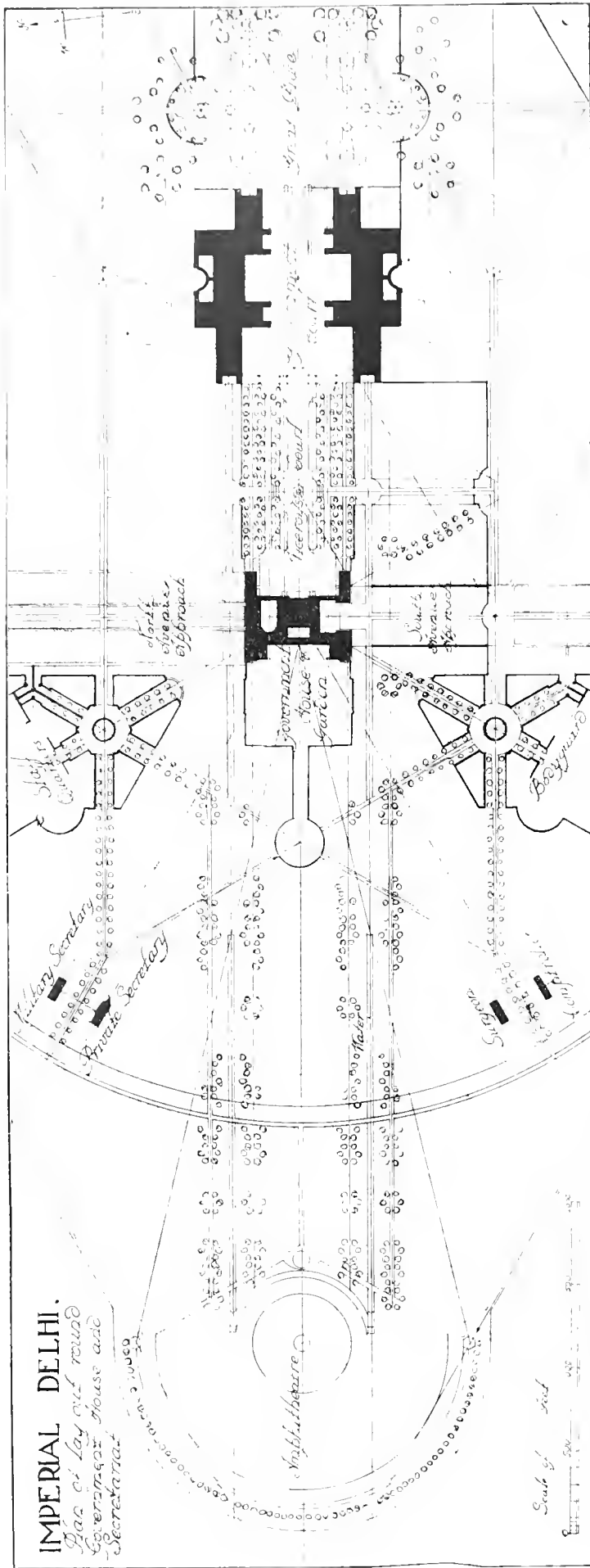
At the meeting of the Institution of Municipal and County Engineers at Bolton a silver coffee and tea service and an illuminated address were presented to Mr. Samuel S. Platt, late borough engineer of Rochdale, and for many years chairman of the North-Western District, on the occasion of his retirement from public life and service. The presentation was made by the president, Mr. T. W. A. Hayward, in a felicitous speech.

The Local Government Board has refused to sanction the purchase by the Hanwell Council of 40 acres of land from the Earl of Jersey, at a cost of £13,500, on the grounds that the price is exorbitant and that the land, situated near a sewage disposal works, is unsuited to the erection of workmen's houses.

Lieut.-Colonel Fry, C.M.G., D.S.O., R.E., who has resumed his practice as an architect at Weston-super-Mare, was the first member of the Society of Architects, and probably the first architect to win the D.S.O. He was recently gazetted to the honour of C.M.G. Mr. R. M. Butler, of Dublin, a past member of the Council of the Society, was elected a member of the Royal Irish Society on St. Patrick's Day. This is an honour which is sparingly conferred, and Mr. Butler is the only architect who has been elected to membership of that distinguished body.



THE BUILDING NEWS, JUNE 25, 1919.



PLAN ILLUSTRATING RELATIVE POSITION OF GOVERNMENT HOUSE AND THE SECRETARIAT BUILDING, DELHI.
SIR EDWIN L. LUTYENS, A.R.A., and MR. HERBERT BAKER, F.R.I.B.A., Architects.

THE BUILDING NEWS, JUNE 25, 1919





W. Walden, Del.

INTERIOR OF GARDEN LOGGIA, GOVERNMENT HOUSE, IMPERIAL DELHI.
Sir Edwin L. Lutyens, A.R.A., Architect.





VIEW FROM AN ARCHWAY OF WESTMINS
Lent by The King, from the Royal Library, Windsor Ca

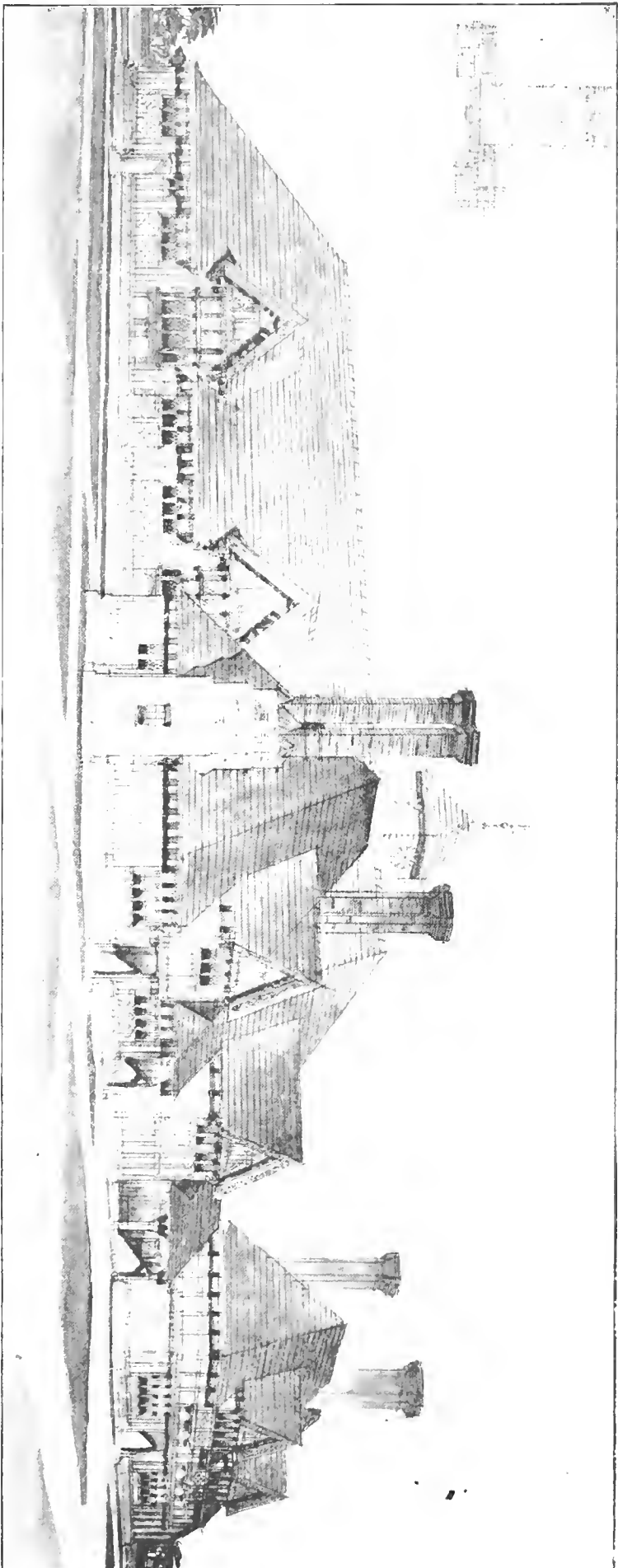
JUNE 25, 1919.



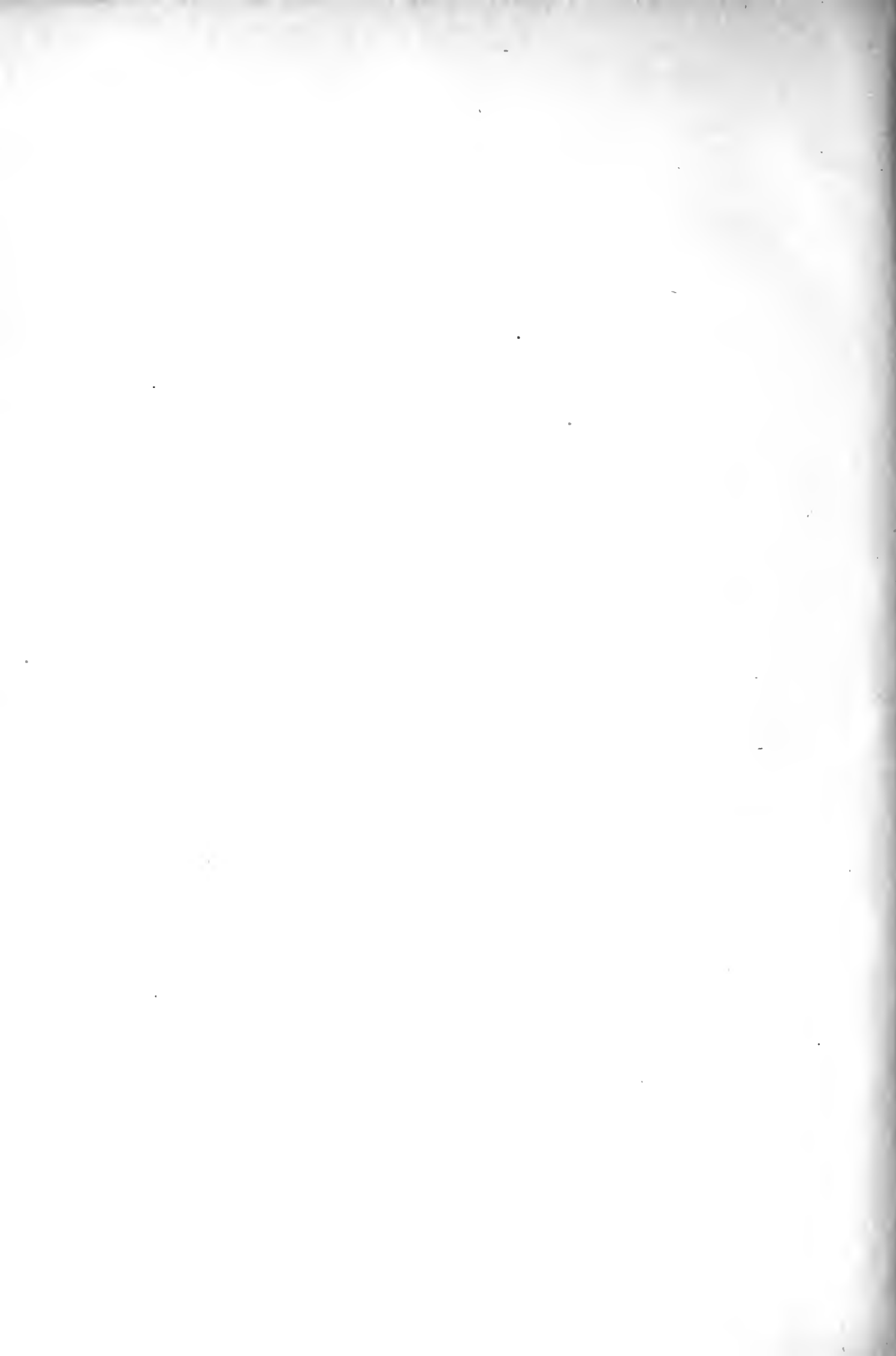
R BRIDGE, LONDON, 1746-1748. By CANALETTO.
to the Exhibition of the Burlington Fine Arts Club.



THE BUILDING NEWS, JUNE 25, 1919.



VILLAGE CHURCH, NEAR STOKESAY, SHROPSHIRE.
MR. BRYANT A. POLLER, F.R.I.B.A., Architect.



CONCRETE AS A CHEMICAL ENGINEERING MATERIAL.*

By MAXIMILIAN TOCH.

It may truly be said that this is the age of concrete. What progress would our new factories have made after this country went into war, when steel and iron were unobtainable, had it not been for the ability to use portland cement in its place? It is no criticism to say that portland cement concrete is an unfinished material when used in the erection of chemical works. No floor in any factory will last very long made of portland cement and sand, unless it is treated in some manner. I have seen instances where the concrete foundations of vinegar tanks were decomposed until they resembled a material like cheese, owing to the solvent action of acetic acid. I have seen foundations of motors and machinery where the oil drippings disintegrated concrete in a relatively short period. I could cite many mere cases, but these will suffice. There are a great many materials which preserve portland cement construction against acids, alkalis, oil and saline solutions, and there is no one material which may be regarded as a panacea for all the defects of concrete. When the defects of concrete are mentioned I must again impress upon you that I am not criticising the material; but a concrete sidewalk is about the only cement construction of any magnitude that I can recall which needs no treatment to make it waterproof, wearproof and weatherproof.

DEFECTS OF CONCRETE CONSTRUCTION.

Take the case of a concrete floor in a room where there is delicate machinery. In a short time the particles of sand and broken stone which form the composite of the concrete become loosened, float around in the air and lodge on the contact points of this delicate machinery. Take the case of foundations in chemical works, where acids and alkalis drip on the foundations. Take the case of concrete foundations of factory buildings on a waterfront, where niter cake and sludge acids are discharged in the stream, and you will soon erode the concrete foundations. All this is due to a very simple chemical problem. Portland cement has been described so often that I do not need to go into its chemical composition other than to say that when it is mixed with water it generates lime and the lime forms a glutinant material which binds the particles together. This same condition is identical in all mortars, and the common, ordinary lime mortar of building material, while it contains a much greater amount of lime than portland cement, is weaker in every respect than portland cement itself. Lime is slightly soluble in plain water and is relatively more soluble in salt water. This accounts for the disintegration of portland cement at the seashore. Any acid, no matter how weak, forms a chemical combination with lime; when the lime is attacked in portland cement the structure crumbles.

There are a large number of methods used for the protection and preservation of portland cement; and, as I have said before, there is no single method applicable in every case. Our Government and every other Government have had an enormous amount of trouble in building dry docks which would withstand sea water, even though some of these dry docks were faced with granite or other building stones, because the building stones must be cemented together with a mortar containing lime in some form. A very interesting case developed in one of the large dry docks in New York Harbour, where the sea walls were waterproofed with an integral material, but where the bottom was not waterproofed, and after a lapse of five years the solvent action of the salt water attacked the bottom, but left the sides untouched. But the greatest problem of all is the construction of foundations, vats and storage buildings for chemical materials which should be proof against acids and alkalis under normal conditions. Up to within two years ago no one ever thought of building storage warehouses of concrete for the storing of large quantities of niter cake. This material, as you know, is an acid sulphate of sodium

containing as high as 30 per cent. of free sulphuric acid, and yet it has been possible to build successfully such a storage building which would house niter cake and not attack the walls and floors made of concrete. In a case like this it is necessary to use two methods—one, an integral method, and in addition to this, a surface coating which will be acidproof.

CONCRETE TANKS FOR STORAGE OF OIL.

The great scarcity of boiler plates for the building of large tanks forced our own Government to build tanks for the storage of fuel oil of concrete; and, as there are two kinds of fuel oil—the very heavy Malta, of the West Coast, and the thinner type of Pennsylvania and Ohio—it soon becomes obvious that the Malta or Western type could be stored in any kind of a pit made of any material, but the Eastern oil would soon destroy the crystalline structure of portland cement and leak through. So it became essential to find methods of making concrete oilproof, and in this again the integral plus the surface coating method are essential.

To use a very homely comparison, and one that is somewhat graphic, I must frankly state that unless the engineer's specifications are strictly carried out, failure will inevitably result and no material should be blamed for a lack of supervision. To write a specification for concrete and chemical engineering construction is not an easy matter, and unless the inspector is intelligent and watchful, failure may result. I always think, in this connection, of the case of the man who went into a restaurant and called the waiter, and explained to him the kind of steak that he wanted. He insisted that the steak should be an inch and a half thick and six or seven inches long, and it should be grilled over a coke fire for forty-five minutes at a distance of one foot from the fire; that after it was grilled it should be smothered with mushrooms and onions and then allowed to seep for ten minutes and placed on a hot plate and served to him. The waiter, after having carefully listened to these orders, walks over to the kitchen and yells "One steak." This is a very fair example of how many specifications are carried out and how engineering materials are blamed for the lack of carrying out the orders carefully.

WHO WILL OCCUPY THE STATE HOUSES?

Sir Kingsley Wood, M.P., Parliamentary Private Secretary to the President of the Local Government Board, speaking at a housing campaign meeting at Chatham last Thursday night, said there were many inquiries as to what class of people were to have the benefit of the Government's housing scheme. Were they only to be the working classes in the old meaning of the term? Were the occupants only to be the manual labourer or artisan, or were the bank clerk, the journalist, or the small shopkeeper to be excluded?

The Housing Bill made no attempt at such distinction. What, in fact, would be provided was the working class house. It was impossible to attempt an investigation of the status, occupation, or wages of each occupant, or lay down some other rigid test. The houses were certainly not intended for week-end cottages, and local authorities must satisfy themselves that they were occupied by bona-fide working people. The Government were aiming at a good-class standard of working-class housing, and would sanction only such schemes as made such provision. Why should not the poor-paid curate or the struggling professional man share in the advantages of the State scheme?

What was to be the rent of the houses? Obviously there could not be a standard rent throughout the country. The local authorities would fix them with the sanction of the Department, having regard to the locality and the rent of similar accommodation in the particular district. The economic loss thus entailed would be worth bearing if it resulted in a contented and healthy people, but it was no part of the scheme to subsidise wages.

PLENTY OF MATERIALS.

The question was constantly asked, Where was the material for the new houses? It

could be authoritatively stated that there was an adequate supply of all essential kinds to meet all present demands, and no building scheme need to-day be held back for want of essential materials. The great difficulty was labour, and it would be a growing difficulty. It was anticipated there would shortly be held a conference of the Building Trades Industrial Council to hammer out a solution to an extremely difficult situation. They wanted cottages first and cinematographs second.

THE ARCHITECTURAL ASSOCIATION.

A special course on Housing and Communal Planning, under the direction of Mr. Robert Atkinson, F.R.I.B.A., will be held between July 14 and August 8 at 34-35 Bedford Square, W.C., commencing at 5 p.m.

The course will include a series of lectures, visits, and work in the studio.

The subject will be treated from the point of view of present-day requirements, and will deal with all matters affecting the planning of towns and villages, and the lay-out of open spaces, etc.

Economic housing and the equipment of the small house will be fully considered.

The studio work, which will commence at 10 a.m. each day, will be supervised by Mr. Robert Atkinson, F.R.I.B.A., assisted by Mr. Robert Lowry, A.R.I.B.A., and Mr. L. H. Bucknell, A.R.I.B.A. Professor A. E. Richardson will visit the studio on two afternoons a week, and will also give various lectures and demonstrations.

The following is a syllabus of general lectures already arranged. The list of visits will be issued later.

July 14, Mr. Raymond Unwin, F.R.I.B.A., "The Relation of Town Planning to Housing." July 16, Prof. S. Adshad, F.R.I.B.A., "The Growth and Development of a Town." July 18, Mr. Henry Aldridge (Secretary, National Housing and Town Planning Council), "The Position of the Architect under the Housing Policy of the Government." July 21, Mr. R. S. Weir, "The Country Village; Rural Housing and Rural Life." July 23, Mr. Hamilton Smith, "The Furnishing of the Small House." July 25, Prof. A. E. Richardson, F.R.I.B.A., "Historical Motifs and their Adaptation to the Modern House." July 28, Mr. W. Foxton, "Coloured Textiles for the House." July 30, Mr. F. Broadhurst Craig, M.I.H.V.E., "Heating, Cooking and Lighting." August 1, Mr. H. V. Lanchester, V.P.R.I.B.A. (Subject to be announced later). August 6, Dr. Oscar Faber, O.B.E., A.M.I.C.E., etc., "The Application of Concrete Construction to Cottages." August 8, Mr. Robert Atkinson, F.R.I.B.A., "The Decorative Treatment of Accessories."

The fee for the full course, including lectures, will be five guineas. Tickets for evening lectures only may be obtained on application, price one guinea.

F. R. YERBURY, Secretary.

GOLD MEDAL NIGHT AT THE R.I.B.A.

The Royal Gold Medal which is yearly awarded to some distinguished architect or man of science or letters who has designed or executed a building of high merit, or otherwise promoted architecture, was last Monday night presented to Mr. Leonard Stokes at the general meeting of the R.I.B.A. at 9, Conduit Street, W.

Mr. Henry T. Hare, the president, who was in the chair, said Mr. Stokes's name had always been associated with architectural works of the highest excellence and very strongly marked character.

Among others who congratulated Mr. Stokes was Sir Aston Webb, President of the Royal Academy, who said that the gold medallist's works had stood the test of time better than those of anybody he knew.

Mr. Stokes, in acknowledging the presentation, paid a tribute to the President, whose term of office, he said, had been peculiarly difficult.

The Carrick-on-Suir U.D.C. has requested Mr. Scully, of Waterford, to prepare plans for building 100 workmen's houses.

* Address before the Am. Inst. Chem. Eng.

Our Office Table.

A large contract for constructional engineering in Holland has just been accepted by a German firm on terms much below those of a British tender. The business, says the "Times," which amounts in the aggregate to a very large sum, has been accepted by the German firm at about £20 per ton less than the figure tendered by a leading British company. The price quoted in the German tender for the fabricated constructional work to be supplied is actually below the price quoted for the raw material as delivered by the rolling mills in this country. Costs of transport, therefore, do not account for the discrepancy. How the German firm was able to offer such low terms is a mystery to the British company. The willingness of the German house to undertake work on such conditions indicates the nature of the industrial competition which is now to be expected.

The Roman villa at Brading, Isle of Wight, one of the most important remains of the kind in the kingdom, has been broken into and a fine collection of 19 Roman coins stolen. Archaeologists and numismatists from all parts of the world have visited the Roman villa which was discovered in 1884 at the "Kyng's Towne of Bradinge," so named by its early Saxon settlers. Entrance to the villa was effected through a window on the westerly side. The stolen coins were enclosed in two glass cases, which were broken. One card was stripped of coins mounted upon it. The other card was removed intact.

According to last Wednesday's *Labour Gazette* there was an improvement in the state of employment during May. The number of unemployed persons whose out of work donation policies remained lodged at Employment Exchanges fell from 1,093,328 on April 25, to 777,211 on May 30, a reduction of 322,117. Increases in wages which came into operation in May affected 350,000 workpeople, and 500,000 were affected by reductions in the hours of labour. The general level of retail prices of food and other items entering into the cost of living remains about 105 per cent. above the pre-war level.

The report of the directors submitted to the shareholders of Waygood-Otis, Limited, at the nineteenth ordinary general meeting, held at the Cannon Street Hotel, Cannon Street, E.C., yesterday, stated that the profit for the year, after providing for all expenses and depreciation, amounts to £27,252 12s. 4d., added to which the balance of last year's profit and loss account £17,403 1s. 7d., makes a total of £44,655 13s. 11d. Of this sum the dividend paid on the Preference shares absorbs £18,000; there has been placed to reserve account £6,000, leaving a balance of £20,655 13s. 11d. Out of this sum the directors propose to pay on July 15 next a twelve months' dividend on the Preference shares for the year ending July 15, 1919, which includes all arrears, and recommend that a dividend be declared for the year ended March 31, 1919, of 2½ per cent. on the Ordinary shares, payable on July 15, 1919, leaving a balance of £5,405 13s. 11d. to carry forward. The directors record with regret the death of their esteemed colleague, Mr. H. Cecil Walker, who had spent the whole of his business career with the company. It is not proposed to fill the vacancy caused thereby at the present time.—Mr. Henry C. Walker and Mr. C. H. J. Day, in accordance with the Articles of Association, retire, and being eligible offer themselves for re-election.—The auditors of the company, Messrs. Thorne, Lancaster, Farey and Reacher, retire, and offer themselves for re-election.

The Controller of Timber Supplies states that excessive prices have been asked for yellow pine in spite of the announcement made on May 20 that there was no reason for exceeding the maximum prices in force up to March 31. The Controller gives notice that, if these excessive prices are continued he will have no option but to dispose of Government stocks direct to consumers at prices not higher than the late maximum prices. No further notice will be given should this action be found necessary. The Controller requests any firms who are asked more than the late

maximum prices to send full particulars to the Assistant Controller of Timber Supplies, Branch 5, 80, Newman Street, Oxford Street, London, W.1. For timber stored by retail yard keepers there is no objection to prices being raised by not more than £4 per standard.

Recent explorations at St. Augustine's College, Canterbury, have led to further discoveries in the field, which includes part of the site of the old monastery founded by King Ethelbert and St. Augustine in 598. A boundary wall covering the north aisle of the nave was taken down, and further excavation has revealed the remains of the northern porticus, or chapel, with the tombs of the Archbishops just as Gocelin, the Flemish monk, who came to England in 1058, describes them. He also describes the corresponding south porticus, with its tombs where first lay Ethelbert, Bertha, Letard, her chaplain, Eadbald and Emma, and others. These and the adjoining chapel of St. Anne, to which the Royal remains were translated in 1091, are beneath the hospital laundry. To carry on the excavations it will be necessary to remove and rebuild this and the hospital mortuary, at a considerable addition to the cost of the work. It is estimated that those in charge of it will require £3,000 to expose to view the whole ground plan of the church. Contributions to the Excavation Fund may be sent to the Rev. R. U. Potts, Sub-Warden, St. Augustine's College, Canterbury.

Definite proposals for the widening of the Strand and Wellington Street have now been made by the Improvements Committee of the London County Council, who estimate the total cost at £87,500. It is hoped by these improvements to lessen the traffic congestion at the junction of Wellington Street and the Strand, and the widening of Wellington street will also be of great importance in the event of a widening of Waterloo Bridge. The Committee propose to buy from the Duchy of Lancaster the following properties on the west side of Wellington Street:—The whole of 15, Wellington Street, parts of numbers 13 to 1 (odd numbers) and 10, Lancaster Place. They also propose to buy part of the Savoy Palace public-house in Savoy Street, and parts of Nos. 125 to 129, and the whole of No. 130 in the Strand, just west of Wellington Street. Under a valuation made in 1913, the Council, it is proposed, will pay the Duchy £63,250, but the money is not to be paid until Treasury consent has been obtained. The Strand will be widened from its present width of 66½ ft. to 69 ft. at this point of 80 ft., and Wellington Street will be increased in width from 65 ft. to 85 ft. The conveniences in the middle of Wellington Street will be removed, and a subway under the street from east to west will be provided. The Duchy of Lancaster undertake, in the event of the rebuilding of the south end of Savoy Street, to convey land to widen the street to 40 ft. These proposals cannot be carried through until Parliamentary sanction has been obtained.

The new housing schemes submitted for approval to the Local Government Board by Local Authorities and Public Utility Societies during the week ended June 14, numbered 187, representing an area of about 1,800 acres, bringing the total number of state-aided housing schemes to date to 2,231, representing about 28,000 acres. Among the 187 schemes of the week are included two schemes from the London County Council. These are continuations of old schemes begun under the general powers of the London County Council, who have also obtained special powers by the local Act of 1912 to develop certain lands at White Hart Lane, Tottenham, on the lines of a Garden City. Also included in the return are schemes from the County Councils of Surrey and Huntingdon, parts of larger schemes for the housing of employees. The number of sites, lay-outs and house plans approved by the Board during the week is greater than in any previous week, the sites comprising 1,125 acres and the house plans 1,040 houses. At the end of the week actual house construction had been begun by 8 local authorities (upon 884 houses) and by 9 public utility societies (upon about

350 houses). Work upon sewers and streets had also been begun by 15 other local authorities. In addition "building to begin in a few days time" was reported in the case of 1,596 houses, 1,100 of which are in schemes promoted by local authorities and 496 in Public Utility Society schemes. Returns of house building by private enterprise are not complete but nearly 1,650 of such houses are known to be in the course of erection.

To-morrow the dedication is to take place in Shotley Churchyard of the memorial erected to the memory of the officers and men of H.M.S. Maidstone submarine service, who lost their lives in the war. The memorial is from the design of the honorary architect, Mr. A. F. Ryan Tenison, F.R.I.B.A., 12, Princes Street, Hanover Square, London, W.1, the figure and special features being modelled for him in the studio of Mr. F. Brooke Hitch, and some of the castings being executed by the men of H.M.S. Maidstone, under the superintendence of Engineer Commander Ham. R.N. The memorial, which stands in a special compound, consists of a Portland stone obelisk with octagonal base, and bronze dolphins as terminals, bronze plaques, etc., as special features. The compound is enclosed by carved oak posts and rails, with special carvings, the whole being approached through a lych-gate at the east end of the enclosure. The lay-out has been very carefully considered, with the object of providing each grave with a cross, specially designed, or headstone, the whole being treated as a special garden cemetery. The architect and the contractor have been throughout ably assisted by Mr. Warren. R.N., and a working party from H.M.S. Maidstone. A cousin of the architect's (Lieut. Julian Tenison) and his crew lie buried in the compound.

LEGAL INTELLIGENCE.

DOGSTHORPE AND WHITTLESEY BRICK COMPANIES' CLAIM AGAINST THE WAR OFFICE FOR LOSS OF PROFITS.—A claim for loss of profits owing to the commandeering of the works by the War Office, was made last Friday by the Star Press Brick Company (Whittlesey), Ltd., and the Dogsthorpe Star Brick Company, Ltd., before Mr. W. F. Hamilton, K.C., under the Defence of the Realm Losses Commission. Mr. Peter Ferguson, a director of the London Brick Company, said that after Major Hill and his late brother, Captain Hill, went away, he acted as a sort of "godfather" to the Whittlesey and Dogsthorpe Works. There was a gradual diminution of trade after the war, and the manufacture of bricks at Whittlesey ceased in the autumn of 1915. The demand for bricks revived, and if the works had not been taken over by the Government in April, 1916, it had been intended to re-open the Whittlesey works in June or July. Major Hill remarked that after the war broke out the policy agreed on by him and his brother was to close one of the two works and manufacture at full pressure at the other, so as to keep the stock up, and then close that one and operate the other, alternating the use of the two works. The Chairman: In April, 1916, what was the condition of things in the brick trade round Peterborough? Mr. Ferguson: At the beginning of 1916 it was just beginning to revive, 1915 was the worst year. In reply to Mr. S. G. Turner, representing the War Office, witness stated that the London Brick Company's stock in 1915 was 18½ millions, and the following year it was 13¼ millions. They manufactured throughout the war. There was a rapidly increasing demand for bricks in mid-summer, 1917. The Chairman: Supposing the Peterborough yards had all been open, would they all have enjoyed increased trade?—From mid-summer, 1917, and onward, yes. We know the Whittlesey works were prosperous before the war. Supposing the works had not been taken over, when do you think they would have had a return to prosperity after the stagnant period at the beginning of the war?—About mid-summer, 1917. You think that from that time and subsequently they would have been doing as much work as before the war?—Yes. By Mr. Turner: The increased demand from mid-summer, 1917, was due to Government requirements. Mr. Turner pointed out that in 1917 the Air Ministry demanded 40,000,000 to 50,000,000 bricks, and in 1918 the Ministry demanded 80,000,000. He produced estimates showing that five Peterborough works with annual capacity of 250,000,000 bricks, manufac-

tured during March, April, May, and June, 1918, only 32 per cent. of their capacity, but said he would make a generous allowance to the claimants, and say they manufactured up to 40 per cent. of their capacity. Dogsthorpe, it was stated, was commandeered in January, 1917, and the capacity of the two works was about 12,000,000 bricks each. Mr. Turner: Whatever time Whittlesey would have arrived at normal trading the amount of its trade would have been 32 per cent. of its capacity? Mr. Ferguson: I consider that too low. Mr. Turner: I think I have been generous in view of the fact that the works would have ceased, for the time being, to carry on after the beginning of the war. Re-examined by the Secretary of the Company, witness said neighbouring works were running all the time, and the Company bought bricks which otherwise they could have made themselves. Major Hill, managing director, said that after the war started they had full stocks, but they could not manufacture an unlimited quantity because of the difficulty of finding room to stack bricks on the ground within a reasonable distance. They recognised that there would be a large demand for bricks after the war, and they would have been prepared to go on manufacturing for a considerable period if there had been room. They decided to concentrate on one yard, but that was purely a temporary measure and they were ready at all times to resume at both works. He did not like having the Government in the works at all as he was anxious to get going again. Whittlesey and Dogsthorpe were in a better position to manufacture than the five companies referred to. He was a director of the London Brick Company, which would have been in a position to help his undertakings. He had not the slightest hesitation in saying that they would have made a considerable profit if they had reopened. They had always done as well, and in some cases better than their neighbours, and he submitted that they were entitled to compensation on the basis of a pre-war average of profits. Cross-examined, he said he did not suppose they would have made a bigger profit than the London Brick Company, but they could have produced more proportionately. A representative of the War Office stated that the demand for bricks in 1918 was 269,000,000, and the Brick Controller issued permits for 217,500,000 for Government Buildings. Up to the end of 1916 the general policy was to construct of wood and corrugated iron, but a shortage of wood began to be felt and wood was too costly. Bricks were then used. There was a considerable demand for bricks in 1917, and that was doubled in 1918. The claimants adopted the evidence for Whittlesey, for the case of Dogsthorpe, with the addition of a claim for reinstatement. The Chairman said he would communicate his decision after he had read and considered the evidence.

INJUNCTION AGAINST A COVENTRY BUILDER.—In the Chancery Division, on June 17, before Mr. Justice P. O. Lawrence, the Dawson Car Co., Limited, Coventry, moved for an injunction against William Winnett, builder and contractor, of Haven Lodge, Clay Lane, Coventry, to restrain the latter from removing fencing or soil from certain land in Clay Lane, or commencing building operations thereon, until judgment has been given in an action brought by the plaintiff company against defendant. By this action plaintiffs demanded the specific performance of an agreement between the parties, contained in a letter dated February 7, 1919, written by the defendant with respect to the sale by him of certain hereditaments in Clay Lane. At the time of the alleged agreement plaintiffs were called the Clay Lane Engineering Co. Defendant did not appear to answer the motion, and Mr. Dighton Pollock, who represented the plaintiffs, read affidavits to show that defendant had removed fences, made excavations, and deposited large quantities of building material on the land. An injunction against the defendant was granted, plaintiffs undertaking to accept short notice of motion for the discharge of the injunction.

The most economical kitchen floors are made of concrete, on to which is floated, while the concrete is "green," a 1-in. thickness of water-proofed cement, mortar or granolithic concrete. The floor should be covered at the junction of the walls to prevent the lodgment of dust in the corners. A most durable skirting is formed by continuing the cement floating for a few inches up the wall. The floor cement may be impregnated with one of many pleasing colours, which are sold by all drysalters and colourmen, a list of which may be obtained, free of cost, from Messrs. Kerner, Greenwood and Co., Limited, King's Lynn.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

Maximum prices at which imported timber may be sold have now been fixed by the Controller of Timber Supplies till further notice. They are too long to quote here; but will be found in the "London Gazette" of Feb. 7, 1919.

IRON.

Rolled Steel Joists, English.....	Compound Girders, Ordinary Sections.....	Prices controlled by Ministry of Munitions.
Compound Stanchions.....	Angles, Tees, Channels and Flitch Plates.....	
Wrought-Iron Girder Plates.....	Steel Girder Plates.....	
Steel Sheets (Single or Double).....	Steel Strip.....	
Basic Bars.....	Mild Steel Bars.....	
Steel Bars, Ferro-Concrete.....	Quality (basis prices).....	

OTHER METALS.

Lead Water Pipe, Town.....	Per ton.	Per ton.
Country.....	£38 10 0	—
" Barrel Pipe, Town.....	£39 10 0	—
Country.....	£41 10 0	—
Lead Pipe, tinned inside, Town.....	£42 10 0	—
Country.....	£43 10 0	—
Lead Pipe, tinned inside and outside.....	Town.....	£46 0 0
Country.....	£47 0 0	—
Composition Gas-Pipe, Town.....	£43 10 0	—
Country.....	£44 10 0	—
Lead Soil-pipe (up to 4 1/2 in.) Town.....	£41 10 0	—
Country.....	£42 10 0	—
" (Over 4 1/2 in. £1 per ton extra.)	—	—
Lead, Common Brands.....	£38 0 0	—
Lead, 4lb. sheet, English.....	£38 0 0	—
Lead Shot, in 28lb. bags.....	—	—
Copper Sheet, Sheathing & Rods.....	168 0 0	170 0 0
Copper, British Cake and Ingot.....	147 0 0	150 0 0
Tin, English Ingots.....	285 0 0	—
Do., Bars.....	186 10 0	187 10 0
Pig Lead, in low Pigs Town.....	£3 12 0	£4 12 0
Sheet Lead, Town.....	£38 0 0	—
Country.....	£39 0 0	—
Ganules White Lead.....	£47 10 0	—
Refined Red Lead.....	£39 0 0	—
Sheet Zinc.....	£39 0 0	—
Spelter.....	£39 0 0	110 0 0
Old Lead, against account.....	£22 10 0	—
Tin.....	£14 5 0	—
Cut nails (per cwt. basis, ordinary brand).....	£1 12 0	—

* For 5 cwt. lots and upwards.

BRICKS.

(All prices net.)

First Hard Stocks.....	£4 0 0	per 1,000	alongside, in
Second Hard Stocks.....	£3 15 0	"	river
Third Hard Stocks.....	£1 14 0	"	"
Mild Stocks.....	£2 2 0	"	"
Picked Stocks for Facings.....	£3 5 0	"	delivered at
Flettons.....	£2 8 0	"	raily station.
Best Fareham Red.....	£4 0 0	"	"
Best Red Pressed.....	£5 15 0	"	"
Ruabon Facing.....	£5 15 0	"	"
Best Blue Pressed.....	£7 17 6	"	"
Staffordshire.....	£8 2 6	"	"
Ditto Bullnose.....	£8 2 6	"	"

WHITE AND COLOURED GLAZED BRICKS.

WHITE, IVORY, AND SALT GLAZED, 9IN. x 4 1/2 IN. x 2 1/2 IN.	Best,	Seconds
	Per 1,000.	Per 1,000.
Stretchers.....	£21 10 0	£20 10 0
Headers.....	£21 0 0	£20 0 0
Quoins.....	£26 10 0	£25 10 0
Bullnose.....	£26 10 0	£25 10 0
4 1/2 Flats.....	£26 10 0	£25 10 0
Double Stretchers.....	£28 10 0	£27 10 0
Double Headers.....	£25 10 0	£24 10 0
1 side and 2 ends.....	£29 10 0	£28 10 0
Spays & Squints.....	£28 0 0	£27 0 0

Best Buff, Cream and Bronze, £2 per 1,000 extra on Best Whites.

Other colours, Hard Glaze, £5 10s. per 1,000 extra on Best Whites.

Moulded Stretchers or Headers, 1s. 2d. each.

Majolica and soft glazed Stretchers or Headers, £32 per 1,000.

Majolica and soft glazed Bullnose, £38 10s. per 1,000.

NOTE.—Above prices are in full truckloads at London Goods Station.

SAND AND BALLAST.

Thames Sand.....	16 6	per yard, delivered.
" Ballast.....	16 6	"
Pit Sand.....	16 6	"
Best Washed Sand.....	16 0	"

CEMENT AND LIME.

Best Portland Cement.....	68 0 to 71 0	s. d. Per ton delivered.
Ground Blue Lias Lime.....	43 6	at depot.
Exclusive of charge for sacks		
Grey Stone Lime.....	47 0	per ton at depot.
Stourbridge Fireclay in sacks 37s. 6d.		per ton at depot.
STONE.		
Yellow Magnesian, in block.....	per foot cube	£ 0 3 9
Red Mansfield, ditto.....	"	0 4 9
White Mansfield, ditto.....	"	0 4 9
Red Corsehill, ditto.....	"	0 2 6
Darley Dale, ditto.....	"	0 2 9
Grienshill ditto.....	"	0 2 4
Closeburn Red Freestone, ditto	per foot cube	0 2 2
Acaster, ditto.....	"	0 2 10
Chilmark (in truck at Nine Elms).....	"	0 1 10 1/2
Hard York, ditto.....	"	0 3 10
Do. do. 6 in. sawn both sides		
landings, random sizes.....	per foot cube	0 3 3
Hard York, 3 in. slab sawn two sides, random sizes.....	per foot cube	0 1 3

OILS.

Rapeseed, English pale, per tun	£28 15 0 to £29 5 0
Ditto, brown.....	26 15 0 " 27 5 0
Cottonseed, refined.....	29 0 0 " 30 0 0
Oliva, Spanish.....	39 10 0 " 40 0 0
Seal, pale.....	21 0 0 " 21 10 0
Coconut, Cochbin.....	46 0 0 " 46 10 0
Ditto, Ceylon.....	42 10 0 " 43 0 0
Ditto, Mauritius.....	42 10 0 " 43 0 0
Palm, Lagos.....	32 5 0 " 33 5 0
Ditto, Nut Kernel.....	35 0 0 " 35 10 0
Oleine.....	17 5 0 " 19 5 0
Sperm.....	30 0 0 " 31 0 0
Linaeed Oil.....	per gal. 0 10 5 1/2
Baltic Oil.....	0 10 4 " —
Turpentines.....	0 10 4 " —
Putty (Genuine Linaeed Oil).....	per cwt. 1 1 0 " —

TILES.

Plain red roofing tiles.....	62 6	per 1,000 ry. sq.
Hip and Valley tiles.....	5s. to 9 0	per doz.
Broseley tiles.....	75 0	per 1,000
Ruabon red, brown, or brindled ditto (Edwards).....	77 6	"
Ornamental ditto.....	8 0	"
Staffordshire (Hauley) Reds or brindled tiles.....	75 6	"
Head-made sand-faced.....	80 0	"
Hip tiles.....	5s. to 9 0	per doz.
Valley tiles.....	5s. to 9 0	"

SLATES.

Best Welsh Blue (Portmadoc) Slates 24 by 12	£32 2 6	Per Million of 1,200.
" " " 20 " 10	£20 10 0	"
" " " 18 " 10	£15 17 6	"
" " " 16 " 10	£16 8 10 0	"

Minimum prices for Portmadoc Slates delivered within cartage limits.

Size	In 1/2m. Lots.	In 1m. Lots.	In 1/2m. Lots.		In 1m. Lots.	
			Over 1/2 and not exceeding 1/2m.	Over 1/2 and not exceeding 1m.	Over 1/2 and not exceeding 1m.	Over 1/2 and not exceeding 1m.
Inches.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
24 by 12	36 0 0	34 0 0	32 2 6	32 2 6	32 2 6	32 2 6
22 by 12	28 10 0	26 12 6	25 5 0	25 5 0	25 5 0	25 5 0
22 by 11	26 10 0	24 7 6	23 0 0	23 0 0	23 0 0	23 0 0
20 by 12	26 10 0	24 2 6	22 12 6	22 12 6	22 12 6	22 12 6
20 by 10	23 12 6	22 5 0	20 10 0	20 10 0	20 10 0	20 10 0
18 by 12	20 10 0	19 15 0	18 5 0	18 5 0	18 5 0	18 5 0
18 by 10	18 2 6	16 12 6	15 17 6	15 17 6	15 17 6	15 17 6
18 by 9	16 10 0	14 17 6	14 0 0	14 0 0	14 0 0	14 0 0
16 by 12	17 7 6	16 0 0	15 2 6	15 2 6	15 2 6	15 2 6
16 by 10	15 15 0	14 0 0	13 2 6	13 2 6	13 2 6	13 2 6
16 by 9	13 10 0	12 6 0	11 10 0	11 10 0	11 10 0	11 10 0
16 by 8	12 2 6	11 0 0	10 7 6	10 7 6	10 7 6	10 7 6
14 by 10	12 10 0	11 1 0	10 15 0	10 15 0	10 15 0	10 15 0

Damp Course.

24 by 12 to 20 by 10 .. 16s. per m. extra.

20 by 10 to 14 by 10 .. 10s. "

Note. Bangor Slates:—

Where quotations for slates are not obtainable at present architects and builders will do well to specify and use some of the excellent substitutes which have found favour of late. Prices of some of the best of these are as follows:—

ASBESTOS ROOFING TILES. supplied by the British Uralite Co., Ltd., 8, Old Jewry, London, E.C. From £4 14s. per 1,000, 9 in. by 9 in., 400 tiles per square of roof covered, price per square. 3s. 6d. to £33 8s. per 1,000, 24 in. by 24 in., 34 tiles per square of roof covered, price per square. 22s. 3d.

ALLIGATOR ROOFING. supplied by the British Roofing Co., Ltd., 40, Trinity Square, E.C.3, in rolls of 216 feet super, with the necessary mastic and nails for fixing: 1 ply, 20s. 6d. per roll; 2 ply, 26s. 6d. per roll; 3 ply, 34s. 6d. per roll.

"**POLLITE.**" Made by Bell's Asbestos Co., Ltd., Southwark Street, S.E. Standard tiles in red, blue, and grey colours, carriage paid to nearest railway station. 15 1/2 by 15 1/2 " Pollite " lining sheets are now available unrestricted by Government control. Corrugated roofing sheets (grey), in 3 ft. 7 1/2 in. widths, 1/2 in. thick in 4 ft., 6 ft., 7 ft., and 8 ft. lengths, sq. yard, 5s. 6d. Diagonal roofing tiles (grey), 15 1/2 in. by 15 1/2 in., C 4 or F 5 pattern, 1,000, £29 3s. Flax building sheets (grey), 2s. 3d. to 6s. 2d. Coverstrip for joints, 2 1/2 in. by 3 1/2 in., per lin. yard; 40s. 6d., 2 1/2 in. by 1 1/2 in. Roman-type tiles (grey), 4 1/2 in. by 2 1/2 in. by 1 1/2 in. laid "straight cover" 3s. Ridge tiles, Roman-type (grey), 3 1/2 in. 7 1/2 in. long, half-round, slotted for rolls of tiles, 1s. 3d. "Pollite" sarking felt, in rolls of 24 yards by 1 yard wide, per roll, 1s. Crates for tiles and sheets, extra on above prices.

ROK ROOFING. Made by D. Anderson and Son, Ltd., Lagan Felt Works, Belfast, and Roach Road Works, Old Ford, London, E. Prices and particulars in new booklet "V," to be had on application.

LION ROOFING, in rolls, 24 yds. by 1 yd. Manufactured solely by F. McNeill and Co., Ltd., Roofing Felt Works, Bunhill Row, E.C. and Kirkintilloch, N.B., etc. Lowest current prices and Lion Roofing pamphlet free on application to F. McNeill and Co., Ltd., 4, South Place, London, E.C.2.

GLASS (IN CRATES).

English Sheet Glass	15 oz.	21 oz.	26 oz.	32 oz.
Fourths	7d.	8d.	9d.	10d.
Thirds	8d.	9d.	10d.	11d.
Hartley's English Rolled	4 in.	5 in.	6 in.	
Plate	6d.		6d.	

	White.	Tinted
Figured Rolled	6d.	7d.
Repossime	6d.	7d.
Roll Sheet	6d.	
Stippolyte	6d.	7d.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—A visit of the members of this association to Conistorphine Church took place on Saturday week. Dr. Thomas Ross conducted the party, and read a paper on the architectural history of this quaint and picturesque ecclesiastical structure. Thereafter a visit was paid to a series of cottage homes at Murray Green under the leadership of Mr. Henry F. Kerr, A.R.I.B.A. The houses were erected from designs by Mr. Kerr in 1910. There are ten double cottages, all differing in design grouped round a central green. The whole area utilised is about three and a half acres, and the land has a gentle slope towards the south, with a fine prospect towards the Pentland Hills. The cottages, embowered in greenery and surrounded by the old trees, which have all been retained, looked their best.

The Colchester Town Council is considering the appointment of a panel of architects to advise upon designs for its housing scheme.

It is stated that the Sevenoaks U.D.C. has accepted a tender of £3,300 for 20 cottages, and that the cost of 16 similar cottages built in 1914 was £3,080.

The surveyor to the Hendon R.D.C. has submitted a scheme for building 518 cottages in Stanmore, Pinner, Edgware, and Harrow, at a cost of £355,275, embracing four types of dwellings.

At the last meeting of the Eastern District Committee of the Stirling C.C., at Falkirk, it was decided to appoint Mr. A. M. Lupton, of Stirling, as architect for the housing scheme, to build 600 houses in the district.

Spring Garden Lane Church, Sunderland, erected in 1765 by the Presbyterian congregation, which adhered to the Secessionist Church of Scotland, collapsed on June 17 in a heap of ruins. Its last occupant was the Salvation Army.

Reporting to the Winslow (Bucks) Rural District Council that an inspection committee found the houses in a much worse condition than they expected, the chairman of the council, Mr. J. M. Missenden, said the sanitation of one village was awful, the people disposing of their slops by throwing them into the pond where the cows drank.

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TENDERS.
*Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender: it adds to the value of the information.

BETHNAL GREEN.—For supply of 160,000 creosoted deal blocks for the Bethnal Green Borough Council—
Sir W. Barnett and Co., Ltd., 9 in. by 3 in. by 5 in., £27 10s. per 1,000, 8 in. by 3 in. by 5 in., £22 10s. (accepted); Howard Bros., £27 10s. and £21; Acme Flooring and Paving Co. (1904), Ltd., £27 15s.; Improved Wood Pavement Co., Ltd., £27 17s. and £24 1s. 6d.; Burt, Boulton and Haywood, Ltd., £27 17s. 6d. and £24 5s.; W. Griffiths and Co., Ltd., £28 and £24 5s.; Gabriel, Wade and English, Ltd., £28 2s. 6d. and £24 8s. 9d.

BOSTON. For restoration of St. James's Buildings—
Sherwin and Son, large hall and kitchen, £1,652 10s.; girls' school, £223 10s.; infants' school, £213 (accepted).

GREAT BROMLEY.—For the erection of a pair of cottages (including water supply), for Mr. Percy Crossman, F. W. Skipper, architect, 55, London Street, Norwich—
Messrs. Parsons and Son, Manningtree £895 0 0
.. .. . Accepted.

HOLMFIRTH.—For 12 workmen's dwellings in Newmill Road, Holmfirth, for the Holmfirth Urban District Council, P. N. Brown, Hollowgate, Holmfirth, architect. Contract No. 1. Accepted tenders:—
Mason, bricklayer and concrete, Turner, R., and Co.; carpenter and joiner, Hollingworth, H., and Sons, Hinchcliffe Mill; plumber and glazier, Kenyon, J.; roof tiler, Walton, W. H., and E., 31, Lawksholme Lane, Keighley; plasterer, Haigh, J.; painter and decorator, Lawton and Hozley; electrical engineer, Tolson, C. R. Rest of Holmfirth.

IPSWICH.—The Ipswich Malting Co., Ltd., are now re-stating (after fire) their No. 3 malting at Ipswich, under the directions of F. W. Skipper, architect, Norwich.

KIRKCALDY.—For work required in erection of a new billiard room at 150, High Street, Kirkcaldy, for the New Club, W. B. Wylie, A.R.I.B.A., 196, High Street, Kirkcaldy, architect. Accepted tenders:—
Wilkie, D., 2, Anderson Street, mason and brickwork, £390 12s.; Muir, G., 255, Links Street, carpenter and joiner work, £248 9s. 10d.; Page, R. F., 8, Nicol Street, plaster work, £27 1s.; Michie, A., 173, High Street, plumber work, £42 13s. 6d.; Lawson, J., and Son, 44, Alexandra Street, slater work, £45 5s. All of Kirkcaldy.

LEICESTER.—For house, Meadway, Western Park, Leicester.—For Mr. J. W. Faulks, H. Bland, surveyor, 221, Fosse Road North, Leicester—
Bentley, J., and Co. £1,675 0 0
Johnson, J. E., and Son 1,662 0 0
Elliott, F. 1,620 0 0

LEYTON.—For construction of an underground convenience at the junction of Church and Lea Bridge Roads, for the Leyton Urban District Council:—
Marrable £5,938 0 0
Russell, A. E. 5,123 0 0
Shrimour and Sons 5,112 0 0
Coxhead, F. J. 4,364 0 0
Hodge* 3,928 6 11
*Accepted.

LITTLETON.—For the completion of the Littleton reservoir, for the Metropolitan Water Board:—
Pearson, S., and Son £191,950 0 0
Sixteen firms tendered.

MIDDLESBROUGH.—For erection of 106 houses, for the Middlesbrough Corporation:—
Parkinson, J., and Sons (Blackpool), Ltd. £85,260 16 0
Accepted.

NEWMARKET, IRELAND.—For work required in the provision of a water supply to the town of Newmarket, for the Kanturk Rural District Council, P. H. McCarthy, M.A., B.E., 39, Westmoreland Street, Dublin, engineer:—
Fitzpatrick, J., Kanturk £5,780 5 0
Leahy and Ryan, Cullinagh, New-castle West, Co. Limerick 5,076 18 0
Moran, T. J., and Co., Hibernian Chamber,* 5,950 0 0
*Accepted.

SEVENOAKS.—For 10 pairs of cottages at Greatness, for the urban district council:—
Ellingham and Son, Dartford £13,500 0 0
Garden City Housing Co., Victoria Street, London 9,452 5 0
Bentley, C., and Son, Sevenoaks* 8,300 0 0
*Accepted.

WATERFORD.—For 23 four-roomed cottages, for the corporation:—
Costin, P. £14,172 0 0
Hearne, J., and Son 13,892 19 8
Nolan, G. 13,604 15 6

WESTMINSTER.—For foundations for the Nurse Cavell Memorial, St. Martin's Place, for the Westminster City Council:—

Adams, T., Wood Green, N.	£655 0 0
Paterson, Ltd., 3, Hamilton Street Camden Town	584 0 0
Boxis, Ltd., Upper Berkeley Street, W.I.	497 0 0
Sims, J. R., Horseferry Road, Westminster	488 0 0
Franks and Simons, 354, Mile End Road, E.	445 0 0
Townsend and Pearson, Ltd., Dean Street, Oxford Street	390 0 0
Mowlen and Co., Ltd., Grosvenor Wharf, Westminster	374 0 0
Lavington (1910), Ltd., Clapham Road, S.W.*	372 0 0

*Recommended for acceptance.
YEovil.—For houses, street and sewer work on the Eastland Estate, for the town council:—
Tarrant and Sons, London, for erection of 44 houses, £32,260. Recommended for acceptance.

LIST OF TENDERS OPEN.

BUILDINGS.

June 28.—Rebuilding part of Tydvil House, Llewellyn Street, Pentre, after fire.—For the Rhondda Urban District Council.—E. H. Barber, A.M.I.C.E., engineer and surveyor, Council Offices, Pentre, Rhondda.

July 5.—Erection of sixteen houses in connection with the Brixham Council's housing scheme at Garlic Rea.—For the Brixham (Devon) Urban District Council.—Tenders to H. G. Smith, clerk, Town Hall, Brixham.

July 14.—Erection of 44 houses at Capel, Llanelly.—For the corporation.—Tenders to H. W. Spawart, town clerk, Town Hall, Llanelly.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

RECEIVED.—L. P., Ltd.—C. V., Ltd.—W. H. S. and Son—A. U. D. C.—J. G. K. and Son.

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F. H. W.—Please send.
DERELICT.—Sorry, too long.

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