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for
home builders

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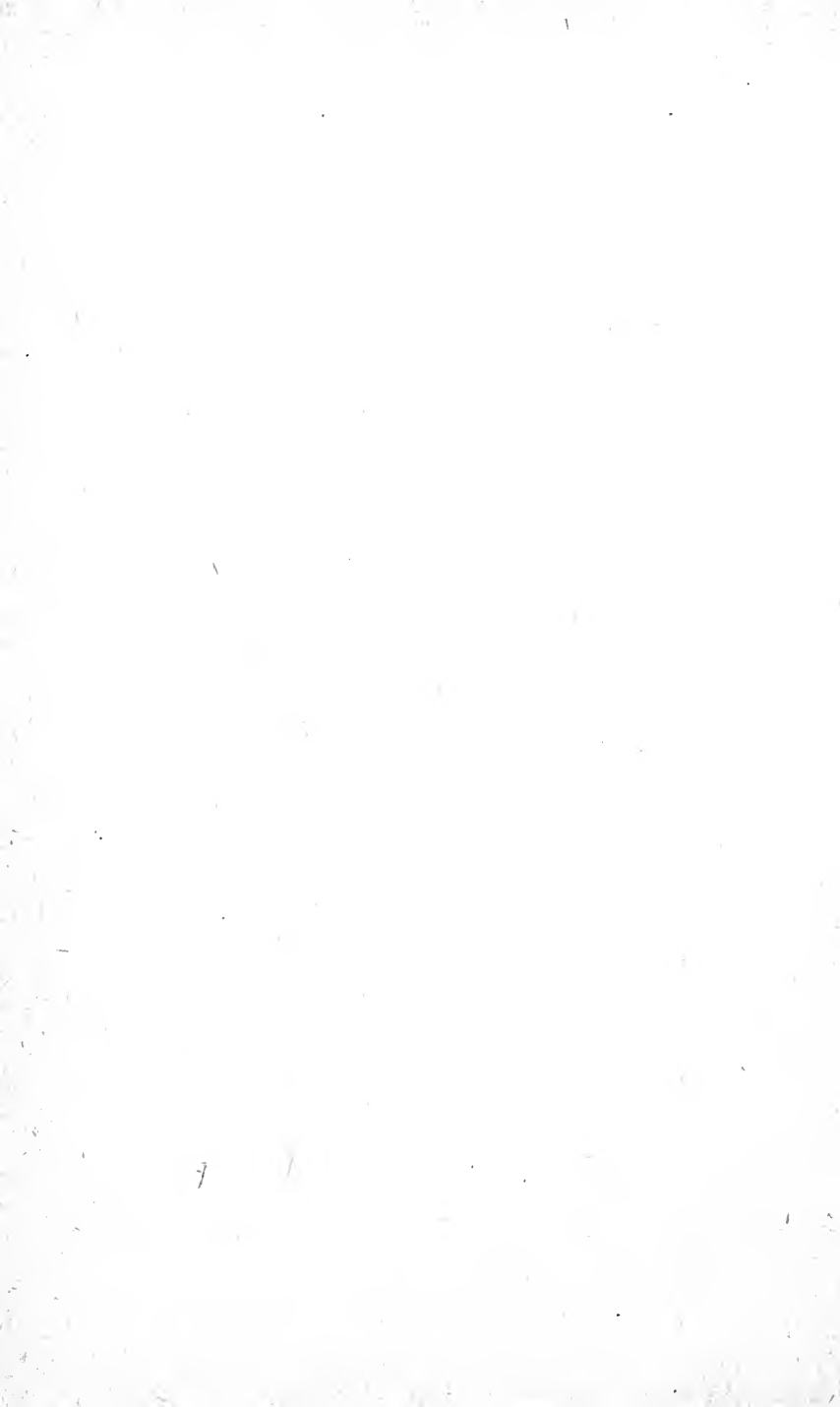
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**PRIMER
FOR
HOME BUILDERS**



P rimer

for home builders

Edited by

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and the

Editors of Popular Mechanics

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FOREWORD:

By its very nature, home building is a field in which most of us have had no previous experience, and yet it is one of life's most important ventures. None of us wants to go blindly into this task, yet heretofore it has been necessary to struggle through thick and involved volumes to get the home-building background needed.

Primer for Home Builders has been developed to fill this need; it is a simple, straightforward book explaining the important points you must consider in building a home. It is written by twelve of the nation's top home-building authorities, each an expert in his field.

We told our authors to presume that their readers knew absolutely nothing about home building. Each author was to start from scratch, begin at the beginning and tell in the easiest possible way the fundamentals of his subject.

For example, we asked Morgan Yost, who writes the chapter on architects, to tell exactly what an architect is, how an architect is paid, and what he does for his pay. We asked Charles Wright, who contributes the chapter on the financing of a home, to state the fundamentals of home financing in such a way that someone who had never had any interest in the subject before could read it and have a pretty good idea on how he could pay for the home he wanted to build.

Primer for Home Builders is not an encyclopedia on home building. It does not solve every problem you may encounter when you build. But it should serve to indoctrinate you in the fundamentals of home building so that you will feel perfectly at ease in dealing with realtors, finance companies, architects, contractors and the host of others you must work with in constructing your home.

Good luck to you on the adventure ahead!

THE EDITORS

ABOUT OUR AUTHORS:

• *Carl Zeigler*

graduated from Northwestern University in 1929. After two years on the cable desk of the *Chicago Tribune* and two more years doing highway traffic research for the city of Chicago, he became associated with the Portland Cement Association in 1934. For ten years he served with the association as field editor for housing and architectural publications, visiting construction projects in all parts of the United States. After fourteen months overseas as an American volunteer ambulance driver with the British Army in Italy and Northern Europe, he returned to Chicago late in 1945 and assumed the associate editorship of *Small Homes Guide*, the national consumer magazine for home builders.

• *Benjamin F. Bills*

is chairman of Bills Realty, Inc., and Bills Mortgage Company, Chicago, president of Land Developers Association, Inc., and Grand Ridge Building Corporation. He was an instructor in oral English at Williams College, a member of the law, political science and public speaking faculties of the University of Chicago, and trust officer and manager of the new business division of Continental and Commercial Trust Company of Chicago. He is a member of the Chicago bar. Constant association with every phase of land development through the concerns he heads has given Mr. Bills a rich background of experience in the building field.

• *E. G. Gavin*

is editor of the magazine *American Builder*. As an advocate of public housing he has lectured frequently with Chester Bowles, Wilson Wyatt and other leaders in the field. He obtained his degree in engineering and construction from Purdue University, and soon became prominently identified with the construction industry. Before going to *American Builder*, he served on the editorial staff of *General Building Contractor* and later as editor of *American Contractor* and *American Lumberman*.

• *Lawrence B. Perkins*

practices architecture with his own firm, Perkins and Will of Chicago. This organization specializes in the planning of the individual home. He has contributed articles on all phases of home construction to many publications, including *Architectural Forum*, *Architectural Record*, *Progressive Architect* and others.

• *Mrs. Christine F. Salmon*

graduated with a master's degree in architecture from the University of Pennsylvania and is a member of the American Institute of Architects. She is active professionally at present with the Chicago firm of Perkins and Will.

• *Charles Wright*

is an authority on proper economic practice and has taught on the staffs of Flint Junior College and the General Motors Institute. At present he is an employment analyst for the Bureau of Labor Statistics, a lecturer on economics at De Paul University, and technical consultant for the Union of Chicago Industrial Relations Center.

• *L. Morgan Yost*

is a practicing architect, a member and vice-president of the Chicago chapter of the American Institute of Architects. He is a frequent contributor to national magazines, including *American Home*, *Better Homes and Gardens* and *Parents' Magazine*. Homes of his design have appeared in many periodicals and exhibits and have won a number of prizes, among them the 1945 award of *Household Magazine* for a six-room house. He is consulting architect to *Household Magazine*, and consultant to several manufacturers of household appliances and building materials. He is a leading advocate of the architectural school which contends that if a house "solves the problems of those who live in it and work in it, it follows that the look of it will be right."

• *Laurance H. Mills*

is president of Mills and Sons, specialists in the construction of home units, among which are Westwood, a community of 1,500 homes in Elmwood Park, Illinois, and an apartment settlement of 2,000 two-apartment family units in the Austin area of Chicago, as well as many other subdivisions and developments.

• *Alphonse Cerza*

has practiced law in Illinois since 1932, specializing in matters pertaining to real estate law, the relationship of landlord and tenant, and municipal corporations. From 1942 to 1944 he was chief enforcement attorney of the OPA rent office in Chicago and assistant corporation counsel of the city of Chicago. As one of his many activities in the home field he served as special lecturer on housing at the University of Chicago. He is a member of the Chicago and American Bar Associations and of the Law Institute.

• *Harry J. Harman*

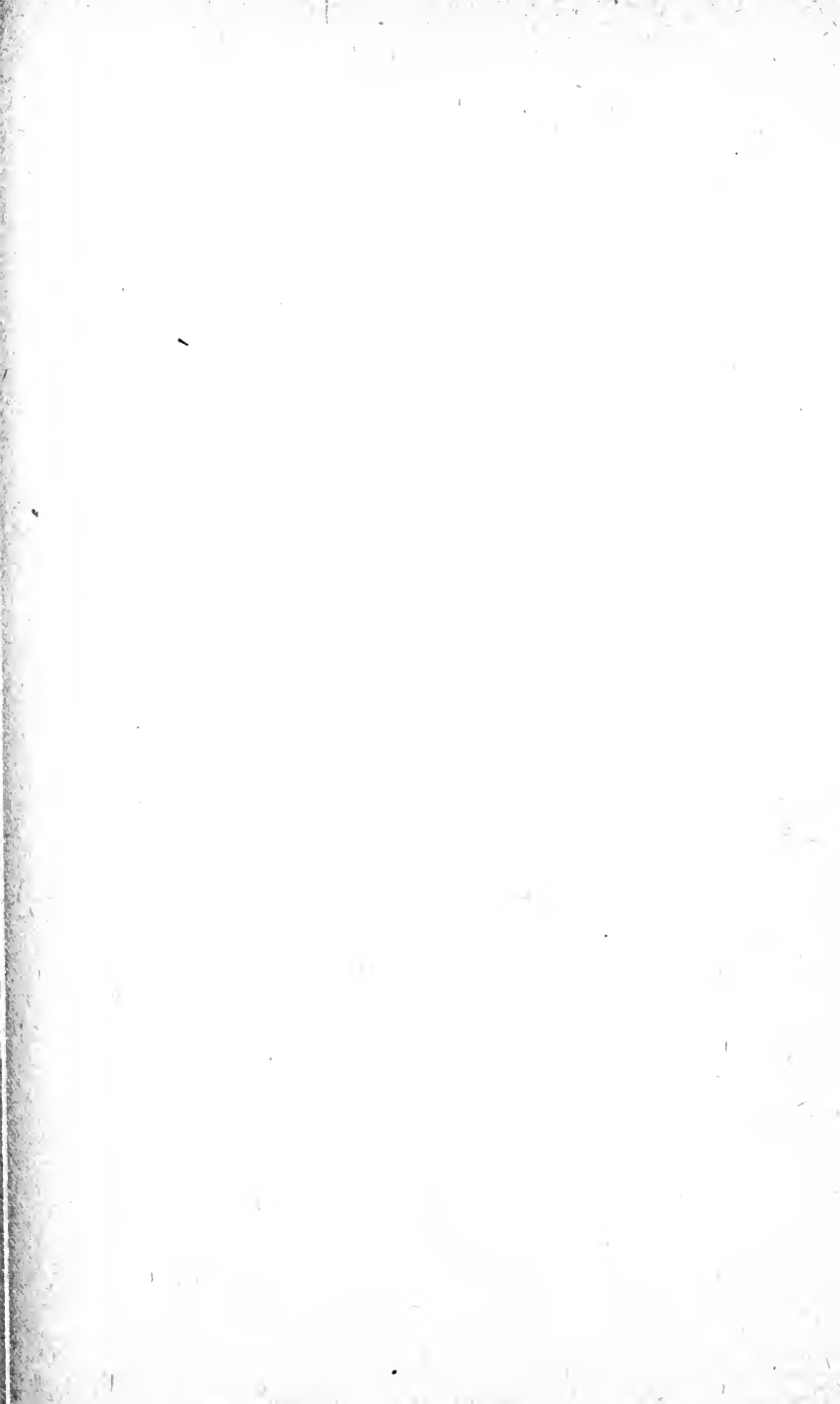
is a practicing architect. He has been an instructor in architecture at both the University of Illinois and Oklahoma A. & M. He is a design consultant for *American Lumberman* and *American Restaurant*. He has a long succession of successful designs to his credit in almost every phase of building.

• *George Fred Keck*

has won world-wide prominence for his sponsorship of the Solar Home and has been instrumental in the modern effective development of this idea. He taught architectural design at the University of Illinois and has practiced architecture for more than 20 years. He is consulting architect for Ready-Built Homes and consulting architect and engineer for Clay Products Association.

• *W. Clyde Lammey*

has written authoritative articles on the home and on home problems for leading magazines over a period of many years. He is a nationally recognized authority on what the average man should know about his home and garden and their care and maintenance. He is the home and garden editor for *Popular Mechanics*.



PART **1**

PLANNING

Get twenty-five building experts together and ask them, "What's the first step in building a house?"—and you're likely to get twenty-five different answers. Probably no two houses were ever begun in precisely the same way. So we are brave indeed when we step right up and tell you that—after you've taken the advice of Carl Zeigler, author of "Don't Be Afraid to Build!"—Step Number One in building your house is . . .

PLANNING!

What is planning? Well, you'll learn a lot more about it in Chapters Two and Three, but here's a hint: Planning is merely considering everything you want in and from the house you are going to build and seeing that you get them.

The authors of Chapters One, Two and Three say many things that will sound familiar to almost every reader. They're the things that should be "as plain as the nose on your face"—yet are frequently overlooked or forgotten and accordingly become the cause of expense, despair and unhappiness.

So . . . read carefully! Hidden in a sentence or a paragraph may be the suggestion that will save you hundreds of dollars or insure your family's happiness in your new home.

Then with Chapter Four you get into facts and figures you can sink your teeth in. It tells you how to pay for the home you are planning to build!

THE EDITORS



CHAPTER ONE

Don't Be Afraid to Build!

by CARL ZEIGLER

BUILDING a home is great fun! It's one of the most exciting and thrilling events in living. Ask anyone who has watched his own earth, turned on an empty lot, grow into walls, roofs, large picture windows and friendly rooms with great fireplaces. Ask him how it felt to move into his house and look around to see his own ideas and

fancies of last year now molded solidly in wood, brick, stone, plaster and woodwork.

If you've caught the house-building bug, you already know a bit of what it's like. You've cut out a hundred different house pictures, sketches and interior views—none of them just right, of course—but each having something you want in this house you're dreaming up. You've probably sweated over a floor plan, and then found that everybody else in the family has drawn one, too, each appropriating so much personal floor space that all of their ideas, put together, would cover a whole block. You've caught yourself sneaking off to that empty lot of yours on 26th Place or Sunset Road or Hillside Terrace and trying to see your house sitting there among trees, well-cut grass, shrubs and walks, with all the lights on and people walking by saying: "Now, *there's* a house!" You've stopped to watch other new houses being built, shaken your head and thought, "I wouldn't make that mistake on *my* house," and then hurried home to see whether you have planned something equally as dumb and awkward. Well, if you feel and act like this without even signing a contract or buying a load of lumber or brick, you've just started, because the fever pitch increases from foundation to chimney cap, and doesn't abate until long after you've moved in and settled down.

It's really true that building a home is the greatest adventure many of us will ever have, and the biggest business deal most of us will ever put over. Acquiring a debt-free home may also be the greatest mass of permanent wealth the majority of us will ever accumulate; and building that home is one of the very few important things we will do only *once* in a lifetime.

But despite the thrill, importance and necessity of home building, people have always built too few homes. Of the three essentials of life—food, clothing and shelter—we

probably give the least amount of consistent thought to shelter. Daily, here in America at least, we buy food in more than adequate quantities, and we seasonally buy clothing to suit the weather and to match the elegance of neighbors, friends and business associates. But too many of us leave the provision of shelter to somebody else—until there is a great national emergency. Then we frantically buy and build a lot of homes we don't really want, just to get a roof overhead.

More of Us Should Build

In the United States since 1925 we have each year failed to build hundreds of thousands of new homes that were needed to keep up with our zooming population. The result is that now, in these postwar years when we have money and want to spread out and live, there is no home for us, or not the kind of home we think we should have.

Now, the amazing thing is this: Had only a few of the millions of families which consistently paid rent since 1925 bought new homes instead, and paid for them with the same money they paid out as rent, there would be no home shortage today. And in addition to 20 years of gracious living, free of landlord troubles, practically every one of these families would now own clear title to a piece of property whose current cash value is conservatively half again as great as it has been any time since 1925.

It must be admitted that not all people who pay rent are emotionally, financially or geographically stable enough to become responsible householders. But it is evident that there always has been and always will be enough renters, as individuals, capable of building all the new homes needed to keep each generation comfortably and healthfully sheltered. An indication of this are the results of two recent nation-wide surveys which came independently to the same

conclusion: that 34 percent of our families want to build new homes and feel they can afford them. That's slightly more than half of the families now paying rent.

What is this timidity or uncertainty or lack of initiative that keeps so many of us solid, responsible and fairly well-heeled citizens from taking the big but pleasant and economical step into home ownership? Whatever it is, it has robbed us of many splendid opportunities to buy fine homes at their most reasonable prices. Here's a good example:

As late as 1935 to 1940, in one of the five largest cities of the United States, adequate five room houses were built and offered for sale for as little as \$2300, including the lot. With a 25 year four percent mortgage, the principal and interest on these homes could have been repaid at the rate of \$12 per month. Five dollars more a month would have covered insurance and taxes. Think of it: all the major home-owning costs for \$17 a month. During that same period the average industrial pay envelope in the city contained \$133 per month, or eight times the cost of owning a five room home. Yet there were comparatively few takers for these homes and few bargains were snapped up in homes of any price range.

Today it's quite different. In that same city people are falling all over themselves to pay thrice \$2300 for five room homes, and they are willing to commit up to 25 percent of their take-home pay to finance the deals. This seems rather silly—but it only proves that it takes an emergency to make us buy or build homes.

Where were you when these home bargains were going around begging for takers? And, incidentally, where was I?

Be Ready for Your Opportunity

But don't worry too much about lost opportunities in home building. There have been plenty of them before in

the history of this country, and it is inevitable there will be more again. The big questions are really these: Will you be ready to take advantage of the opportunity? Will you be ripe to assume the responsibility and high adventure of home ownership? Will you have sufficient background and understanding of the problem to know when that time arrives? Will you know the difference between turning your monthly shelter check into a growing equity in your own personal hunk of the world or using it to buy more flats, duplexes and cottages for the landlord?

If you are warmed up to house building now, don't cool off because you can't see the way clear to get started building for a year or even two or three. The wisest heads in house building say you can't plan too far ahead, or plan too thoroughly, for the best homes always have the most thought and the greatest wishing and hoping behind them.

Home Building Is Pleasant

This book, prepared by outstanding authorities in the planning, financing and construction of homes, is designed to grease your way over the short but gritty path of doubt and apprehension that makes many people think home building is a fearsome headache instead of the pleasurable experience it can and should be. It also aims to show you, step by step, how to go about getting a house planned and built, for it assumes you already *know you can build*—now, next year or the year after—whenever you decide you can afford it. That decision is up to you, when you huddle with yourself, your pocketbook and your future prospects. But would it help to know that if you can afford to pay rent now for decent, comfortable living quarters, you can afford an even better home of your own for the same money?

Much of the book deals with problems facing the novice in home building—the person who has nibbled around the

edge of the building idea but has never got his teeth into it. During the first postwar year of hectic, unnatural and often ill-considered building, hundreds of people who have built or firmly committed themselves to a project have said: "I probably wouldn't have decided to build if I hadn't been shoved into it." By being "shoved" they mean they were evicted, read rent-scare stories in the papers, got an overnight inspiration after seeing a dream house in a magazine, or caught the bug from a friend who was building.

It may be a good thing for the national shelter pool that some people have been shoved into home building; but no project of such important, personal and long-lasting consequences as a home should ever be undertaken abruptly. For these frantic builders now say: "I often wish I had learned more about what I was getting into before I started building. It would have been so much easier, so much more fun, and my home would be more like I really wanted it to be."

No one could honestly say that home building is really simple. It's just the opposite. There is probably no useful, everyday item conceived and built by man that requires so many minds and hands to bring it to completion. Thousands of people, employed by the various professional, trade, political, commercial and agricultural interests that make up the house building industry, will touch your home somewhere between the time you buy a lot and the moment the electric company turns on the juice that starts your automatic gadgets working. And since houses are the only mass commodity that has never been successfully mass produced—and won't be as long as you want individuality and the soundness and permanence of on-site fabrication—it probably always will be a complex operation.

Fortunately, you, yourself, don't have to contact all these people to get your home; and it will save you trouble and blood pressure if you don't try personally to direct all the

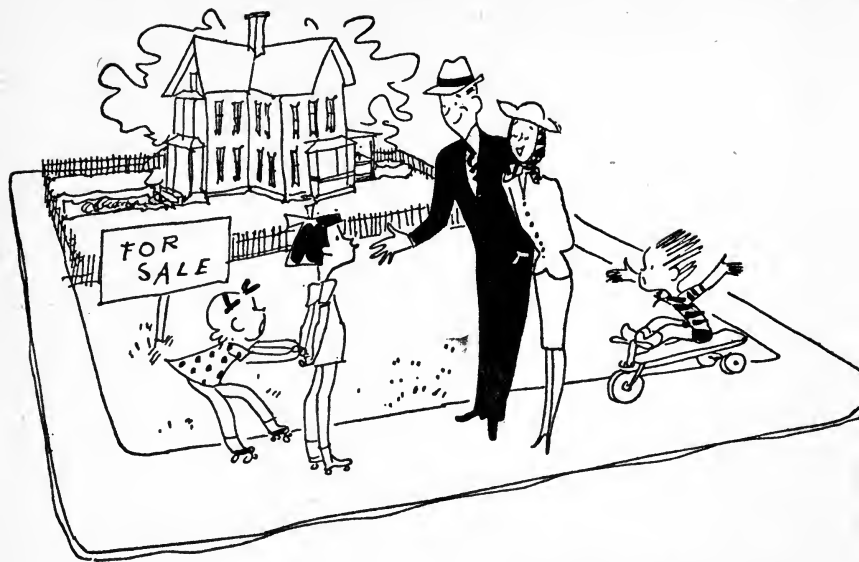
hands that build it. Your main contacts will be with your architect or designer and your builder or contractor. But you will help these worthy artisans immeasurably and save yourself time and money in completing your home if you tell them what kind of house you want, and then stay reasonably within your decision.

Prepare Yourself to Build

To do this, you should be able to talk intelligently about the style of design you admire, the arrangement of the floor plan that will best keep the various members of the family out of each other's hair, what kinds of materials you prefer for exterior and interior finish, and the type of home equipment you demand for your degree of modern living. You should also know the source of your financing and your rights and privileges during the time you contract to repay your loan. You had better learn about property values and how to judge the advantages and disadvantages of neighborhoods where you propose to build.

These fundamental problems of home planning are covered very thoroughly in the following pages. If you read and understand them, you should be able to embark on a home-building program with confidence in your ability to get what you want.

But this book won't get your house built—not until you get that little lord-of-the-manor feeling that will lift you out of the lazy, contented class of tenantry which has grown so big we are no longer the nation of landholders we like to think we are. What you decide about that will be the last and best chapter of this book—and you will write it yourself. If it's a good one it will be full of plans, ideas, changes, impossible ambitions, little family squabbles, happy love feasts and all the other things that make home-building a unique and unforgettable experience.



CHAPTER TWO

Meet Your Neighborhood

by BENJAMIN F. BILLS *and* E. G. GAVIN

DO YOU “want to be alone”? Or do you like to feel free to borrow a cup of sugar from your neighbor and swap ideas on gardening and politics with him over the back fence?

Do you want to live in an old, established community or in a new subdivision? Do you prefer the city, the suburbs or the country?

Or do you know?

Almost equal in importance to the design of your house will be its location, for the neighborhood you settle in—its people, churches, schools, shopping center and recreational facilities—may make a great deal of difference in the full enjoyment of your new home.

Choose Your Kind of Community

In an older neighborhood you can easily remain aloof; indeed, you may have to. People there have made their friendships and may not be anxious to seek you out. A good site may cost you two or three times as much as in a newer area, and the houses surrounding it may have been built at a price level considerably above or below what you are planning to spend. Not only will you feel uncomfortable if your house is substantially larger or smaller than the others in your block, but its resale value will be less because of its unconformity. This applies with almost equal force to your income bracket. You'll be more apt to be satisfied in your new surroundings if there isn't too great a discrepancy between your neighbors' incomes and your own.

Such important elements of modern living as schools, churches, playgrounds, shopping centers and transportation generally are well established in settled areas. Utilities and sidewalk and street improvements will be installed and paid.

In the new community, friendships are in the making, and you will be able to trade garden seed, ideas and chicken-pox as freely as you wish; in fact, you probably will be expected to. The lower cost of a site may permit you to build a larger house or build your house on a larger lot, but again you must consider the houses already built or planned in your block from the standpoint of size and price as compared with your own. All street improvements may not be installed or, if they are, considerable assessments may still be due of which you will have to pay your share. Community facilities and transportation will not be as complete as in the established neighborhood, but you will have the advantage, as a local homeowner, of having a voice in their development as the community grows.

These community facilities—religious, educational, rec-

reational, social, medical, shopping, fire and police protection, transportation—are all-important to you and your family.

If you attend church regularly, you will want to be able to reach one of your own denomination easily, and your children should be able to get to Sunday school without having to travel too far. It is advisable to attend such a church a few times before settling in a community in order to meet the people and the pastor and see how you like them and they like you.

All parents want the best possible schools for their children. The community may have but one school, or it may offer a choice. It may have elementary schools only, so that children may be compelled to go several miles to high school. If you want your children to attend a parochial school you will want to look for the nearest one. In some communities there are well planned kindergarten and nursery schools for the little tots; in others, none at all. A visit to the local school board or principal will give you complete information on this important subject.

Your children will be interested in the recreational facilities, no matter what their age—and so will you. Playgrounds, swimming pools, community halls, theaters, Boy and Girl Scout troops, athletic teams, dramatic and hobby groups, church and school societies, fraternal organizations—whatever interests you and your family, or is likely to interest them, should be investigated for completeness, quality and availability.

Your children will be associating with other children who will influence them to a great degree. If you have definite ideas on the type of cultural and social background that you wish your children to acquire, then you must determine whether the community in which you are interested will provide the proper environment. The simplest way to find

out is to talk to some of the people whose neighbor you will become. Visit them in their homes, tell them frankly about your plans—they'll be interested because you're going to be *their* neighbor, too, and *their* kids are going to associate with *your* kids. Talk to the children in your prospective neighborhood; watch them play. If there are community enterprises such as town hall meetings, church socials or parent-teacher meetings, attend a couple and see what type of people you will have to deal with. If your lodge, union or similar organization has a branch in the community, go to one of its meetings. If you buy or build a home you're going to be there a long time—you may as well try to figure out whether or not you're going to like it.

The medical care available in the community should not be overlooked. Regular visits to dentist and doctor—or a hospital when necessary—can be troublesome if they require much traveling.

The distaff side of the family will want to know where the shopping center is and what it comprises. If your wife has to go to one center for groceries, another for the children's shoes, and another for the inevitable items from the five-and-ten, she will not be apt to commend your choice of a homesite. She may favor independent stores and find nothing but chains, or vice versa. Or she may be accustomed to shopping in large department stores and find nothing but small specialty shops. Of course, it is seldom that one finds a suburban or community shopping center that has all the things one can possibly want, but the staple items of everyday life should be readily available. If your home is not within walking distance of such a shopping center, by all means find out if there is good delivery service for such important daily needs as groceries, milk, newspapers and drugs. It will avoid much wear and tear on both the family car and the family nerves.

Fire and police protection are usually well provided for in the more settled communities, but in a new subdivision they may be rather sketchy. If your wife hears a prowler while you're working late or out with the boys it won't make her happy to know that the nearest police officer is a half hour away. Nor will you want to stand helplessly by and watch your house and all its contents go up in flames because a fire department is not available or is too far away to reach you in time. If you don't get the services of a fire department automatically as a taxpayer you may have to subscribe to a special fire protection fund or be routed out of bed on a wintry night as a member of a volunteer fire squad. If your children must cross a heavily traveled street, a street car or bus line or railroad to get to school, church or theater, be sure to find out whether—and when—the local police guard such crossings, whether there are watchmen at the railroad crossings, and whether volunteer schoolboy patrols are on hand during school hours.

One of the most important community facilities is transportation. A lovely home embodying all your dreams can soon become a nightmare if you have to spend several hours a day going to and from work. You may select your site on a beautiful spring day when the mile walk to transportation is a real joy. But think of that pleasant walk during a summer downpour or a winter blizzard—weigh carefully the disadvantages of bad weather in your locality against the advantages of the site. If your location necessitates the use of suburban transportation, check the timetables with your working hours to see whether you can get to and from work without wasting too much time or being stranded on the night you have to work late or want to go downtown to a show.

Usually suburban transportation is planned to take care of such contingencies, but it's not uncommon to find that the

place you want your house to be is two or three miles from the station. Only an athlete can walk such a distance twice a day, and then he would find that he had little time or energy left for the many small tasks that help to make home owning enjoyable—mowing the lawn, weeding the garden or fixing the screens. The answer usually is that the family car must be used, but the problem arises as to what happens to the rest of the family while the car is parked all day at the station. Your wife, if she drives, will want to shop or visit during the day. Can she take you to the station and meet you and still get the children off to school in the morning and prepare dinner at night? Probably not. If you can afford a second car, of course, the problem is solved; if not, perhaps a car-riding deal can be arranged with a neighbor. In any event, transportation in relation to your projected homesite is one of the most important factors to investigate.

Another item to check is disposal of waste and garbage. Are collections regular, and, if so, who pays for them? If you have to provide your own disposal, it probably means the purchase and installation of an incinerator and periodic trips to some spot where you can dump nonburnable rubbish.

Select Your Lot With Care

After considering all the elements already outlined you probably have your community fairly well in mind. The next step, logically, is the choice of the particular lot for your house. The chief factors to consider at this point are: the type of house you plan to build, its relation to the lot, the community and the houses near it, the utilities available, assessments, drainage, zoning and restrictions, topsoil and possibilities for landscaping, and proper conditions for excavation.

Undoubtedly, now that you are thinking seriously of em-

barking on the voyage of home ownership, you have a particular type of house in mind. Whether you will eventually end up with that particular type will depend upon your finances, your architect, your contractor and your changes of mind as you go along. However, the exterior of your house as it finally emerges will, in all likelihood, be somewhat near what you first planned.

Obviously, what that house looks like will have considerable bearing on the size and appearance of the lot you choose for it. You can't very well build a 60-foot rambling home on a 50-foot lot, nor would you want to erect a tall structure on top of a knoll in the middle of an acre of ground. Incidentally, while many folks talk hopefully of "an acre in the country," few of them realize that an acre is actually 43,560 square feet, or approximately 200 feet each way. That's a lot of lawn to mow or garden to tend for the average man who has to work eight or more hours a day to pay for it. However, if you do feel equal to taking care of an acre or more, be sure that sewer, water, electric and telephone services extend to wherever you want to place your house, and also that the roads to your ground and the driveway to your house are or can be cleared of snow in winter and maintained in summer. Shoveling the snow off a 150-foot driveway on a winter's morning may dim your joy of ownership appreciably.

Many of us have the feeling that a house on a hilltop is more to be desired than one on level ground. From a practical point of view, however, building a house on a level plot usually is less expensive and less trouble, and level land well landscaped can be as appealing from the esthetic point of view as many a hilltop. Furthermore, it is difficult to build on a hill unless you have a fairly good-sized lot, although it may be possible in the community you have in mind to find a rolling knoll on which you can set your house

to good advantage. In any event, be sure that your lot has good drainage. While this is generally true of high land, it will also be true of many level plots, depending on the structure of the earth underneath. Don't trust your eye to tell you whether land is high and well drained. There are topographic maps in the nearest county map department that will show you exactly your land's height compared with areas near-by. If you are at all in doubt about drainage, by all means get an engineer's opinion before building. A few dollars thus spent may save you years of wet basements and soggy lawns.

And just where are you going to place your house on the lot? Do you like a southern exposure with the full benefit of the winter sun in your dining room and living room? Would you like to have the house face west so you can sit on your back porch or outdoor patio and read the paper in the cool of a summer evening? Do you like your master bedroom on the east with the sun pouring in on those gorgeous May and June mornings? Or should the picture window in the dining room face north over a lovely vista of lawn and garden that always looks cool no matter how the sun bears down? Well, the plots of ground available, the tastes of your family—who are apt to be home much more than you are—and especially the design of the house itself all will influence the answer to this important question, which is one that will bear a great deal of sensible thinking.

As mentioned previously, your house should come somewhere near fitting the community in the matter of size and price. Likewise, the layout of streets in the community should be considered. A house that looks well on a straight, conventional street may look out of place in a community of winding roads related to the topography of the area.

You will, naturally, check on the utilities available for your lot. In older neighborhoods most utilities will be

already installed, but it pays to be sure. A trip to the local village hall not only will tell you this, but also will give you the assessed value of the land, whether any assessments are outstanding and, if so, how much. While there, it's a good idea to find out what the taxes are on houses near your site that are of approximately the same value as the one you intend to build. If sewer and water connections are installed but have never been used it will be wise to determine whether they are large enough for present-day use or are broken or choked with tree roots. Check on whether the electricity is alternating or direct current; most household appliances operate only on alternating current.

Returning to "an acre in the country," should you acquire such a plot you will have to double-check on the availability of all your utilities and what it will cost to have them run in to your house. Quite likely, sewer facilities will not be available at all and you will have to provide a septic tank for sewage disposal. In that event, you will have to make sure that soil conditions are suitable, and the only way to be absolutely certain is with an engineer's analysis. If water mains cannot be reached you will have to drive a well, which may prove expensive and, in some cases, impossible.

In the investigation of the advantages and disadvantages of the particular plot of ground you hope to make yours, probably nothing is more important than the matters of survey, zoning and restrictions. We've all heard of the man who built his garage a couple of feet over on his neighbor's lot; it sounds funny, but it's not if it happens to you. An accurate survey will be well worth what it costs, and concrete markers set up will let you, and everyone else, know just what belongs to you. Your trip to the city hall will show you how the local zoning applies to your lot. It is important to your neighbors and will be important to you. If you plan to use part of your dwelling as an office be sure to

find out whether it is permissible. If there is vacant ground near you, determine what the zoning for your block permits, or you may in later years find a fish market on your windward side or a ten-story apartment house blocking out the southern exposure of which you were so proud. Also, is there a possibility that these vacant areas may be improved with utilities, paving or street lighting for which you later may be charged as "indirect improvement"? If so, how much will the assessment be?

In most newer communities, and in many of the older ones, too, you will find "restrictions." These may apply to the size and cost of your house, its construction, its location on the lot, the type of occupancy, the use to which it will be put, and so on. Investigate these carefully, not only to avoid transgressing them but also to see what type of community will grow up around you. And make sure that they are recorded and "run with the land," otherwise they are not permanently protective.

Set-back regulations—how far back from the street line or lot limits you must build—are usually specified in the restrictions, and this, of course, will affect the size of house you can put on your lot. For example, a 10-foot side restriction on a 60-foot lot will leave you a maximum of 40 feet for your house. So for, say, a 50-foot ranch house you will need a larger lot or one on a corner where you can use the depth for frontage. A typical set of restrictions is shown on page 141.

Every homeowner wants trees, flowers, a vegetable garden, shrubs and a fine lawn. But soil that grows prize roses may cause your arbor vitae to shrivel and die. Check the soil on your lot by digging into it with an ordinary spade or, better still, with some sort of boring device, to see how deep the topsoil is. It's unfortunately true that some land developers "skin off the top" of the land and sell the black soil,

and if you have to replace the topsoil it will be an expensive procedure. Also, soil doesn't have to be black to be good; there are excellent red, yellow and other colored soils. To be sure of your soil's growing possibilities, take a sample to your nearest government county agent or a garden nursery for an analysis.

You may insist that there be fine old oaks or spreading maples or stately elms on your site, but when you excavate for the basement and dig out for the drive the roots of these lovely trees are apt to be damaged seriously. Actually, rather than later have to dig out these dying trees and replace them, you can with less expense and trouble have a 30-foot elm or 40-foot maple placed exactly where you want it for shade and beauty by a skilled nurseryman who would guarantee it to grow for three years, and which in all likelihood would grow almost forever. Landscaping should be, and is, a long-time proposition with most homeowners, and it can be the source of great enjoyment when it is done a little at a time. Yet it should be done according to a plan, drawn up by a landscape architect or other competent person, which will take into account your family's needs and desires, the house itself and its doors and windows, and the possibilities of the plot. The modern trend is toward "outdoor living rooms" which often can be made one of the most charming features of your home.

While you're checking the topsoil on your lot, bore a little deeper and find out what's underneath, at least as deep as you intend to dig your basement, if you're going to have one. It can be mighty discouraging, as one house builder found out, to get your contractor started on the excavation and find, a couple of feet down, a solid block of concrete ten feet square and eight inches thick that has to be broken up and removed at, of course, considerable additional expense. Or, if you're in a hilly area, big boulders that require

blasting are not uncommon. Borings by an engineer will discover these hazards ahead of time so that you can get an adjustment on the price of the lot or choose another one.

The many foregoing statements, when assembled into one chapter such as this, may seem a somewhat formidable obstacle to hurdle when you consider that they apply only to the site of your new home without taking into account the actual construction. Actually, however, there is a very simple way to take care of them all and still feel confident that nothing has been overlooked, and that is to deal with a really reputable realtor or real estate broker. To him these seemingly innumerable details are all in a day's work, and even if you go to him with no more instructions than to "get me a good lot" he will in all likelihood find one for you that meets as nearly as possible the specifications you have in mind. But before you commission him to act for you, talk to a few people for whom he has procured lots and find out whether you can place your confidence in him without too many reservations. And no matter how competent and honest he is, you will feel better about your prospective homesite if you understand pretty well what you want and why you want it and are willing to take a little trouble to see that you get it.



CHAPTER THREE

Plan From the Inside Out

by LAWRENCE B. PERKINS *and* CHRISTINE F. SALMON

YOU will not be expected to come to your architect with a finished floor plan of your house. This is his job, but he can do his best work only if he knows and thoroughly understands your family's particular requirements. Your part of the planning for the inside of your house is to help him to gain that understanding.

Architects call this "programming." All those things that help make a full life and enhance your setting should

find a place in plans for your house; each one should at least appear on your preliminary program.

You will undoubtedly want more things than you can hope to pay for, but put them all down and include the ambitions and hobbies of each member of your family. When demand exceeds supply, you will have to establish your own system of priorities. List the rooms that the family's activities will require and try to put sizes on these areas. You will probably find that you have planned too much house for your building budget. This is discouraging, but with determination you can keep whittling away until you arrive at the correct answer.

It does no harm, either, to bear in mind the resale value of your house. Remember you have listed some fundamental things and if they provide good living for you they should furnish good living for the next occupant.

Start With the Inside

In planning the interior of their houses most people overlook an important consideration. Your house should be planned from the inside out. The shell should only be an expression of the interior plan. Closet space and a convenient kitchen are more important to you than unused shutters and a dormer window.

The study of the history of architecture will tell you that colonial windows had small panes because the 17th century glass blower could blow no larger ones. The quaint shutters of another age were for protection. The second floor projection was used so that the inhabitants could pour hot water on their attackers. Spanish missions had small windows and doors because they could span no greater openings and sun protections were undeveloped.

We should not forget former decades, but there is no need of our living in monuments to the Dark Ages. Our

times and our scientists have developed many wonderful materials. Let's use them. If your house is to be an efficient one with economy and flexibility of space plus the most value per building dollar, you will find that it will be modern, inside and outside.

Don't limit your interior plan by freezing it over with predetermined "Cape Cod" or "Dutch Colonial" or "Georgian" concepts. You may end up with a fine symmetry but with windows too small for the living room and too large for the bathroom. On the other hand, do not allow your interior planning to force the exterior of your house into austere and unfriendly lines. Employ the intrinsic warmth of materials properly used in a truly contemporary manner.

Growing children need a growing house: you will employ static materials, but careful planning with full use of dual-purpose rooms, such as a library which can also be used as a guest room, will practically double the usefulness and value of your property.

The design for your house can take innumerable shapes, but every well-planned house will follow a certain clearly defined pattern. It will give careful consideration to pleasing proportions of rooms, circulation of traffic through rooms, location of doors and windows, the character of the wall areas, pleasant and adequate lighting, floor areas large enough to serve the purpose for which they were planned and, possibly most important of all, sufficient storage space.

Long, narrow rooms are generally unpleasant and difficult to furnish. They give the appearance of overgrown hallways. For suitable proportion the length of a room should not exceed twice its width and the proportion of length to width should be less if possible. Although the square room has often been criticized by architects, a room that is nearly square provides many advantages.

Modern architects also are doing interesting things with

L-shaped rooms to combine living and dining space or sleeping and dressing areas. T-shaped living rooms are becoming fairly common, and other unusually proportioned rooms may be worth some thought on your part.

Similar to the problem of proper room proportion is the problem of traffic. In a sense every architect is a sort of traffic engineer, and every housewife a traffic officer. If living rooms are planned so that they must be constantly passed through from end to end, they will give something of the effect of a public highway. Passage to and from rooms and the outside must be planned along the lines of existing traffic. Common requirements are for movement between kitchen and front and rear entrances, kitchen and dining room, kitchen and bathroom, kitchen and laundry, laundry and drying yard, living room and dining room, and living room and bedrooms and bath. There should always be as little through traffic as possible in any room to assure maximum privacy and freedom from interference.

Along a related line is the question of adequate floor space. There should be convenient dining space where the table can be set without disorganizing other living areas. Since tables must be served, give ample room for bringing in full dishes and returning the empties. Since beds must also be made, space will have to be provided for this simple task. Often rooms are so small or so poorly planned that with even the minimum of essential furniture getting about in them is like following a narrow footpath.

Wall areas should be as smooth and free from obstructions as possible. Such walls generally are more attractive, provide better background for pictures and decorations, and also assure a minimum of effort in cleaning and redecorating. The more provision that can be made for wall space uninterrupted by windows and doors, the more freedom will be possible in the arrangement and placement of furni-

ture. Wall spaces should also be large enough to allow room for buffets, dressers, beds, sofas, pianos and other large pieces of furniture.

This does not mean that a six-foot sofa must have six feet of wall behind it. Activities in a home are not carried out along any wall. Activities require space. Provide for these spaces and you will find a harmonious result in wall compositions.

For example, in your living room you will certainly read, so plan comfort of chairs, lights, books and ash trays. You may play cards, so group all material necessary to the game and the players within an area. There will certainly be conversation groups, so try not to divide the most logical sofa and chairs and lights and tables for this activity by pianos, card tables or desks.

But above all do not split a room into two unrelated areas divided on one side by a fireplace with a door just opposite. A fireplace is friendly to sit in front of but no one wants to toast his toes and chill his neck at the same time.

Bedroom areas require similar thought. Poor planning results in divided dressing space with your dressing table here, your shoes there and other things elsewhere.

Windows should be located so as to give adequate ventilation. They should provide as much natural light as possible to all parts of the room, and should furnish cross ventilation in bedrooms without draft on beds. Cross ventilation, which is good, should not be confused with cross circulation, which is undesirable.

Artificial lighting must be carefully thought out. Permanent light fixtures should be installed at all work centers. Enough light must be provided in stairways and halls to prevent falls, while switches, particularly in bedrooms and hallways, should be easily reached to avoid accidents.

Electrical outlets should be provided almost lavishly to

accommodate toasters, radios, electric blankets, cleaners, heaters, lamps, electric razors and an ever-growing host of other appliances. Make sure that you have wiring that is ample to carry your present load and also to handle additional requirements for new devices almost sure to come in the future. Outlets should be carefully located so that they do not come in the middle of wall spaces intended for heavy furniture, since these can be reached only with difficulty once the furniture is in place. The same caution should also be given for the placing of radiators or other heating units.

An efficient kitchen is important. Have you ever kept a record of the number of hours spent in a kitchen and the number of household activities carried on in this work center? There are three main jobs that are done here: preparation of food, cooking, and cleaning up. Each of these jobs needs a work center of its own, yet all three are so tightly interrelated that they must be close together in order to save steps. Their location should result in a normal sequence for the following steps: delivery, storage, preparation, cooking, serving and cleaning up. Each should be integrated with the other and with the rest of the house.

Kitchen storage space must be adequate for goblets, vases, bowls, dishes, silver, pots and pans, mixers, toasters and other equipment. Home canning equipment and canned goods, preserves, jellies, fresh fruits and vegetables all must be provided for.

Planned Storage Is Vital

Concerning storage space in general, you must depend to a large extent on your own individual needs. You should try to make a list of every item or class of item that you must store. However, some storage problems apply to all families. There should be an entrance closet large enough to accommodate coats, rubbers, umbrellas and other outdoor

necessities. Bedrooms will, of course, have suitable closets. An increasingly popular plan is for two closets in the master bedroom for the separate use of husband and wife, if this does not interfere too much with wall space.

Closets and storage space for children's needs, for their toys and supplies, are essential for order, while bedding, towels, bed linen and table linen have to be provided for. A home must be found for cleaning supplies, the vacuum cleaner and its attachments, brooms, mops, laundry soap, ironing board and other laundry needs.

Bathroom storage is essential for such items as towels, soap, medical supplies and children's necessities. In addition, if room for a few household cleaning supplies can be included in the bathroom, the cleaning of the sleeping quarters will be much facilitated.

Besides all of these items, such miscellaneous equipment as Halloween and Christmas decorations, picnic, fishing, hunting and camping supplies, golf and tennis equipment, screens and storm windows all must find their place.

Storage is a big problem and an important one. A great deal of progress has been made along these lines in the past few years, and your architect should be able to supply your home with storage space so well planned that it can lighten the burden of home care considerably.

All of the details mentioned in this chapter are elements in the planning of your home, and perhaps by the time you have considered each of the above you may be weary, but the proper treatment of the basic elements and the careful consideration of the preliminary plan conception will go far in bringing you a house for your family and your kind of living. Such planning will give you a background that will not impede but will enhance and further the things toward which you aim. This is your house—your design for living. Keep it that way.



CHAPTER FOUR

How Are We Going to Pay for It?

by CHARLES WRIGHT

UP TO this point you've been planning the kind of house you'd like and where you want to put it. That's well and good, because if you don't get a house that's worth the bother, you might as well continue to rent.

However, if you can't pay for the house you've planned, you'll have no choice but to keep on renting.

But don't give up now. A great many people who have always felt they couldn't afford home ownership can, with care and proper planning, safely take this major step.

At the beginning, we should point out that homes are not the only things that are hard to pay for. It's more fun to drive the new car away from the showroom and go for your first ride than to keep on making the monthly payments.

The same can be said of furniture, washing machines, refrigerators, or any other things which we use while paying for them.

It just happens that the house is the largest single purchase that the average family ever makes. Paying for it extends over a long period of time. In fact, it is likely to extend through one or two complete business cycles. On the other hand, it is one monthly payment you will have to make in some form whether you buy a house or not, because if you don't buy one you must pay rent.

Though there are no statistics to support the statement, it is probably safe to say that in the past 10 to 15 years those who lived in new houses, which they were buying, paid less in total monthly payments and upkeep than they would have had to pay for rent for comparable quarters. Likewise, they built up what is the equivalent of a savings account—their equity.

With present-day long-term mortgages, you don't have to think in terms of paying for the house completely. So long as the monthly payments and the maintenance are not too burdensome in comparison with your take-home pay, they won't be harder to meet than a rent payment. Unless your property suffers a great loss of value, you will, at resale, recoup at least your down payment.

Looked at in that light, what difference if you never get it paid for completely? Perhaps the quip made by one G.I. to another comes pretty close to being correct. When one

asked, "Why is a new house like the national debt?" the other replied:

"Because neither will ever get paid off."

To which we add, "As long as the burden of carrying either one is not too great—so what?"

However, with respect to houses, many mortgages do get paid off eventually.

The real meaning of ownership is the right to use the property in any legal way you see fit. From that standpoint, you "own" the property just about as completely while you are paying for it as you ever will. There are a few exceptions to that, but they aren't too important. It's true that the institution which loaned you the money will require you to keep up the taxes and insurance on the property, but you would want to do that anyhow. Likewise, you may be required to maintain the property satisfactorily—which you also would want to do. Any major changes such as remodeling would require the permission of the mortgagee. But even though your equity may be a minor part of the value of the house, you do actually "own" it as long as you continue to make your monthly mortgage payment.

Understand Your Mortgage

Later we will analyze that monthly payment, but first let's have a closer look at this thing called the mortgage. Most of us can remember the melodrama about it. Invariably, the villain is the man who holds the mortgage. The beautiful heroine's parents are unable to pay it off, so the villain makes a deal to accept the daughter's hand in marriage instead. The due date has arrived and the villain is about to marry the heroine when in dashes the hero with the money to pay off the mortgage. He marries the daughter and the villain is foiled. It's all burlesque now. But there was a day when it was all too true, except that the cases in

which the mortgagee actually wanted to marry the daughter were probably rare.

The first mortgage on real estate is an old institution. However, in its older days the mortgage was a short-time affair. It wasn't used in connection with the purchase of a house, but rather as a means of using the real property as security for a loan of cash. Terms commonly ran from three to five years, and very often less than that. Interest, often at high rates, would be paid periodically, though seldom monthly, and the entire loan was paid in a lump payment. If the borrower happened to be a farmer (which often was the case), and if he had a few bad crop years, he stood to lose his farm. And many did.

Only in recent decades has the mortgage been widely used in financing the purchase of homes. However, its use for that purpose is so widespread today that it may well be called the standard practice; but today's mortgage differs in several important respects from that of the melodrama days.

First, it runs for a longer term—15, 20 or 25 years.

Second, it is now an amortized mortgage; that is, payments on interest and principal are made each month rather than in a lump sum. It is, in many respects, like any other installment contract.

Third, the interest rates are lower—five percent is now common, four percent for veterans if they use their G.I. loan rights.

And finally, there are legal protections for the borrower and financial protections for the lender which formerly did not exist.

In most respects, the long-term amortized mortgage is well adapted to its task of providing the money for a house purchase. Its major defect, however, is that the monthly payments are rigidly set at the time it is taken out, even

though the period is so long that everybody knows many borrowers will have great changes in income and the property may undergo many changes in value. In fact, as pointed out previously, the mortgage period is quite certain to extend through a complete business cycle. When FHA mortgage insurance is used, the lender gets sufficient protection. If the borrower is unable to make his payments, and if the present sale value is below what is still owed, the lender's loss will be made up by the FHA insurance. However, the borrower has no such protection. Suggestions for providing it will be made subsequently.

Study Your Monthly Payment

The heart and core of the long-term mortgage is the monthly payment. It will be worth while to take it apart and look at it. The one we will dissect is the FHA insured mortgage payment. It has five divisions:

1. The interest on the money you have borrowed.
2. The mortgage insurance.
3. Payment to principal.
4. Local property taxes.
5. Insurance on the house against fire, wind damage, etc.

In a typical community your first monthly payment might add up as follows for a 20 year mortgage of \$6,000:

Interest at 4½ percent	\$22.50
Mortgage insurance at ½ percent	2.38
Payment to principal	15.48
Local property taxes	9.00
Fire and wind insurance	1.20
Total	<hr style="width: 100px; margin: 0 auto;"/> \$50.56

The last two items in this payment are estimated for a "typical" community. Actually they differ from one locality to another, and can finally be determined only when you are considering a particular house.

Using this case, however, you can readily see that out of the total payment, \$15.48 goes toward reducing the \$6,000 owed. This means that \$35.08 is nonequity payment; that is, the part which is roughly equivalent to rent. It isn't exactly equivalent to rent, because the landlord is supposed to take care of upkeep, while the homeowner has to provide that himself. However, if you are considering a new house, the upkeep will not be large for the first five to ten years.

Each month the interest decreases slightly and the payment to principal increases by the same amount. At the end of one year the nonequity part would be \$34.29, only 79 cents less than it was when you started. After five years, it will be down to \$30.89. At the end of ten years it will be \$25.48. However, the reduction in nonequity payment can't be used for upkeep because the total payment is reduced only very slightly. This is one of the points at which the home buyer's position should be improved.

Summarizing, it will be seen that the monthly payment contains certain parts which we call nonequity items. We have noted that these get smaller each month. It also contains one item which goes to reduce the amount owed. This reduction in the amount owed increases the equity, since the equity is the difference between present sale value and the amount still owed. Provided the value of the house remains fairly stable (say a depreciation of not over two percent a year), most of this can be considered as savings.

How Much Should You Pay?

Assuming you are planning to buy or build, the question of how much you should pay for your house is sure to come

up. There are a number of things which will enter into the calculation. Here is a list:

1. How much cash you have.
2. The length of time you have to pay off the mortgage (amortization period).
3. The interest rate on the mortgage.
4. The local property taxes.
5. The size and nature of your income.
6. The size of your family.
7. Your own desires.

These are very important, so let's look them over in detail.

Naturally, the amount of cash you have is important. It determines how much of a mortgage you will have to carry. Let's suppose you need a five-room house and can get one that suits your needs and desires for \$10,000. If you have \$5,000 cash and wish to put it into the house, you will then have a \$5,000 mortgage to carry. Assuming you are willing to spend one sixth of your spendable income for nonequity house payment, it would require a steady take-home pay of \$176 per month to carry such a mortgage. If you have only \$2,000 in cash, you will then have to carry a mortgage of \$8,000. On the same basis, this requires a steady take-home pay of \$281 a month.

Some may ask, in the above case, "Suppose I do have \$5,000 in cash, should I put all of it into the house?" The answer here depends on your own circumstances. It is always wise to keep a few hundred in savings or bonds for possible emergencies. However, unless you can use the remainder to bring a return greater than five percent (four percent in the case of veterans), you might better use it on the house because that is what you will have to pay on your mortgage. On the other hand, if you feel that the price you

are paying for the house is greatly inflated, and you have a safer place to put your cash, you may want to put a smaller amount of cash into the house, even though you cannot get as much as five percent on the remainder. It is the old problem of risk vs. security. Yet, if you decide to make a smaller down payment, be sure your income is large enough to carry the mortgage.

Get the Best Possible Terms

Let's look now at the second point—the length of time you have to pay off the mortgage. This is called the amortization period. The longest period in use today is 25 years. Under the FHA, 20 years is the most common, but 15 years is also often used. Although it will be contended here that the other parts of your monthly payments are more important in determining how big a mortgage you can carry, it makes a considerable difference whether your payments run for 25 years or for 15. For example, on a \$5,000 FHA mortgage, the total monthly payment on a 15 year basis would be \$10.37 higher than it would be on a 25 year basis.

Just as the amortization period affects the size of the monthly payment, so does the interest rate. The common rate now is five percent. Veterans can get guaranteed loans at four percent. In the 1920s, rates of seven and even nine percent were not uncommon. The FHA five percent rate now in use is split into $4\frac{1}{2}$ percent actual interest and $\frac{1}{2}$ percent for mortgage insurance. But as far as the borrower is concerned, the effective rate is five percent. To show how important the interest rate is, a \$5,000 mortgage at three percent would result in a monthly payment \$8 smaller than one at five percent. On the basis used before, you could carry the mortgage on a steady take-home pay of about \$131 a month instead of the \$180 required at five percent interest.

HOW MUCH CAN YOU AFFORD TO PAY?

MONTHLY TAKE-HOME PAY	TOTAL MONTHLY PAYMENT, 20 YEAR MORTGAGE PERIOD																														
	\$26.99	28.67	30.36	32.04	33.73	35.42	37.10	38.79	40.67	42.17	43.86	45.54	47.19	48.87	50.56	52.25	53.93	55.62	57.30	58.99	60.68	62.36	64.05	65.73	67.42	69.11	70.79	72.48	74.16	75.85	
\$3200	\$112																														
3400		119																													
3600			126																												
3800				133																											
4000					140																										
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How much money do you actually "take home" each month? Find this figure, or the one closest to it, in the diagonal column running down the center of this chart. Follow the column to the corresponding figure on the left. This will be the maximum mortgage you should attempt to pay. Follow the column to the figure above your take-home pay; this will be the total monthly payment which you would make on a mortgage of this size. For more complete figures on this subject, see the table on page 140 of the appendix.

The next item that affects the amount you can pay is the local taxes. Standard practice is that the taxes are paid a year in advance, and are included in the monthly house payments. Thus, if taxes are high, the payments are increased. This means that you could afford a higher mortgage in an area of low taxes than you could in one of high taxes.

Next to the amount of cash you have, the most important single factor determining what you can pay for a house is your income. It must be large enough so that the mortgage payment is not overly burdensome. And it must be steady. The steadiness of it is very important, because it allows you to budget your expenditures.

Your Income Affects Your Purchase

If each week's pay is budgeted so that the proper amount is put away for your house payment, you should have no more difficulty meeting it than paying rent. Of course, this requires enough self-control to stay within your budget. The tables on pages 37 and 140 are based on the assumption that the nonequity part of your first payment should not exceed one sixth of your monthly take-home pay. This is roughly equivalent to spending one sixth of your take-home pay for rent. On the basis of a 20 year mortgage, your total monthly payment will then be less than 25 percent of your take-home pay. If your mortgage is not too large in comparison with your income, if your self-control is sufficient so that you can stay within your budget, and, finally, if you don't run into unemployment or have a string of tough luck, you can continue to make your payments and eventually have a house free and clear of debt.

Of course, size of family has a bearing on how much you can pay for a house, too. The larger the family, the greater the proportion of the breadwinner's income that must be spent for food, clothing and doctor bills. Furniture gets

more wear and has to be replaced more frequently. School becomes more costly as children get into higher grades. The larger the family, the larger the house required. Since you must have a larger house, and since a larger proportion of income must be spent for food, clothing, furniture replacement, doctor bills, etc., you may find, if your family is large, that a new house is not within your means, and you may have to accept an older house in a somewhat less desirable neighborhood.

Then, finally, and very important, how much you can pay depends upon how much of a home body you are. Do you like to mow a lawn, plant and care for flowers, fix leaky faucets or putter around at a basement workbench? Are you willing to do your own painting? If you do these tasks yourself, you save on upkeep costs. Do you value a house so highly that you will go without a car, go to fewer shows, spend less at night clubs? Is yours the kind of family that can get its enjoyment out of hobbies made possible through ownership of your home? If you can answer yes to these questions, it may be that you will be willing to put a larger proportion of your cash and your monthly income into a house than the average family does. But a note of warning. Don't kid yourself into answering yes to these questions while thinking about your dream house. If you are like most people, you will want a nice house, *and* a car, *and* shows, *and* other things.

The Veteran's Situation Is Different

Let's now consider the case of the veteran buying a house. Is his position any different from the nonveteran? In certain particulars it is. His interest rate is lower than that commonly prevailing on small real estate loans. He gets his loan at a straight four percent, whereas the best most nonveterans can do is at least five percent. Likewise, he

can, under certain circumstances, borrow the entire amount. That is, he may not have to put any of his own cash into the property at all. On the other hand, this means he must watch the relation of his mortgage to his income very carefully.

Take a specific case. Suppose he can get a new house to suit his needs for \$8,000. In some parts of the country this is still possible. The Veterans Administration guarantees his loan up to \$4,000 with or without FHA insurance. The veteran then proceeds to make his monthly payments consisting of interest, taxes, fire insurance, and payments to principal. One might then conclude that since he has none of his own cash in the house, he could not possibly lose anything. But such a conclusion is far from true.

If his monthly payments are no greater than he would have to pay in rent for comparable quarters, he is ahead of the game, because part of his payment is being applied to reduction of principal. This is fine, if the value of the property stays up, or if the veteran is able to continue his payments and keep possession. However, if he is unable to keep up the payments because of illness or unemployment or other causes, and if the sale value of the house has gone down, then he is in for trouble.

The bank or other lending institution which loaned him the money is safe. The Veterans Administration will pay them in case of loss. But whatever the Veterans Administration pays in the veteran's behalf is then owed by him to the Veterans Administration.

Suppose that in five years the veteran has built up an equity of \$1,200. He then wishes to move, but finds that the sale value of his house is now \$6,000. It had been valued at \$8,000 only because of the unusual building costs of a chaotic period. He discovers that his \$1,200 equity has melted and he owes the Veterans Administration the \$800

difference. He, like civilian buyers, may find that he is badly in need of equity protection.

It was said on a previous page that it is not necessary to think of home ownership in the same sense that you do the ownership of a car or of furniture. These movable goods must be paid for in a comparatively short period of time. Because the purchase price of a house is so much larger and because the period for payment is so much longer, you need not be disturbed because you are not actually the sole owner. Your possession and use of the property are almost unrestricted, and over the years your equity is being built up so that lack of actual ownership is of little consequence to you. There are, however, certain protections which borrowers need in order to maintain the security they require under a long-term mortgage.

The Borrower Needs More Protection

Houses are the only consumer goods which are affixed to the land. They are the only goods which irresponsible people can't run away with. Further, if they are well cared for, they are among the most durable of all goods. These characteristics, when combined with government mortgage insurance, offer great security to lending institutions, but more of this security should be passed along to the borrower.

When this is done, it may well come to pass that you will buy a house with a very small down payment, on a 30 or even 40 year amortization period, with no particular expectation that you will ever own it free of debt. What you will have is the current use-value of the house for each year in which you occupy it. This is a very important consideration. You will build up more or less of an equity and since this equity is salable it can be considered a saving. The shorter your amortization period, the more equity you will have; the longer the period, the less you will have.

Under this concept of home ownership the house payment would consist largely of interest, insurance, and local property taxes. This would not be greatly different from paying rent except that the occupant would be responsible for the upkeep of the property and, since we are considering new houses, a small addition to the payment would take care of that item. Thinking of home ownership in this light results in a wholly new concept of what purchase price you can afford.

The possibilities of the long-term mortgage have not been exhausted. Given lower interest rates and greater flexibility in the monthly payment, you might well be able to buy a new house costing two and one half to three times your annual income.

What are the protections which could and should be extended to the borrower?

The chief defect of the long-term amortized mortgage is that it doesn't provide for the emergencies which are so likely to occur during the time it will run. In other words, if you take on a 20 year mortgage, it is likely you may have periods during that time when it is impossible to meet your payments. Mortgage insurance which you pay protects the bank or other lending institution that loaned you the money but it does not protect either the equity value which you have built up or, more important, your right to continue living in the house.

For example, you buy a house on a 20 year mortgage of \$6,000. You make payments on the house for 10 years. As the only breadwinner of the family, you then are afflicted with an illness or accident which incapacitates you for a year. In such a situation, there are two things you can do. You can sell the house and buy another which is much cheaper. To do so you will, no doubt, have to buy in a less desirable neighborhood. Or you can refinance and stay where you

are. However, refinancing is an expensive proposition. You must pay the charges for appraisal, title examination, photographs, and oftentimes other fees.

Mortgages Should Be Flexible

What is needed is greater flexibility. For example, there might be a standard plan of payments called Plan A. This would be the plan under which you had made your payments before running into your troubles. For varying contingencies there could be Plans B, C, and D.

Plan B might take care of the person who obtained an increase in income and wished to make larger payments, Plan C for the person whose income had gone down and who, therefore, needed to decrease his payments. Plan D could provide for an automatic payment of the nonequity parts of the payment out of the equity already built up. This plan would take care of the case mentioned above.

Such flexibility might well be extended by the banks or other lending institutions as part of the contract entered into. The law and regulations governing FHA should be such that the mortgage insurance would still hold good.

Administratively, this would cause the lending institutions some difficulty, but it is hard to believe that it is insurmountable.

However, there still remains the question of the rise and fall in the general price level of dwellings. Houses during periods of inflation and housing shortage may be priced at one and one half to three times their proper level. The reason they are so greatly overpriced is because of the great demand. It is likewise a foregone conclusion that, as that situation eases, the prices will go down. Since the demand may be greater in some areas than in others, it would, no doubt, take longer for the shortage to ease in certain areas.

As for new houses, in times of shortage of materials and

great demand, construction costs rise to unexpected heights. There are two reasons why these costs rise. First, there are the increases in hourly rates for construction workers, and second, increases in prices of building materials. These are long-time factors. Hourly rates for workers are not likely to go down for a long time, if ever. Prices of building materials are not likely to go down for a considerable period, because the costs of producing them have increased greatly. Thus, these two can be described as long-time reasons for higher costs.

Recent studies by the National Housing Agency show that, throughout the nation as a whole, the cheaper houses (\$6,000 and under) had gone up 65 percent between 1940 and 1946. The class of houses priced between \$6,000 and \$12,000 in 1940 had risen 57 percent by 1946. These increases were considerably above the construction cost increase attributable to labor earnings and material prices. The Federal Home Loan Board carries an index of construction costs based on these two factors and it shows a rise of 41 percent for the same period.

Hence, those people who are so unfortunate as to have to buy either a new or existing house at such prices are likely to lose that part of their equity represented by the difference between the 60 percent (approximate) rise in prices of houses, and the 40 percent (approximate) rise in labor and materials.

It may be clearly seen that, under the spur of demand, house prices can go beyond labor and materials costs. We must never forget that this same process can work in reverse. In the event of a surplus of houses, it is just as easy for house prices to go below that justified by labor and materials prices. If that happens (and you are forced to sell during such a period), you likewise will lose your equity. And if you are not required to sell during that time you

would nevertheless have to go through a period in which the amount you still owed on the house would be greater than the current sale price. However, in this latter case, it is not likely that the amount still owed would be greater than replacement cost.

One other aspect of an inflation picture concerns its effect on family budgeting of income and the meeting of monthly mortgage payments. There is no questioning the fact that a family on fixed income (or income which lags behind price rises) is hard put to hold its spending within its budget. If you have calculated spending a fixed percentage of your income on the house payment, and then you find that food, clothing, and other costs are rising faster than your income, it won't be easy to continue making the payment. But consider the alternative. It is generally agreed that rents cannot be held constant while other prices are rising. If there are no rent controls, you not only have other parts of your budget rising, but large increases in rent as well. The fixed monthly payment is then vastly preferable to an increasing rental.

What Should Your Income Be?

It now remains to attempt to determine what income is needed to carry a given mortgage. We have previously discussed several of the factors which affect this question. The table on page 139 shows how people spend their money at various income levels. However, these figures are averages. Within each group there are sure to be many families whose expenditures do not line up with the average. To a large extent, the manner in which a family spends its money reflects its ideas of which things are worth-while. Thus no one could possibly tell any individual family how much it can spend on a house.

Nevertheless, it is possible to point out certain limits. The

chart on page 37 attempts to show these limits. The family which goes above them does so at the risk of having a budget which will fall short on the essential items—food, clothing, medical expenses.

The limits in the table on page 140 show that you should not take on a mortgage in which the nonequity parts of the first payment total more than one sixth of your take-home pay. In the same table this is shown by the first column under "monthly take-home pay required." The nonequity portion is at its largest during the first year; in fact, at the time of the first payment. So it is assumed that this payment is about what you would have to figure for rent. Considering the figure as constant would make allowance for depreciation and upkeep.

As previously stated, the taxes and insurance have been estimated for a typical community. The taxes are calculated on a basis of \$1.50 per thousand per month on the full amount of the mortgage. Insurance is assumed to be 20 cents per thousand per month, and is also estimated on the full coverage of the mortgage. It would be necessary to check with the actual monthly costs in your own particular case on these items. These costs commonly account for one third to one fourth of the nonequity portion of the monthly payment. Thus they are by no means negligible.

The above method of determining the relation between income and size of mortgage is based on the nonequity portion only. Actually, your total payment includes the payment to principal also. Therefore, we have calculated the total payment for a 25 year, 20 year, and 15 year mortgage. It is for the individual himself to determine how large a total payment he can make. However, 25 percent of the take-home pay would be of doubtful wisdom.

As a prospective home builder (or buyer) you might well do the following things:

1. Find out what size of mortgage will be necessary on the house you wish to build (or buy).
2. Determine the total nonequity costs for the first monthly payment. Don't take a mortgage in which this item is much more than one sixth of your monthly take-home pay.
3. Find out the total monthly payments at various spans of years: 25 (if possible), 20, 15, 10. Then select the one which suits your own desires, preferably the one that comes closest to one fifth of your take-home pay.
4. Keep in mind that any total payment which is more than one fourth of your take-home pay is definitely in the danger zone.

One final thought about costs needs to be brought out. There are certain costs of obtaining a mortgage on a new house which must be paid in cash. These are such matters as title search, photographs, appraisal fees, one year's taxes in advance, fire insurance in advance, etc. These vary in different places but one must plan to have ready \$150 to \$300 for this purpose. Likewise, a new house seldom has landscaping; oftentimes there are screens, storm windows, combination storm doors, etc., which must be purchased. Hence, in determining your cash down payment, allow some leeway for these items.

Some people enjoy apartment life in a large city. Some prefer the single family detached house, where they can plan and care for their own grounds. For those who do like this latter kind of living, and who have a steady income, it can be said that they have a good chance of "living happily ever after"—*IF* they have not taken on a mortgage too great for their income to carry.



PART 2

BUILDING

In many ways, the next three chapters—Five, Six and Seven—are the most important of this book. They tell you about architects and contractors and your legal rights—three subjects as vital for you to be informed on as any you are likely to meet in building your house.

Chapter Eight on building materials—and Chapter Nine on the new gadgets science has developed for homes—ought to excite your interest and stimulate your appetite to where you will want to start digging the foundation tomorrow!

THE EDITORS



CHAPTER FIVE

Should We Have an Architect?

by L. MORGAN YOST

SO MANY of the houses you see in plan books are adapted to a world where all things seem to be but nothing is, where life is composed of fluffy ruffled curtains without tattle-tale gray, streamlined kitchens with nary a dish in sight and white picket fences that never need paint. A house designed to meet such idyllic conditions as these could hardly be a suitable home for a family that sometimes neglects to weed the garden, leaves an occasional stack of dirty

dishes or likes to strew the Sunday newspaper over the living room floor.

The architect solves the very real and homely problems of everyday life. His artistry in combining materials and proportions into a house of pleasing appearance is nothing compared with his artistry in arranging interior space, appliances, light and air, heating, hardware, bathrooms and kitchen sinks, laundry tubs and doorbells, steel beams and screened porches into a place where a real family can make its real home.

You Need a Practical House

The architect is an artist only insofar as he triumphs over these practical conditions and requirements. It does not take an artist to borrow an entrance from a house 200 years old and tack it onto the front of a new one. It does take an artist to know just where to place that doorway in relation to the interior of the house so that you can get to it without bumping your side against the corner of a table or your forehead on a door in a dark hallway when a caller urgently rings the doorbell.

In houses that you read about you may, if you wish, disregard the climate, the site, the available building materials and the peculiarities of the people who might live there. But in your own home each one of these things and many others should weigh heavily in determining the design of the house. These are the factors that the architect works with to produce your house.

The design of the house does not end with the house but extends into the grounds, whose areas augment the rooms. This is all the province of the architect who continues his design to provide areas and spaces for proper furnishings for both the garden and the house.

So many people have said to me, "You must have an idea

for the ideal house." Patiently I explain that one cannot design an ideal house any more than a painter could paint the ideal man. All men are different—some thoughtful, some gay, some strong, some graceful. What a bore a man would be who was all of these things! Indeed, he does not exist, and a painter could not get him on his canvas if he did.

Although the architect cannot produce a universally ideal house, he can produce the ideal house for you and your family. In order to do so he must grow to know your needs intimately. He must be well aware of such details as your income, your hobbies, your avocations, the likes, dislikes and personalities of all of you. He will try to learn everything he can about your way of life.

If he learns enough about you he can design a house, a real house which will become your home and which will fit you as no other house could, for indeed no other house would have been designed for you and your family only.

That is the greatest charm of the architect's houses. The architect's creative faculties and ingenuity shape a home into new forms developed from the problem on hand and only that problem.

Choose a Good Architect

Probably there is some architect whose work you have admired. Perhaps you have seen his houses in magazines; maybe there are houses in your community which he has designed. If you know him, fine. Go to see him. If you do not know him, call him up. Tell him you are thinking of building a house and would like to talk with him about it.

We all have heard and generally believe the old adage that anything you get free is worth exactly what you pay for it. Don't expect architects to give you free sketches and then expect to select from among several architects by means of these free sketches. In the first place, it is un-

ethical for an architect to do this, and the one who does probably has a poor standing in his profession. Secondly, free sketches would necessarily have to be turned out so quickly that the architect could not put proper time or thought into the design and it could not form a proper basis for a selection. Probably, should you get free sketches, you would be most attracted to the man who made the prettiest ones. This would not mean at all that the plan or the design or his ability would be the best. A pretty picture is no indication of practical ability or knowledge of building.

Don't hesitate to call the man with a wide reputation. In all probability he charges no more for his services than would one of the lesser lights. On the other hand, don't assume that the little-known man is not capable of doing a good house for you.

Remember that every man who calls himself an architect has passed rigid training requirements. In most states this amounts to four or five years of college training with a degree in architecture and a year or more of practical training experience under an older, licensed architect. But that does not make him an architect until he has successfully passed the rigid state board examination.

Depending upon the state, these examinations last two, three, or four days, and cover all phases of design, construction, building laws, plumbing specifications, strength of materials, and architectural history and business practice. If he is successful in passing this examination—and many are not—he may then call himself an architect and hang out his shingle. Though most architects have at least some degree of competence, some will soar to the heights and shine brightly, while others will plod along or drop out.

You must be wary, of course, of those who profess to practice architecture without this necessary license. They call themselves designers or home engineers or give them-

selves some other misleading title. If a man does not display his license on his office wall or does not sign himself as architect or have the word architect on his letterhead, you have every right to ask him whether or not he is registered to practice architecture.

If you have selected the famous man, you will not need to ask him about his work or references. If you like him personally and feel that it would be a pleasure to work along with him and help him in designing and building your home, you may employ him then and there.

But if you are not acquainted with the architect, you will want to talk to him to discover his philosophy. He will ask you about your requirements and about your building site if you have already acquired it. You may ask him to show you photographs of some of his houses, or he may give you the addresses of several which are about the same size as the one you hope to build. Do not, under any circumstances, ask him to show you one like the one he would do for you, and do not expect to like, completely, any of the houses he will show you. Remember that each of these houses has been designed for the family that probably is still living in it. That family is not yours. Therefore, that house is not yours, and though it may be attractive you may expect to like the one he will do for you much better.

The Architect Will Earn His Fee

Now you have decided on the architect, and you tell him that he is the one. What happens then? He will ask you to sign a contract for his services, stipulating just what he is to do and how much you are to pay him. This is not signing a contract for the building of the house. That comes later after plans and specifications are complete and bids have been taken.

For complete architectural services, most architects charge

a fee of ten percent on the actual construction of the house. For this amount he is your counsel and guide, not only for the design and construction, but also for such things as site conditions, legal restrictions, financing, landscaping and site planning, and he will act as a general strong man to receive all your questions, doubts, problems—and joys, too—which the building of your house will bring.

First, of course, he will want to know you and your family. He may wish to come to your home to see you in your natural surroundings. He will ask many questions, not only about what you want in your house but how you live. Many of these questions may seem pointless, but they all have a bearing on the shaping of your new home. He will visit the site, and help you select it if you wish. He will look at it from all angles and, what is more important, he will stand in the middle of it and look from it to see about views: which are good and which are bad—such as the neighbor's garbage can.

He will see that he is provided with a survey of the property, showing the levels, slopes and valleys, if any, the location of trees, and things not readily seen such as sewer, water, electric and gas lines.

He will take into consideration the building code and zoning restrictions of the community and he will study the neighboring houses, not to make your house like them, but merely to make it as harmonious as possible.

Then you may not see him for a week or two, for a good plan does not develop suddenly. He will require time to try scheme after scheme, developing small portions of it, possibly throwing the whole thing away and starting over and over again many times before he reaches a plan solution which he thinks worthy.

When he has the plan in good shape he will call you in for discussion. You may, perhaps be disappointed not to

see some pictures of the outside of the house, because naturally you want to know what it will look like. However, many architects do not attempt to make pictures of the outside until the plan has been developed to a point where changes seem unlikely, the reason being that you might go against your better judgment and keep an undesirable plan merely because you like its outside appearance. But the outside of the later and properly developed plan will be better once it is completely designed.

The house must grow from the inside to the outside. That is the only way. A house forced into a preconceived exterior will be a failure and there are no exceptions to this rule.

Now, finally, both the plan and the elevations are done to your satisfaction. At this point, a portion of the architect's fee becomes due, usually one fifth of the total based on a reasonable estimated cost for the building. Then he will ask you to authorize the preparation of working drawings and specifications.

Some people still have the quaint notion that architects sit around drawing white lines on blue paper, making blueprints for houses. The blueprint is merely a means of reproducing the original drawing in quantity; the drawings, of course, are made on white paper.

During the time working drawings are being prepared, your architect will consult with you to get your decisions on materials, equipment and finishes, your requirements for storage, the placing of furniture and all the other little—and big—things that come up, until the structure, the exterior and all interiors are accounted for.

The cases and cabinets will be detailed, the work of the plumbing and mechanical trades will be accounted for; in short, everything that will go into your house will be shown on these drawings and described in the specifications.

This means bringing together many trades, many items of plumbing, electrical equipment, heating and structural supplies from many different manufacturers, and making them all fit together into one harmonious whole.

This is no work for a novice. It requires not only training in design and engineering, but also practical experience in knowing what items are available, who manufactures them and who installs them.

When the drawings are substantially completed, the architect will have a set of blueprints made for you to check over. These you should study, jotting down any questions you have, and suggesting any changes which come to mind. After you have spent several evenings doing this, you will have another meeting with the architect to discuss other problems that have arisen. Some of your suggestions will be discarded on the advice of the architect and others will be incorporated into the plans, bringing them finally to completion. The specifications will then be completed to go hand in hand with the drawings. Here it is that the major portion of the architect's fee is due, usually about half, bringing the total fee paid to about seventy percent of the entire fee.

Now comes the time for you to make a decision as to how the actual building is to be handled. There are two ways: the general contract method and the separate contract method.

General Contract Has Advantages

Using the general contract method, the architect places the complete plans and specifications out for bids to several general contractors, each of whom submits a figure for which he will agree to build the complete house.

That sounds very clean and simple and usually is. The architect, of course, attempts to limit the bids to reputable

contractors so that you will be safe in accepting the low bid. Normally, such a bid would be a definite price and would hold even though it cost the contractor a higher figure to complete the house. However, during unsettled times, very few contractors will submit a definite figure, but will merely give an estimate based on current costs but which could be increased should labor and material prices become higher.

The general contractor usually handles one or two of the trades himself. Then he secures proposals from a dozen or more different subcontractors, each from a different trade, totals their figures, adds his own costs, overhead and profit, and puts in the total as his bid. The costs, overhead and profit are generally held in check by competition and vary with the ease with which work is to be had. The general contractor assumes the responsibility for the job and coordinates the trades, taking care of any discrepancies that arise.

Separate Contracts May Be Used

The other method which many architects are now using is called the separate contract method by which the architect takes competitive bids in each of the trades needed to make up the completed building, such as carpentry, masonry, plumbing, plastering, and so on. As there are about fifteen trades, this means he may take thirty or more bids.

These bids are then submitted to you as the owner and, other things being equal, you accept the low bid in each trade, and contracts are written between each low bidder and you, the owner. Notice that the architect does not become a general contractor although he does run the job and coordinate the trades. For this extra work he charges an extra fee, usually four or five percent of the cost of construction. This is in addition to the thirty percent of his basic fee which was allocated to supervision. Of course, the general contractor would have added to these same bids

possibly five or ten percent overhead and ten percent profit, which is considerably more than the four or five percent the architect would charge for doing this work. However, the general contractor would guarantee, which the architect does not, to bring together discrepancies among the various trades and complete the building at the contract price.

In the hands of a competent architect, there is little chance for variation among the separate contracts and, if the individual contractors are responsible, there is every reason to believe that the building will be completed at the price of the total bids. However, it is up to you to decide, as owner, which method you wish to use.

Many architects prefer the separate contract method of working because they have a closer control over the job. They can give instructions directly to the men doing the work, while, with a general contractor, instructions must go through the general contractor, involving a loss of time and a possible inaccuracy in relaying these instructions. With a good, competent general contractor, this would not be a factor, particularly if he were accustomed to working with the architect. If the general contractor will not guarantee his top price, much of the advantage of the general contractor's guarantee as to cost is lost and it would seem that the separate contract method would have much to recommend it, resulting in lower cost to you for the completed building and more centralized control of the building operations by the man who drew the plans and who therefore knows most about how the building should be built.

The separate contract method must necessarily be confined to locations close to the architect's office so that he or his superintendent can visit each job as often as necessary, possibly every day.

Whether the work is done on the general contract method or the separate contract method, that portion of the archi-

tect's fee covering the supervision is payable in several installments as the work proceeds.

The Architect Guards Your Investment

No matter which method is used, the architect will keep accounts of the job as to contract prices, credits, extras and payments made. When payments are due as the work progresses, he will write out a certificate, stating that so much money is due certain contractors. The amount of money will be determined by the estimated value of the work in place less a withheld amount of approximately fifteen percent. Thus you always have a safety factor of a portion of the value of the work held back at all times until the building is completed. Upon completion and acceptance of the building or the work of each trade, this fifteen percent hold-back is paid out in full.

The architect secures proper receipts and waivers of liens for each payment unless the pay-outs are handled through a mortgage company, in which case the architect writes the certificate but the actual pay-outs are handled by that company.

One of the most erroneous, yet widely held, impressions is that it is more costly to build with an architect. Assuming that you would end up with the same house, this is not true at all. The chances are that the architect would save you a considerable sum.

To begin, let's take the matter of design. The very time that he spends on design means that the house you get will be much more suitable for you than one taken out of a stock plan book or one which was designed by a less competent person. You might call that the value which the architect can put into your house through planning alone.

Then you should know that usually the architect-planned house will command a higher resale value than a haphaz-

ardly planned house, and that mortgage firms are usually willing to lend a higher percentage on the house which an architect has designed. The mortgage firms are willing to do this because they know that the house fits its location and has not been adapted in an unimaginative manner from a plan which originally had never been intended to be built at that particular location.

The architect, in selecting fittings, hardware, lighting fixtures and interior finishes, by his training in color and harmony can give you a much richer effect at less cost than someone who is not so trained.

The appearance of the house designed by the architect is one of chaste simplicity with richness gained by the materials and their proportions. The unskilled man would try to get some distinction or attractiveness into the house by applying ornaments and gewgaws which in a few years would look silly and also prove costly.

The completeness of the architect's plans should guard against extras, unless you change your mind about something after the building is started. Many times people are attracted to a low cost for a new house only to learn that many extras are added during construction. And once the building is under way you cannot very well withdraw. If you want additional changes made in your house you have to pay for them. If the original price for an architect-designed house seems to be higher it is because these items of better construction and equipment have been included in the specifications and are not left to be added later.

The architect will do his best to anticipate any troubles, but even his experience will not allow him to foresee such things as hidden rock or quicksand. Extras to take care of these contingencies would be added whether or not an architect was employed.

The supervision which the architect gives to a house is

worth many times the fee for that portion of his services. The architect can order a defective piece of construction removed and replaced at no additional cost. Most contractors are thoroughly honest and try to do a good job. But if a careless workman makes a mistake, it costs the contractor money to rectify it. Without the architect's supervision he might correct the mistake in the easiest and cheapest way, but not necessarily the best way.

The architect's supervision means that all the problems arising in the various trades are solved in a manner which will assure the common result. For instance, a problem in just where to run plumbing pipes is more easily solved by the architect as he knows where wiring conduits, duct work and other hidden parts are to go.

With increasing complexity of the mechanical parts of a house, it is all the more necessary that heating, plumbing and electrical work be planned beforehand and not be left to chance on the job, as it so often is in work not planned by the architect.

From the very beginning, the architect has been working for you. You owe it to him to tell him all you can about yourself and your family. Be frank about your budget, your income and your prospects. You may have complete confidence that any intimate facts you give him will be held in trust. If you try to keep things from him, it will make it all the more difficult for him to design the house. This is not only true of items of budget but also of family life.

Don't try to make your architect believe you are socialites who give cocktail parties every other Tuesday and big dinner parties every other Saturday, if such is not the case.

Don't try to impress your architect. He will know you pretty well, anyway, by the time the house is half built, and if you have not been truthful with him earlier, it may be too late.

If you are a good client and he is a good architect you each will have gained a staunch friend. You will have a house that will be the perfect house for you and your family. And he will have it, too, as an accomplishment to which he can look with pride. Houses are not just pieces of business with an architect. He gets a great glow of satisfaction out of providing that perfect house for you—and that is a large part of his payment, for few architects become wealthy.



CHAPTER SIX

What Does a Contractor Do?

by LAURANCE H. MILLS

IF YOU employ the services of an architect, and good practice indicates that you should, you may not actually be burdened with many details of contracts, contract negotiations, or the work of the contractor, except to note in a general way that he is the man who is causing your house to take shape.

But most people like to know what is going on. They want to talk intelligently about their home in every phase of its construction, and they want to make sure in their own minds that everything is going as they want it.

Therefore, whether you let your own contracts or not, you will probably want to know as much as possible about this part of the work.

Employ a Reliable Contractor

First, consider the choice of contractors. Most contractors will gladly refer you directly to previous clients for whom they have built houses. Use such opportunities to talk personally with these buyers. They can give you convincing evidence of the contractor's methods and ability to serve you satisfactorily.

Testimonial letters also have real value, but personal interviews will prove far more valuable.

In almost every sizable community in the United States, you will find one or more organizations or associations such as a local chapter of the National Association of Home Builders of the United States, the real estate board, the chamber of commerce, banks and mortgage companies, and federal savings and loan associations.

All of these organizations are acquainted with the reputable contractors in the community, and are directly interested in the building of good homes. They will give you reliable information concerning any contractor.

Ask your prospective contractor to tell you about himself, his business history, how long he has been building homes, how many homes he has erected, the banks and mortgage companies with which he does business, and the larger suppliers from whom he buys his building materials.

If you are in doubt about the financial status of a contractor, you can secure (for \$2.00) a credit report from a

credit reporting agency. Honesty and "know how" are not enough. In the downward and upward swing of the construction cost cycle, there are times when a contractor must be able to take a loss in order to complete his contract obligations. If you want to be sure that you will get the home you contract to buy, at the price you agree to pay, make sure of the contractor's ability to deliver, in good times or bad.

Financial strength alone does not make a good contractor. The fully qualified builder must have a good production record and must enjoy a favorable relationship with sources of labor and building materials. Such good standing will enable a contractor to get men and materials at times when less favored contractors are unable to do so.

Of course, the "know how" in home building, achieved only by long years of experience, is a vital part of a good contractor's equipment. He must know how to read and correctly interpret plans and specifications, and to spot quickly errors and opportunities for improvement.

He must know good materials for specific parts of the job, and what substitutions can be made without sacrifice of good quality construction. He must know and be sure he gets adequate nailing at all points in the framing of the house structure, how good concrete is made, what constitutes good mortar, and literally hundreds of similar important points.

Before the contract has been taken care of, give some thought also to the following suggestions concerning the bid. The lowest bid is not always the best bid. If two or three or more qualified contractors figure a given job, and if none of them makes substantial errors in assembling estimated cost factors, there will not be any large variation in the bids received by the buyer.

Generally, a low bidder has a right to expect to receive the contract award. A wide dollar difference in the bids

submitted is usually a danger signal and may indicate that the low figure is the result of the contractor's having forgotten to include some large cost item or items. In these circumstances, the low bid may not be safe.

Here again, the financial responsibility and integrity of the builder are of outstanding importance. In a situation of this kind, the writer recommends that the low bidder be given an opportunity to review or recheck his bid. If he confirms his original bid, and is deemed to be financially strong, give him the contract.

The practice of contractors in the preparation and submission of bids varies widely. Some experienced contractors feel that their knowledge of cost factors justifies a quick "short-cut" cost estimate, and in such cases the contractor completely ignores the more frequently used practice of preparing a cost estimate in detail. Such a contractor will quickly figure the cubic foot or square foot content of the home, take a quick run through the specifications, and prepare his bid in an hour. For the contractor of long and wide experience, in times when costs are reasonably stable, this practice is fairly safe.

More often, however, and especially if competition for jobs is keen, the contractor will take pains to assemble a cost estimate in some detail, carefully studying the plans and specifications to make certain that all required items are included. A typical example of specifications is shown on page 151.

Is the Contract Price Fair?

The architect doubtless has given you at least an approximate cost of the proposed home. The lowest responsible bid is very likely not too much above or below the architect's roughly estimated cost. If doubt exists in the home buyer's mind respecting the fairness of the best bid received, he

may, for a fee of about \$25.00, secure the services of a competent, disinterested appraiser.

If you live in an area served by a district or state Federal Housing Administration office, you can get from this office, for a fee of \$10.00, an appraisal of the value of the proposed home. This service is offered whether or not you intend to finance under the FHA. Appraisal services are also available through real estate boards, local banks and federal savings and loan associations.

If you conclude that the bid price is fair, but beyond your comfortable ability to finance and maintain, the next step is to omit from the plans some of the items originally planned to be included and thus reduce the contract price.

Be Sure You Understand Each Other

Having agreed with the contractor on the price to be paid, you now meet with him and carefully review the plans and specifications, making sure you both thoroughly understand and agree on the interpretation of all plan and specification details. A plan for making partial payments to the contractor as the work progresses should be agreed upon at this time.

The contractor will satisfy himself that you have good title to the real estate involved, and that, whether or not a mortgage is contemplated, funds will be available when due. If you are going to make payments from your own funds, the usual payment plan to the contractor is 85 percent of the value of the work done and material used, to be paid on the 10th of each month.

If a mortgage has been arranged to finance the transaction, the contractor usually arranges to receive his first payment drafts from the mortgage company when the building is under roof and ready for plastering.

The contract should provide that the contractor will fur-

nish, at the time of each payment, waivers of lien from all suppliers of materials, and affidavits indicating that all bills for labor have been paid.

While every effort should be made to have all cost factors and all items included in the original contract, extras and changes are almost inevitable. After the job is started you will probably get new ideas and see new features that appeal to you.

The contractor always dislikes extras. They disturb his plans and routine to an extent seldom understood or appreciated by the buyer, and create the most frequent reason for misunderstandings. If the contractor adds a substantial percentage over the cost to him of any extras, you should try to see the contractor's point of view.

Perhaps a typical instance will help to illustrate what extras mean. Suppose, after the house is under way and all subcontracts are awarded, you decide you want to add a French door from the dining room to a future terrace.

Under given circumstances, the contractor may have to alter work already done—perhaps move windows, etc. Under the most favorable circumstances, the contractor must order a new door frame, door trim, combination screen and storm door, an extra door sill, weatherstripping, extra painting, glazing, etc. For each of these items the contractor must agree with his mill company, and all of the other trades and suppliers of material, as to the price to be paid to each for his part of the change.

The contractor must issue written orders for each of these small items and must make sure that each of the subcontractors involved follows up each item closely to avoid undue delay in the completion and delivery of the home.

The total extra charge, including the contractor's profit factor, is likely to be between \$65.00 and \$70.00 for this change. It should be obvious that, even if the entire amount

charged to you for the extra were all profit, the contractor would in reality make nothing, because of the expense of securing materials, entering orders, following up, book entries, and other details.

You and the contractor should agree as to what items are to be guaranteed by the contractor. Guarantees, usually for one year (sometimes two years), are normal practice as to such items as roof, heating plant, plumbing and concrete walks.

An approximate date of completion is usually a part of the contractor's agreement, but in most instances the given completion date is made subject to delays beyond the reasonable control of the contractor.

A fair, though seldom needed, provision in the contract provides for your cancelation of the contract if the contractor fails to live up to any of the contract requirements. This contract clause usually requires from ten to thirty days' notice from the buyer, and provides that, if the contract is so canceled, you may take other means to complete your home, and if the final cost is greater than the contract price, the buyer may recover such excess cost from the original contractor.

It is evident that such a clause would be of value only if the financial means of the contractor are insufficient. If the contractor is financially sound, cancelation of a contract is not likely to become necessary.

It is important to have the contract, plans and specifications all attached to each other, and all papers of all documents identified as parts of the contract document and all pages or sheets signed by all parties to the transaction.

Likewise, it is vital for the buyer to have evidence that the contractor and all of his subcontractors are fully covered by public liability and workmen's compensation insurance. An injury or death of an employee working on the project

could otherwise become a large item of cost that might ultimately have to be paid by the buyer. All good contractors, primarily for their own benefit, will give close attention to this matter. Insurance companies have short-form certificates indicating the policy number and beneficiary of such policies and will issue such certificates without charge.

A completion bond, guaranteeing that the work will be finished within a stated period, is sometimes required by the buyer. The cost of such bond is usually paid by the contractor. Few buyers, in normal times, require this bond.

Assuming full agreement on all of the details of the contract negotiations, the contractor prepares and submits the contract to you. If you are completely satisfied with the contract provisions, the contract is signed.

If in doubt concerning any of the contract provisions, the buyer should submit the contract to his attorney, iron out any obscure or objectionable clauses, and then sign the contract. Of course, both you and the contractor retain signed copies of all papers. The contractor is now ready to negotiate all of his subcontracts, employ men for the work to be done directly by his organization, purchase his materials, and go to work.

Most contractors award subcontracts for many parts of the work to be executed. Such subcontracts are usually for plumbing, heating, electrical work, millwork, etc. In some cases the contractor will have all work done, including excavating, concrete work, masonry, carpentry and painting, under subcontracts. Where the contractor does no part of the work with crews on his own pay roll, he usually accepts a lesser percentage of profit for his services.

The experienced contractor is usually careful to solicit bids only from subcontractors with a good record, and then gives the work to the low bidder. If a contractor uses the bid of one subcontractor to "chisel" on another's bid, or as

an argument to cause some favored subcontractor to cut his bid, he will soon find that good subcontractors will be unwilling to bid on work offered by him.

A contractor or subcontractor spends time and money to prepare his bid, and has a right to expect to get jobs on which he is the low bidder.

The contractor will carefully review the various steps to be taken in the building program in their relative sequence, and will take steps to insure the delivery of all materials at such times as required to avoid delays.

When the contract to build is signed and all subcontracts have been awarded, the contractor proceeds to check the lot survey, stake out the proposed building on the lot, establish the agreed grade of the finished first floor, and start the excavation for the home.

Inspections Decrease Risk

As the work progresses, the contractor will make frequent inspections, either personally or by a qualified superintendent. Correction of errors is costly. Proper preparation and instructions, made at the right time, will save time and money. The contractor will "lose face" with the buyer if frequent delays occur because of his own mistakes.

If the home being constructed is financed by an FHA insured mortgage, the contractor will conform to the three inspection regulations of this agency, as follows:

1. First inspection is ordered when the foundation is installed and before the excavated earth is "back-filled" around the foundation. This practice enables the inspector to check the foundation wall footings, the quality of concrete in the foundation, the adequacy of waterproofing applied to the exterior of the foundation wall, etc.

2. Second inspection is ordered by the contractor when the roof is on, and all piping (plumbing, electrical and heating) is installed, and before plastering is started. Obviously, proper inspection of work between the walls cannot be accomplished after the work is covered by plastering on the walls.
3. Third inspection (final) is ordered by the contractor when the job is completed.

At the time that each of the three indicated inspections is made, the FHA issues an inspection report, indicating "clean" findings, or calling attention to errors or omissions, correction of which is required before later clean inspection reports are forthcoming. The good contractor takes pride in securing a maximum number of clean reports requiring no re-inspection. A charge is made for re-inspection.

When the contractor has completed most of his work, he will make a careful recheck of the building, compare the work done with his plans and specifications, and proceed to give attention to any and all minor "loose end" items—such as cleaning windows, removing protective paper coverings from floors and plumbing fixtures, checking plumbing and roof for leaks, sweeping out the building, and cleaning up and removing debris from the premises.

Assuming your acceptance of the job in its entirety, or following the correction of any items required according to the contract, a closing statement is prepared and a final appointment is arranged.

At the time of the closing, the contractor will present to you a closing statement, evidence that all bills for materials and labor have been paid in full (final waivers of lien) and affidavits covering payment of all labor bills. You make the final payment to the contractor and get the keys to your "Home Sweet Home."



CHAPTER SEVEN

You Have Legal Rights: Protect Them!

by ALPHONSE CERZA

BECAUSE buying or building a house involves a large sum of money, and the home is to be used for many years, it is always best to have an attorney in order that your legal rights may be protected. It is cheaper to hire a lawyer to help you avoid trouble than to have him get you out of a tight situation. In engaging an attorney it is advisable to secure one who is familiar with real estate matters in the community where the property is located.

Since real estate law and procedure differ in various localities, the discussion that follows must, of necessity, be general in character. The main purpose is to open your eyes to the things that have caused trouble in the past so that you may guard against their occurrence in your case.

As soon as you have selected your homesite your first step is to arrange to buy it. This is done by entering into a contract with the seller. One of two types of contracts will be used: a contract to purchase, or a contract for a warranty deed.

A contract to purchase is used where one buys for cash (which is rare) or with a substantial down payment. A contract for a warranty deed is used when the purchase is made with a small down payment and the balance is paid in modest installments over a long period of time.

The advantage to the buyer of a contract to purchase is that he becomes the owner as soon as the deal is consummated by the receipt of a deed and signing of a mortgage. This is usually within a few weeks. The disadvantages to the buyer in getting an agreement for a warranty deed are many: He does not become the owner until the total purchase price is paid; in addition to usual restrictions his rights are curtailed by the terms of the contract; he usually has no right to possession unless expressly stated in the contract; his right to transfer or sell is governed by the agreement, and most contracts prohibit a transfer.

Contracts for Property Must Be in Order

In order to protect yourself you should read everything before you sign. And don't sign anything unless you understand what you read. Be sure to read the small print as well as the large print, as troublesome provisions are usually put in small type. Don't rely on oral statements, but insist that all important matters be stated in writing.

A contract to purchase should contain at least the following 23 provisions:

1. The name of the seller. If the seller is married, the name of the husband or wife should be included. If the spouse does not join in the contract and later refuses to sign the deed you cannot secure good title to the property.

2. The name of the buyer. If there is more than one buyer, all names should be set forth. If the buyer has a wife or husband who will take title when the deed is delivered, it is best that the name of the spouse be stated in the contract. In the event that the property is to go to the survivor if one of the buyers dies, this should be stated clearly.

3. A specific recital that one agrees to sell and the other agrees to buy on the terms stated.

4. The price.

5. The description of the property. This should be definite and specific so that there will be no question as to what you are buying. The street address, the side of the road, the legal description, adjoining streams, and similar items should be used. The size of the land is important. You cannot be too careful or too specific in the description.

6. That price will be free of liens and encumbrances.

7. Restrictions on the property, if any. Do not sign a contract that states you are taking title "subject to all restrictions of record" unless you are absolutely sure what these restrictions are. Restrictions are classified as follows:

- (a) Building lines. These relate to where you can build the structure with relation to the lot line.
- (b) Price. These relate to cost of the structure to be erected. Usually they state that no building below a specified price can be erected.
- (c) Racial. These relate to prohibition against sale to or

occupancy by a certain race or color. In some cases it provides that a violation will cause title to revert to original owner.

- (d) Structure. These relate to the type of building. In most cases the restriction lists type of material, size of building, number of stories, etc.
- (e) Use. These relate to type of use and occupancy. Most common is the prohibition against commercial use, or prohibition of sale of liquor on premises.

Restrictions should be examined carefully by asking yourself three questions: Will the restriction prevent me from using the property as I desire? Will the restriction prevent my neighbor (who has the same restriction) from interfering with my property, its value, or its full enjoyment? Will the restriction make sale of the property difficult?

8. Taxes and special assessments. The contract should state what special assessments and taxes are to be assumed by you. Do not agree to pay "all installments of special assessments levied, but not due" unless you ascertain how much is still unpaid. Too often a sidewalk or road has been built in front of the premises and you are paying a fancy price for the property under the belief that the improvement has been paid in full. Imagine your disappointment if the road was built and the cost was spread out over a period of years and you must pay a substantial portion of it because it was "levied but not due" at the time you signed the contract.

9. Mortgages of record. Are they included in the purchase price or deducted from the price? Be sure this question is answered clearly.

10. Evidence of title you are to receive. A buyer cannot afford to search the public records to ascertain whether the seller is the owner and what liens and encumbrances there

are against the property. The buyer therefore should demand delivery of evidence of title from the seller. If you buy without making this demand you will find that, when you come to sell, this demand will be made of you and prove expensive. If the seller gives you his evidence of title, when you sell the property you need only have the evidence of title brought down to date from the time you purchased the property. One of the following evidences of title should be supplied:

- (a) An abstract of title. This is a document that gives a summary of every transaction involving the property. It lists all the deeds, mortgages, releases, liens, etc., from earliest times to the last date of continuation.
- (b) Guarantee policy. This is a document issued by a title company in which it guarantees title in the seller as of a certain date. If any defect in title, liens or mortgages should be of record and not disclosed by the policy, the company must bear the cost of clearing the title. Care must be taken in reading the policy as not all matters are covered by the guarantee. Most common matters not covered by the guarantee are rights of parties in possession, water bills, zoning ordinances, building ordinances, liens not of record, assessments in process of building made but not completed, defects created after policy issues, defects created by party guaranteed, and fraud of the party being guaranteed.
- (c) Torrens certificate. This is common only in a few large communities. The land is registered through a court proceeding and the public officer who has the duty of administering the matter issues a certificate of title. Liens and mortgages are all listed on the

certificate. If none is listed, title is considered clear. This is the cheapest and is considered the best type of evidence of title.

- (d) Title certificate. In many small communities the practice has arisen of having a lawyer examine the public records and give a report on the title. The value of the certificate depends on the professional ability of the attorney and his financial ability to pay in the event of an error made by him.

11. When you are to receive evidence of title for inspection. As soon as the contract is signed, the seller is obliged to have his evidence of title brought down to date. The contract should state the time it is to be delivered to you for inspection so that you may ascertain if title is clear. Do not accept a provision that it shall be delivered to you within a "reasonable time" as even fair and honest minds will differ as to what is the meaning of such a general term. If the seller is to give you a Torrens certificate you need only examine the certificate and go to the office of the registrar of titles to close the deal.

12. Time seller has to clear title. There should be a provision that if there is a defect in the title the seller shall have a specified time in which to clear the defect. The contract should also provide that the buyer shall have the right to take title with the defect if he so elects. This will prevent the seller from using a frivolous excuse or minor objection to avoid going through with the contract if he has changed his mind.

The following matters make title to real estate not clear:

- (a) Judgment against the owner or prior owners.
- (b) Mortgage. (Disregard this if you are taking title subject to this item.)

- (c) Liens for labor or material.
- (d) Encroachments.
- (e) Possible claims against prior owner who is deceased. (Disregard this if person has been dead for a long period.)
- (f) Easements. This is a technical term meaning that someone has the right to do something on your land or use it for a certain purpose. It may be the right to build a fence, the right to string wires over the rear of the lot, the right to use a road, etc.
- (g) Certain types of restrictions.
- (h) Outstanding dower.
- (i) Homestead rights.
- (j) Unpaid real estate taxes.
- (k) Inheritance taxes due as result of the death of a prior owner.
- (l) Special assessments.
- (m) Franchise taxes if a corporation was ever the owner of the property.
- (n) Questions of survey.
- (o) Water tax rates that have not been paid.

The fact that a building code is being violated or that the zoning ordinance does not permit the type of building you are planning does not make the title bad. Therefore, you should check these two items before you sign a contract to buy.

13. Who is to hold deposit. It is usually best to have one of the attorneys for the parties, a bank, or the real estate broker hold the money. This is called "placing it in escrow."

14. Commission to be paid. If there is a real estate broker in the transaction it is best that it be specified what his commission is and who is to pay it. As a buyer you will be interested in not paying the commission, since it is custom-

arily paid by the seller. Furthermore, you should help the real estate broker secure his fee, otherwise he may place a lien on the property or, if he sues, you will waste time going to court as a witness.

15. What happens in the event of a default. Most contracts have a provision setting forth the rights of the parties in the event of a default on the part of either one. These provisions should be understood by you so that you may determine what risk you are taking by signing the agreement. Contrary to common belief, if you change your mind after signing the contract you do not "just lose the deposit." The seller can sue you and compel you to buy, or he can sell at a lower price and sue you for the amount he lost because you did not fulfill your part of the contract.

16. Deed. The contract should state that you are to receive a warranty deed. Do not accept just a quitclaim deed. A warranty deed carries a guarantee with it that the seller is the owner and title is clear except as indicated in the deed. A quitclaim deed merely conveys whatever title he may have, if any.

17. A provision that "time is of the essence of this contract." In most real estate transactions the time element is of vital importance. If you do not have this express provision you may find yourself in a position where delay after delay is encountered and you have little recourse.

18. Place where deal is to be closed.

19. Notices. There should be a provision that notices shall be served on the seller at a specified address and on the buyer at a specified address.

20. Date the contract is signed.

21. Signatures of the parties and their spouses.

22. Witnesses to signatures and acknowledgment. It is always best to have witnesses sign the contract. In some states this is necessary to the validity of the contract. In

some states the contract must be signed and acknowledged before a notary public.

23. Miscellaneous provisions. If there are persons in possession, their interest or rights should be explained; it is best to state at least the type of tenancy and what rental is paid. If you are planning on getting a loan to buy the property be sure to insert a provision in the contract that if you are unable to secure a loan the contract will be canceled and your deposit refunded. If you alone are signing at the time insert a provision that if the other party does not sign within a specified time the contract is void; this situation may arise when one spouse is out of town and a real estate agent is attempting to bring about a sale. Page 142 in the appendix will illustrate most of the things just discussed.

Certain Contract Provisions Are Objectionable

The seven following provisions (from the standpoint of the buyer) are objectionable in a contract to purchase real estate:

1. That the seller can obtain judgment against the buyer without notice in the event that he fails to live up to any of the terms of the contract.

2. General statements that may give rise to controversy. For example, that a certain thing will be done "within a reasonable time"; that the seller will install water mains "when conditions permit"; or that possession will be given "when the house is completed" (it may be completed but not ready for occupancy).

3. The restriction that the buyer cannot build without first submitting plans and getting permission from the seller should not be accepted; this would interfere with your use of the premises or prevent sale in the future.

4. Restrictions contained in prior deed or in plats, unless

these deeds or plats are attached to the contract or you are satisfied with their terms.

5. Subject to rules of specified association. Ascertain what the rules provide; they may not meet your approval.

6. That evidence of title is to be delivered at a date later than the time of paying the balance due.

7. That title will be accepted subject to certain easements that will interfere with your use of the property, be a source of trouble or irritation, or reduce the use of the property by you.

Warranty Deeds Are Frequently Used

An agreement for a warranty deed is a type of contract generally very unfair to the buyer and containing many unsatisfactory provisions. The seller always has the excuse that the down payment is too small and "I have to protect myself against being cheated." But he forgets that in his zeal to protect himself he isn't considering that, as payments are made, the balance gets smaller and smaller and the buyer still is subjected to unfair provisions. In addition to most of the things previously listed in a contract to purchase, the agreement for a warranty deed should contain the three following provisions:

1. When you will get a deed. This type of contract usually contains the provision that the deed will be delivered when the total purchase price is paid. This is unfair to the buyer because had he made a down payment of one third of the purchase price he would have received a deed within a few weeks after signing the contract. If the seller refuses to give you a deed when you have paid half the purchase price, and have signed a mortgage for the balance, do not enter into the agreement with him.

2. Right of possession. The contract should contain a

provision that upon the signing of the agreement you shall have the right of possession. If there are any special reasons why you should not secure possession upon signing the agreement, there should be a provision as to when you do get possession; this may be either a specified time or when a specified amount of money has been paid on the principal. If you have no right of possession until the total purchase price is paid, do not sign the agreement, because it is unfair to you as a buyer. If the total purchase price of the land, however, is only, say, \$100 you can, of course, agree to secure possession when the full purchase price is paid.

3. When you shall be given evidence of title. Do not agree that the seller need not show you evidence of title brought down to date until you have paid the total purchase price. You should not be compelled to pay the full price and then find that the seller has no title, or that there are liens in excess of the price paid, and therefore the seller cannot or will not clear up the matter. He should show you evidence of title at the outset or when you have paid about half the purchase price; there should be a provision that if he does not have clear title all further payments are to be held by you until title is shown to be clear.

Some Warranty Deeds Have Undesirable Provisions

An agreement for a warranty deed should not contain the things that were mentioned previously as objectionable in a contract for the purchase of real estate. In addition, the three following provisions that are usually found only in an agreement for a warranty deed should be stricken out:

1. Provision against recording. Many contracts for a warranty deed state that the buyer will not record the contract. By not recording the contract, if the land is vacant the seller is at liberty to enter into similar agreements with

numerous persons for the purchase of the same land. If he is a dishonest person he might collect from all and then leave for parts unknown before the fraud is discovered. Under those circumstances many will have paid the price and none will own the land. Beware of this provision.

2. That buyer has no interest in the property. Some contracts for a warranty deed contain a specific provision that by making the payments to the seller the buyer does not thereby acquire an interest in the property. This is unfair because the buyer at least acquires an interest to the extent of the payments made.

3. That seller is not the owner. Occasionally one signs a contract to sell property that is not his. This is legal because I can agree to sell you property which I am about to purchase; the law contemplates that upon my consummating my purchase I will then sell to you. But the real reason for this device usually is not an honest one. Usually title is placed in a trust company and the seller merely agrees that he will see that the trust company will give you a deed when you have paid the purchase price. After you have paid the full purchase price you cannot by court action compel the company to convey the property to you; all you can do is sue the signer for damages.

The form shown on page 143 of the appendix illustrates a type of agreement containing most of the things so far discussed. Of course, in actual practice, no deed is perfect.

Contract With Architect Is Desirable

Architects do not always enter into written contracts with their clients, but it is best that this be done. Sometimes the agreement consists only of a letter written by the architect and signed by the prospective homeowner. When this is done the letter constitutes the written contract.

Regardless of the form used, the nine following points, at least, should be covered by the agreement, whether oral or written:

1. The extent of the work to be done by the architect. An architect can be engaged generally to perform the following: supply stock plans, make minor changes in stock plans, make complete new plans, supervise the work completely or to a limited extent, or do everything from drawing the plans to ordering the labor and materials and supervising the completion of the work.

2. The date of the agreement.

3. The fee to be paid, and how it is payable. The fee may be a specified sum or a percentage of the price of the house.

4. Who is to keep the plans when the house is completed. The plans belong to the architect when the house is completed unless there is an agreement to the contrary.

5. That he is to act as arbitrator. It is customary to have the architect act as arbitrator if a dispute arises between the contractor and the owner.

6. The extent of his authority. When the architect acts as general supervisor of the construction of the building it is best that it be specified how far his authority extends in making changes, in providing for extras, or in ordering labor and materials.

7. The cost of the house.

8. The location where it is to be built.

9. General description of the house.

If you want to enter into formal and detailed contracts, the American Institute of Architects has standard forms for the purpose, samples of which are given on pages 144 to 150. The institute is located in Washington, D.C., and its forms are available at a small cost.

The Contractor Must Meet His Obligations

In considering the terms of the contract with the contractor here are some of the matters that should be weighed in your mind and covered in the agreement:

Who is to pay for bracing the building?

Who pays for changes made?

Who pays for the survey?

Are you to pay for overtime work?

Who is to pay for erection of fences?

If construction takes place during cold weather who pays for heating the material?

What type of insurance is to be secured during the construction of the building and who is to pay for it?

Is contractor required to keep building and cellar free from water?

What trees and shrubs are to be protected?

Is contractor to hire a watchman at his expense?

Are landscaping and decorating included in the contract?

Is the contractor to clear debris after work is completed?

Must you pay for work that has to be done over?

Are extras or changes to be ordered in writing?

If the contractor is to build a house for you that is similar to one that is already built, a simple contract can be made. In this type of agreement it is important that the house be identified and described in detail.

In some states construction contracts are required to be recorded. If you live in a state where this law exists, it is necessary that you see that the contract is recorded after it is signed by all parties.

Prior to starting work it is best that either you or the contractor arrange for a survey. This is a cheap investment

because if the house is built over the lot line, or on the wrong lot, it will be an expensive experience.

In addition to the above matters, in many communities it is customary to have the contractor sign a construction bond together with a surety company. This practice is much to be desired since it protects the owner from loss in case of financial default of the contractor.

If you enter into what is known as a "cost-plus" contract be sure to state that the following items are not to be included in the cost: phone costs, office expense, carfare of employees and contractor, office supplies, insurance, and cost of poor work done over. A cost-plus contract is one where you agree to pay the contractor a certain commission for his work, based on a percentage of the cost of the entire job.

The term "closing a real estate deal" does not necessarily mean it is the last act performed in becoming a homeowner. It is merely that point of the transaction when a deed is delivered to you and you take title to the property. This may be when you have made your last payment, or when you have paid sufficiently on your agreement for a warranty deed and receive the deed.

The first thing to consider at this point is: How shall I take title? If you are a bachelor, the problem is simple, as you will take title in your name. If you are married you may take title in your name, your wife's name, or in both names. If you take title in both names it is best to take it in joint tenancy; this means that title goes to the survivor automatically. If title is in both names and is not in joint tenancy legal proceedings may be necessary to clear the title when one of the owners dies.

What Documents Should You Get?

At the time of the closing you must read your contract for the purpose of ascertaining what you are to receive.

Generally, you will be entitled to receive the following documents:

1. The deed properly executed. This means that it will be in the form prescribed in your state; it is signed by all owners and their spouses, witnessed, signed by a notary public, and has sufficient revenue stamps thereon.

2. Evidence of title. This will be specified in the contract.

3. An affidavit of the seller. This affidavit will state the following: that the seller is the owner, his marital status, that he has caused no liens to be placed on the property since signing the contract; that he has not sold the property to any other person, that he has not signed a contract to sell to any other person, that the persons in possession are tenants and have no other interest in the property, that all insurance premiums have been paid, and that all water bills and special assessments have been paid.

4. Letters to tenants. If there are tenants in possession, letters should be secured from the former owner introducing you to the tenants and advising them to pay all future rents to you.

5. Assignment of leases and insurance policies. If there are leases and insurance policies covering the property these should be assigned to you.

6. Receipt for money being paid by you.

7. Plat or survey, if seller has one.

8. All paid notes on existing mortgage. These must be preserved until mortgage is paid. A release is difficult to secure unless all paid notes are produced.

9. Last paid tax bill and water bill.

10. Statement of mortgage holder (if any) as to balance due. At the time of closing it is customary to prorate all items because some are paid in advance and others at the end of a certain period. Here is a sample prorating statement:

Closing Statement

Between A. B. and C. D. July 1, 1946
 Property at: 1015 Main Street, Chicago, Illinois.

	<i>Due Buyer</i>	<i>Due Seller</i>
Purchase price		\$10,000.00
Unearned insurance		100.00
Coal in basement		200.00
Deposit paid under contract . . .	\$ 500.00	
1945 taxes unpaid	100.00	
1946 taxes, prorated	50.00	
Rents collected	50.00	
Water bill (May 1 to June 30) . . .	5.00	
Mortgage	5,000.00	
Balance due seller; paid this date	4,595.00	
	\$10,300.00	\$10,300.00

The items in the left-hand column represent the obligations to be met by the seller (but not yet due) or credits due the buyer (items already paid by buyer); the items in the right-hand column are those which the seller is entitled to receive from the buyer (such as the purchase price) or credits due him for payments made in advance on certain items.

You Must Take Seven Steps

After the above documents have been delivered to you as the buyer, it is necessary that you carry out the seven following procedures before you can really feel that the deal is closed:

1. Record the deed.
2. Send insurance policies to companies for their consent

to the assignments to you; until these consents are secured the companies are under no obligation to you as the owner.

3. Have evidence of title brought down to date so that it will show clear title in your name. If you have received a Torrens certificate this follows as a matter of course because the deal will have been closed at the Torrens office and a new certificate issued. If you receive an abstract, you will deliver it to the abstract maker with instructions that he bring it up to date. If you have received an opinion of title, or guarantee policy, direct the company to issue a new one showing title in your name. Each of these three alternatives will mean that you must spend some money; that is your obligation and not that of the seller.

4. Report change of ownership to mortgage company, if there is a mortgage.

5. Report change of ownership to any supervising government agencies, if applicable.

6. Deliver letters to tenants, if there are tenants in possession.

7. Notify the electric company, gas company, water department, tax collector, agent, janitor, scavenger, etc., of change of ownership.

When you have received the evidence of title, the insurance policies, and the deed, have examined them and found them in order, the deal may be considered closed.



CHAPTER EIGHT

Materials Make the Home

by HARRY HARMAN

FOR one reason or another it seldom is possible to build our homes of precisely the materials we would like. Our forefathers were familiar with the elaborate structures of Europe in their day, yet lack of skill, labor, and particularly finished materials forced them to build simple log cabins, sod houses, or structures of rammed earth.

If, for some reason, you cannot afford or cannot obtain exactly what you want and need in the way of building

material, you can probably get along with something else. Nevertheless, the more you know about all types of materials, the better chance you have of building the kind of structure you want.

In building a home that you expect to occupy for some years, and which represents quite an investment, beware of any false standards. Don't try to make a modest home look like a pretentious mansion. Some people attempt to pattern their homes after elaborate structures that have caught their fancy. For this reason, materials are often misused and the home lacks convenience and comfort. The material which logically functions and is most serviceable for any given purpose will establish its own high standard, regardless of how new and lacking in tradition it may be.

The Foundation Must Be Adequate

There are so many phases of this subject that it is difficult to determine a starting point. Perhaps it is wisest to follow the builder's procedure and start with the foundation. A poured concrete basement foundation wall with a thorough coating of gummy asphalt waterproofing sprayed on under pressure on the wall's outer surface is considered the best type.

An alternative method is to build a wall of cement block. Even though a 12-inch block is strong enough to support its share of a two-story residence, let's not forget that we seldom build on a stratum of bedrock and that the most firm clay subsoil is subject to pressures and soil conditions that can move the structure. A slight movement of this sort can easily open up the mortar joints between the blocks in this type of wall.

This is not necessarily too serious structurally, but I would not advise the use of such a wall for a basement unless the site is on high, well-drained ground.

You Have a Wide Choice for Outside Treatment

The variety of construction and materials really starts above the foundation. Many widely differing combinations of materials are possible and most of them have been tried. However, the great majority of builders have found that the so-called conventional materials are still the most desirable, even though at times they may be clothed in new trade names or terms.

A solid brick wall is, of course, fireproof, and requires practically no maintenance, but it is not too good an insulator of heat. The physical structure of the conventional type of brick is too dense to be of much value in this way. There are other blocks known by various trade names which are much more porous and therefore trap heat.

These blocks are made from cellular aggregates of slag mixtures and under a microscope appear to be a mass of extremely small air cells enclosed by a thin wall of slag. However, this same porosity admits moisture, and the surface must be covered with a good coating of cement to keep out the rain.

Even then there is the danger of joints opening up, caused by the slightest amount of settling. Once this happens it is very difficult to patch it permanently so rain can't drive through.

A brick or stone veneer wall with its one-inch air space backed by building paper and sheathing and then its second air space of $3\frac{1}{2}$ inches between the wood studs will cut down your heating costs considerably because dead air space is the most effective insulator against heat. We can go even further with this type of wall and install two inches of insulation between the studs, still leaving an air space.

In selecting the type of brick or stone to use, don't forget that the materials dealer has space to stock only those items

which sell most rapidly, and by far the greater number of varieties of brick and stone are not usually seen. We never buy the first hat or coat that is shown to us, so let's be sure to investigate the different types of brick, stone or whatever material we're looking for.

Many of our large cities have materials exhibits where we can see all types of stone and brickwork, sometimes in full-size samples.

You may be dreaming of a completely informal country home of stone. If so, you certainly would not care to buy the smoothly polished white limestone that graces the First National Bank downtown. Nor would it be desirable to use a stone which is "almost right," when the deep, rich colors and rugged texture of sandstone from the Wisconsin River are available. Similarly, when we speak of brick we normally think of some shade of red or tan. However, brick is manufactured in other colors which are often preferable. There is a dark gun-metal colored brick which is almost black and is extremely effective.

Wood, which is still comparatively economical and practical, comprises 35 to 45 percent of the conventional houses. It can be shaped and cut to fit almost any condition or character required in residential work and, if properly treated, can be as permanent as is practical to demand. There are various methods of treating wood which effectively protect it against decay, termites, acid and fire.

There is quite an assortment of differently shaped siding, both for horizontal and vertical application. The structural differences are not sufficient to warrant any selection based on that reason, but there is a large range in the character and texture one can achieve through this selection.

Different kinds of softwood vary considerably in characteristics and the utmost care should be used in selecting them for a certain purpose. White pine, cedar, cypress and red-

wood are the woods most available commercially and most desirable for exterior work. These woods are by their very nature dry, soft enough to cut and shape, and take paint most successfully. Moreover, they are not as subject to shrinkage and swelling as are some other types of wood.

On the other hand, Douglas fir and southern yellow pine are excellent for use as structural members, where stiffness, hardness and strength are the prime factors.

By slicing wood into very thin layers and gluing them together so the grain in one layer runs perpendicular to the grain of its adjacent layer, thereby reinforcing it, an exceptionally strong and attractive product has resulted, because cross-grain weakness has been eliminated. A synthetic resin binder has been used to make this plywood waterproof, and we find it being used for the exterior finish of boats, airplanes and houses. Other processes have made it vermin and fire-resistant.

In fact, the properties of plywood may be predetermined with engineering precision, and grades and thicknesses of plywood suitable for almost every purpose are now being manufactured.

The beauty of hundreds of different woods is now available for interior effects. Rare and exotic woods from the Orient, the South Pacific and Africa are used as the veneer face, at a relatively low cost. Wood may be bent to form a curved surface of surprisingly short radius.

Frame construction has the same desirable air space between the studs as is present in the brick veneer wall. Furthermore, wood itself is an excellent natural insulating material because of its cellular structure. In fact, many insulating products are made from wood fiber.

However, even though we are accustomed to thinking of houses in terms of brick or stone or wood, it would be most shortsighted to close our minds to the possibility of other

types of wall facings. There are some materials, often used in commercial or industrial work, which we should take advantage of in the design of homes. Two of these which are particularly adaptable are corrugated asbestos and corrugated metal.

As machinelike as these may seem at first, they are logically manufactured for exterior walls and roofs and can be most successful in the hands of a progressive architect. Their texture and character contrast effectively with conventional materials, and these two products are extremely simple to install so that the corrugations run either horizontally or vertically. Various panels of masonry and synthetic compositions may be used with equal success if you are willing to investigate their possibilities.

Suitable Roofs Can Be of Varied Types

After the walls are completed, it is good practice to install the roof so the interior can be protected from rain and snow. In selecting a roofing material we must first consider the slope of the roof. If it rises less than $3\frac{1}{2}$ inches to every 12 inches of length, it is too flat for any kind of shingle to be effective, because a driving rain could blow under them if each shingle isn't cemented thoroughly. Some form of what is termed a "built-up" roof, or possibly a sheet metal roof, should then be used.

The term, built-up roof, usually applies to overlapping tarred felt paper, alternating with moppings of pitch or asphalt, and finishing up with a good protective surface on top.

This top protective layer may be slag, gravel or crushed stone. Incidentally, a clean, white crushed stone surface will reflect the heat rays from a hot summer sun, and is an economical and very serviceable roof. If the roof is flat and is to be used as a deck for sun-bathing or sitting in the cool

of the evening, a good way to keep chair legs from going through the roofing is to apply some composition tile or panel laid in one-inch cement mortar. Where wood framing supports the roof a specially prepared roof canvas is frequently used. It is laid on an adhesive paste of white lead and linseed oil, thereby becoming a waterproof surface. At small areas such as over window bays, entrance shelters, etc., metal roofs are usually simpler to use and more attractive. As for roofs with a greater slope, any of the shingles or tiles may be used. Of these, slate and tile are the most expensive. Asphalt shingle strips are probably used more frequently, as they are the most economical to manufacture and install, are serviceable and fire-resistant. These shingles are made of felt fabric which is saturated and coated with an asphalt sealer in which a protective shield of colored mineral chips is firmly embedded. The shingles are manufactured in different weights and are priced accordingly.

This is one place where it is not advisable to save money by using the lightweight grade, for the extra-heavy-duty shingle with its second coating of asphalt and minerals wears much longer.

Insulation Is an Important Asset

Asbestos shingles, which are heavier than the asphalt, are stiff and somewhat resemble slate shingles, which so many people seek. Made of asbestos fibers and portland cement, they are fireproof and last almost indefinitely.

After the house is roofed, and before it is finished inside, the insulation is installed. This is a fairly recent and highly popular addition to residential construction, and the competition among manufacturers is keen. There are many types and brands and all are strongly advertised. The "fill" type which is blown in under pressure is excellent for flat ceilings because it forms an extremely porous volume of

material, but when it is blown into vertical surfaces it will eventually pack down and lose its effectiveness. I can think of one exception to this, the pellet or granulated type. These small pellets have been formed so they contain tiny dead air cells within definite granules which retain their individual shapes and don't pack too tightly. With this exception, however, it is advisable to use the "batt," or blanket, form of insulation in the walls. The usual procedure is to install two-inch rock wool batts in the walls, leaving a dead air space, and four to six inches of fill in the ceilings because there is much more heat loss through the ceiling. The extra cost for four-inch rock wool in the walls doesn't seem warranted because it is little better than the two-inch batts.

Another type of insulation is aluminum foil, which reflects heat rays. Theoretically, this would be particularly effective in keeping out heat in the summer, as the sun's heat is entirely radiant. However, should the foil decompose and lose its reflective surface to any extent it would lose its effectiveness. To my knowledge, the durability of this foil has not been accurately established as yet.

Another method which has proved successful in reflecting the sun's heat is that of covering a flat roof with a half inch of water. This idea, of course, is most effective in the southern part of our country where the summers are hotter and longer.

Then there is the process which consists of forcibly projecting, through an air gun, dry fibrous materials simultaneously with an atomized adhesive. This builds up a cellular spongelike blanket on the surface being treated, and is particularly effective in sealing around openings. When sprayed on the inner surface of a masonry wall it can be used as a plaster base and thereby eliminate lathing. There are nine different mixture combinations, adjusted for their fireproofing qualities.

Interior Walls Must Fit Your Needs

After the insulation is installed and the "pipe" trades, such as the heating, plumbing and electrical contractors, have finished that portion of their work which is installed in the walls, the question is: How to construct the finished interior walls?

Plastering is still the most common method of interior finishing, but no one can safely guarantee against plaster cracks, although the industry has perfected various methods and has come close.

The usual method of plastering consists of three coats of wet plaster applied to wood, gypsum or metal lathing members, which are nailed to the wood stud or masonry partition framing. This type of construction must naturally absorb any movement or settling which may take place in the structure, and can result in cracks. To further minimize this possibility a method is employed which attempts to hold the plaster itself as free as possible from the structure and is accomplished by fastening metal clips at intervals to the structural wall. Thin wallboard sheets fit snugly into these clips and the plaster is then applied, eliminating 90 percent of the original contact of plaster with wall. This free space provides the additional benefit of better insulation from noise.

Metal lath is another well-known base for plaster. This does not resemble the thin wood strips but is a metal mesh which comes in rolls or sheets and can be easily formed or turned to provide a stiff backing for the many curves and interesting shapes which we find in contemporary design. Another advantage to metal lath is the ease with which it can be cut or slit to provide for openings for pipes and ducts. Lath of this type is an ideal base for a "hung" or "furred" ceiling, which is a ceiling that must be lower than the under-

side of the floor or roof above. "Struts" or "hangers" are fastened to the framing members above and extend down the desired distance. Metal lath, stiffened with extra metal members, is easily wired to these hangers and the plaster applied, thereby providing ceilings at any desired height.

There are many wallboards on the market with equally as many characteristics. One of these is made of a sheet of plaster covered on both sides with heavy cardboard. The edges are slightly recessed so that when the joints are cemented the resultant surface is even throughout. If carefully applied these joints can be completely camouflaged so they aren't noticeable under a coat of paint.

There are other boards made of various compositions which are of varying degrees of hardness and resistance to water and fire. These have developed rapidly in the last ten years, accentuated by the speedy construction required during the war. They all eliminate the drying time necessary for plaster. They are manufactured in large sheets and are easy to install. Fewer trades are involved because usually the carpenter installs them. Certain of these products are waterproof, while others are soundproof.

Their main drawback is the question of what to do with the joints and nailheads where two panels abut each other. Most of the manufacturers have developed methods of applying small plastic moldings to cover them. Another procedure is to cut a small groove to dress up these joints. A few of these boards are applied to a backing by means of a waterproof mastic, so they may be used around bathtubs.

There does not seem to be any one product that has a monopoly on certain qualities, so the selection of a board to meet any particular situation becomes a matter of choice among at least two or three equally good products. Several of these simulate tile or other patterns and textures.

We mentioned plywood earlier as an exterior finish ma-

terial. It also has excellent decorative possibilities for interior work. It may be bent to a 15-inch radius, and the grain of whatever veneer facing is used may be decorated in several different ways. This grain greatly minimizes awareness of the joints. In fact, if a very small V-groove is cut at the joint it is hardly noticeable in the graining and gives a subtle decorative pattern. Incidentally, the plywood manufacturers make a paper-thin veneer sheeting of many well-known or rare woods which may be applied on any smooth surface in the same manner as wallpaper.

All these boards can be easily treated to receive either wallpaper or paint. Bear in mind, however, that plywood interiors require a rather uniform humidity, which is most easily obtained with forced air heat.

On the subject of wallboards, no discussion of materials is complete without the mention of plastics. Some products we've been using for years are either partially or completely plastic. Meanwhile entirely new plastics are being developed at the rate of at least one per year, so we can definitely look forward to some interesting results. Plastic wall panels will continue to be expensive, however, until methods of processing and production are improved.

Glass Products Will Aid You

A material literally as old as the hills which has not really been given a chance to prove itself in the home is glass.

An extremely versatile material is translucent glass which admits light but which cannot be seen through to any degree. It is available in many interesting textures. One company has 18 smartly decorative patterns of translucent glass with which almost any effect can be achieved, all designed to serve as screens admitting light and at the same time maintaining privacy. Inasmuch as they average 87 percent light transmission, there are many places in the home, where

inner areas wish to borrow light and add a sense of spaciousness and distinction, that are logically suited to receive these decorative types of glass. Examples are the bathtub niche, the entrance vestibule, an inside stair hall, between sleeping quarters, and an interior dressing space.

Another highly useful glass product is the well-known glass block. Perhaps because so many night clubs and factories have taken advantage of glass block we hesitate to use it in our homes, but if used properly it can be most desirable. These blocks, with dead air space contained within them, are excellent insulators of sound and heat and at the same time admit the passage of 85 percent of the light through their various decorative surfaces.

Another valuable contribution of the glass industry is opaque structural glass. This glass, manufactured in a variety of colors, is exceedingly strong and hard-surfaced and is extensively used on the exteriors of commercial structures. As its smooth surface is very easy to clean with a damp cloth it is an ideal decorative, waterproof wall finish for bathtub and shower niches.

Sound Control Is Important

A problem which should be given more attention than it has received in the past is that of acoustics. Usually, when it's time for Junior's nap the rest of the family is forced to slink around on tiptoe. Or perhaps father finds it difficult to read about the ball game while mother is carrying on a long telephone conversation. Proper installation of good acoustical materials will eliminate such annoyances.

Most acoustical materials are porous, and the sound waves entering the pores become lost. For this reason several of the products are manufactured with holes punched in, but not through, them. Conversely, solid structural materials transmit noise.

There are many competitive acoustical materials to choose from and in selecting them it is important to compare costs and methods of installation. Other ways in which they differ are their moisture resistance, thermal insulation value and permanence. Acoustical plasters are used extensively, but they are limited in their effectiveness and require highly skilled application.

A new development which appears to have interesting and effective possibilities as an acoustical material is the fireproof and moistureproof plastic called Fiberglas. A blanket of this material is used at the ceiling, with a cloth of the same material stretched taut to form the finished surface. In any event, certain portions of the house warrant acoustical treatment.

What to do with the floor? Some people like the beauty and the feel of walking on a hardwood floor, while others want one which will not require any maintenance. For those who don't wish to "keep after" the floor after they move in, asphalt tile or linoleum is the answer. Both are applicable if the subfloor construction is concrete. If you want a hardwood finish floor even though you do use a concrete slab as the supporting floor structure, the simplest solution is to use a prefinished wood flooring which can be glued down. These prefinished floors have an excellent wearing surface.

One of the principal headaches in designing a home is the question of windows. Years ago our great-grandfathers could make only small sheets of glass, yet today, when glass is made in large sheets up to 12 by 18 feet, we still use tiny panes of glass 9 by 11 inches. This necessitates painting all the woodwork around them and having that many more corners to clean. Windows can make the difference between enjoying or not enjoying your home. In their traditional responsibility of supplying natural light, ventilation and view, the functions of windows necessarily face a

variety of "musts." We want natural light without the rain, we must keep out the subzero air in winter and mosquitoes in summer.

New Types of Windows Have Many Advantages

In many ways the old vertically sliding window has its merits, even though it does give only 50 percent ventilation. However, there are other developments which have distinct advantages over this type of window.

We're all familiar with the so-called casement type which is hinged on its side and opens like a small door. This gives 100 percent ventilation and is a good window when it is hinged to swing outward so it will not interfere with the furniture or drapery inside. Then there is what we might call the "awning" type of window, with one to four sections, one above the other, all hinged at the top to swing outward. This not only permits 100 percent ventilation but also protects everything inside from the rain. And there are combinations of this with the casement window. In some types a portion of the window is hinged at the bottom to swing inward, thereby acting as a "no-draft" ventilator.

The so-called "projected" window has a top-hinged section above, which swings outward to keep the rain out, and a bottom-hinged section below which swings in and acts as a ventilator. To me this is a very sensible solution. Another idea I'm interested in is the horizontally sliding window made weathertight by clever weatherstripping.

However, it really isn't necessary that the window carry all the burdens it was born with. If you're moving out to the suburbs or the country to enjoy the trees and fields, why not open up the wall with a large, wide picture window and provide ventilation with adjustable louvers below or to the side of it? This is all part of the thinking we must do in deciding what type of window to use and where to use it.

The question of metal window frames vs. wood will always be with us. Wood is an excellent material but, unless it's treated, humid weather will cause it to swell. Metal doesn't warp or shrink but it also isn't as good an insulator, it encourages condensation and often looks incongruous with the character of the building.

Minimize Fire Dangers

I haven't talked much about completely fireproof concrete construction because it is definitely more expensive and it immediately loses interest with 99 percent of the home builders—unless the home is to be built out in the country, some distance from fire protection. For such work there are precast concrete joints and interlocking floor and roof panels, or slabs, which have proved successful.

As this is a comparatively new field of endeavor, new patented products are appearing rather rapidly and I would suggest that, if you're interested in this type of construction, you investigate it thoroughly with the guidance of a progressive architect.

A discussion of this sort can point out only a few of the highlights concerning the selection of materials. I believe, however, it is evident from this discussion that there are many materials to work with which quite often would escape our attention. I only hope I've made one thing clear: When you build, it is important to appraise all the materials available, whether new or old, with the guidance of someone who knows and who is open-minded and progressive.

You may live in that house a long time and it costs no more to build the house of materials manufactured for a specific purpose and installed in such a manner that you will enjoy your home to the fullest extent.



CHAPTER NINE

New Things for New Homes

by GEORGE FRED KECK

CHANGE is inevitable. Perhaps, after all, the modern automobile is nothing but a glorified wagon. But it does not look or feel anything like a wagon any more, nor do we want it to.

We agree that the modern car is a fine looking mechanism in its own right. Fortunately, we are at least beginning to think of our houses in the same manner. Why should we

insist that they must look and be the same inside and out as they were a hundred years ago?

Perhaps the most outstanding contribution to the American home has been the mechanical equipment it contains. Here American inventive genius has achieved a fine record.

But until we are willing to change our preconceived notions about how a house should look, either inside or out, we cannot make the best use of most improvements.

For example, when we think of building houses today, one of the first considerations is making a house fit the climate in which we live. For the United States this means that we live in the north temperate zone with the sun always to the south of us at various angles during the year.

In the greater part of this country the frigid winter winds come from the north, northwest and northeast, and we must protect our living rooms against these cold blasts. The summer breezes are from the southwest in many cases. Also, our summers can be very hot and our winters very cold. In summer we have too much solar heat, and we should devise a house that will not permit the sun to enter the house; in winter we want all the sun we can get.

You May Want a "Solar Home"

This is possible with the proper exterior design and floor plan. When we take these facts into consideration, we have what is popularly known as a "solar" house. We are taking full advantage of natural phenomena, and are using such natural elements to fit our comfort and convenience. On the north side it is wise to place the secondary rooms, such as utility rooms, garage, corridors, etc., with the important rooms to the south as much as possible.

Variations of this scheme are manifold, and such variations can be made to fit any requirement. Such an arrangement will be beneficial in many ways by including the sun

as an auxiliary to the heating system for the house. If there are trees on your property it will be wise to place the house so that some shade is received, for a house in the sun gets hot just as a person does.

A house planned with such considerations is suitable in many parts of the United States without much of the mechanical equipment often thought necessary, for we are enlisting the help of nature.

There is the story of the early pioneer in Nebraska who used many of the above ideas for his first house, utilizing glass he found floating in sash down the Missouri River. It was possible for him to have a year-round vegetable garden behind the glass in a part of the house. Only a fireplace was needed for the coldest weather and for cold nights.

Many of our early pioneers used such common sense because they had to. Today, when we have such a wide choice available for all the items that go to make up a house, we often choose badly, and once such a mistake is made it is almost impossible to rectify it.

Choose a Modern Heating System

Of all the mechanical improvements available, heating of the house is perhaps as important for comfort as any other single item. I will discuss later the various types of heating available today. Now I would rather discuss a somewhat newer type of heat about which you may not have heard very much. This type is known as "radiant" or "panel" heat. In general, there are two main ways of transferring heat, by radiation and by convection, and mostly they operate together.

Most heating systems you now are familiar with are of the convection type, about 70 percent convection and 30 percent radiation, and this category includes steam and hot water radiators and direct air heat.

The percentages are reversed with radiant heat. Radiant heat is the type of heat received in a ray of the sun; convection is the heating of air, which in turn heats the interior of the house and you. In a radiant heating installation, all or some of the larger interior surfaces have controlled temperatures and are heated or not heated as desired or required.

Such large surfaces are, for example, the floor area, the ceiling area, or the walls, alone or in combination.

A small radiator in a corner of a room must be made very hot to supply heat to a room, but when the entire floor area is used, or ceiling, or both, the temperature can be brought down, the distribution of heat is better and much more uniform, and therefore the heating of the room is better and more comfortable.

In most of the United States, the floor area in a well insulated house is often enough to heat the room, and the floor area need never be more than 90 degrees Fahrenheit in the coldest of weather, a temperature lower than surface skin temperature. If floor and ceiling surfaces are used, the temperature of these surfaces can be less, and there will be a resulting fuel saving, for, as the number of surfaces heated is increased, the air temperature can be dropped with the same comfort, and that saves fuel.

Comfort in a house is determined by what is known as the mean radiant temperature, which is the average of the air temperature in the room and the surface temperatures of walls, ceilings and floor. Quite naturally, if you increase the surface temperatures you can lower the air temperature. That is why, in a convected heating system, you often have to raise the air temperature, or the thermostat, to 75 degrees. Air at that temperature is dry and must be humidified and conditioned for comfort.

In a well laid out radiant heating job 60 or 65 degree air provides comfort and is much better to live with, and here

is one of the major possibilities for fuel saving. These warm surface temperatures will warm the air in the room, for, as I have said, convection and radiation operate together. But the surfaces are warm and they remain warm.

Open a window or a door and you lose very little heat; on a calm day you lose practically no heat with all windows and doors open. Air movement with such heating is slow and you get no drafts, with their resultant feeling of coolness, in the wintertime. Frost and condensation are cut down for the same reason.

It is quite obvious that radiant heat has distinct advantages over the older types, and for this reason it is becoming increasingly popular. Those who now have it in their houses swear they will never do without it.

The most popular types of radiant heating are the systems using circulating air and circulating hot water. Steam is impractical because it is too hot for most installations, although it has been used in some cases.

One of the arguments against radiant heating has been the "lag" of the system. Lag refers to the time it takes to increase or decrease heat. Actually, this so-called lag is an advantage, for the system that creates heat quickly also loses heat quickly, resulting in what is known in the trade as "cold seventy." Cold seventy is never experienced with radiant heat, and it is never necessary to turn the heat down when you leave the house for a while, for the convection losses are negligible and an even heat is much better for you and the contents of your house than any other.

Masonry floors can be built directly on the ground, eliminating basements entirely. Such a masonry floor directly on the ground can be warmed in winter, will be cool in summer when not heated, and will act then as a radiant cooling agent to help keep the interiors cool on hot days. Children playing on warm floors in winter will be warm and

not cold as they are in most houses now built in this country. In the winter, with warm floors, feet will be warmer, and with warm feet the entire body feels warmer.

Air temperatures six inches above the floor will be warmer than six inches below the ceiling, a fact never accomplished by most other heating systems now known. This all means uniform heat, well distributed, for the comfort of all the members of the family, old and young, and that is a very important point in housing.

As an architect I have been using nothing but radiant heating for the past ten years, and my experience, coupled with what the owners have said, makes radiant heating a "must" in my plans. You simply are not getting a modern house without it.

However, if radiant heating is impossible, the older methods of heating can be counted on as in the past.

First, there is steam heat. A boiler generates steam, using, of course, any kind of fuel. This steam is conducted through the building by pipes and distributed through radiators of various types. The steam is condensed in these radiators and heat transferred to the rooms throughout a building. The condensation is returned to the boiler. By far the majority of our buildings in the United States are heated in this manner, and the system has proved satisfactory over the years. To this simple method have been added many improvements and inventions to improve the even distribution of heat. One such variation is the vacuum system. The outstanding feature of vacuum heat is the lowering of the pressure in the system, thus generating steam at lower boiling points, providing economy as well as a more even heat.

Second, there is the hot water type of heating. This system is similar to steam, except that hot water flows throughout the piping to the radiators instead of steam. The lower

temperatures of the warm water make necessary a larger radiator, but the heat distribution, especially on milder days, is more uniform and more evenly distributed. The hot water can flow through the system by gravity, or it can be forced through by electrically driven pumps. For the gravity system larger pipes must be used than in the forced flow, and one offsets the other in cost.

Radiators, of course, you know. There are many types of the familiar cast iron ones, the newer models of which are designed to be recessed into walls. A popular and highly efficient type of radiator is the fin applied to the pipe.

Third, there is the gravity and forced warm air type of heating. In this system air is heated and distributed, usually through sheet metal ducts, to the various parts of a house, with similarly constructed return ducts to the heat generating unit. One of the advantages of such a system is that the air which recirculates in a house can be "conditioned." That usually means that it can be humidified by adding water to the air as it passes through the heat generating unit, or it can be filtered, screening out the dust in it. This heating lends itself best to artificial dehumidification and cooling in the hot summer days.

Each Fuel Has Its Own Advantages

A word about fuels for heating the house should be given here. There are three universally used fuels, any of which can be used in any of the aforementioned heating systems. They are coal, oil and gas. For the quantity of heat content per unit, coal is by far the cheapest; oil usually is next in cost, and gas the most expensive.

As these fuels become more expensive, they gain in other advantages. Manually fired coal is lowest in cost, but requires constant attention; there is the mess of removing ashes and a lower efficiency of operating. A modern stoker

is an improvement, but also an additional investment; a stoker increases the efficiency of operation and reduces attention to once a day or thereabouts.

Oil as a fuel is cleaner and requires no stoking or manual work, but it does require a tank and an oil burner as an additional investment. It is more efficient than coal, and many furnaces are now made with oil burners designed as a part of the heat generating unit.

Gas is an ideal fuel in many respects. There are two types: natural gas, and artificial, or manufactured, gas; often the two are mixed. When gas is used as a fuel, it should have at least 600 BTUs (British Thermal Units—a unit for measuring heat) per cubic foot.

A fourth fuel, electricity, is coming more and more into use as a fuel, especially in the South, and as its cost comes down there will be a greater tendency toward its use for heating houses. Of course, in parts of the country where wood is plentiful it, too, is used as a fuel.

There Must Be Good Air and Proper Light

Air conditioning is an amplification of the heating system. In a great part of the United States, summer air conditioning in well-planned, insulated houses is unnecessary. Air conditioning equipment often is installed to lessen stifling heat in improperly designed structures or because crowds of people (such as in theaters) heat up a room. In its present form air conditioning is desirable but expensive.

For people suffering from asthma or hay fever, there is a device, electrically controlled, that filters pollen and even tobacco smoke out of the air. Some manufacturers have developed a combination heating and cooling unit; one uses gas as a fuel. I am sure this field is in its infancy as far as houses are concerned, and the near future will see a good deal of progress in its development.

Another factor important to comfort in the home is that of windows. There has been a steady tendency for some time to increase the glass areas of houses. Several important things happen when one increases such glass areas. Paradoxically, the increased glass areas *reduce* glare. In the old-fashioned house the small window openings darken the interiors considerably and cause the dilation of the eye pupil to adjust for the reduced light. A window opening, then, when daylight enters, glares by contrast. And if the eye has to make many such adjustments fatigue and headache result.

Large glass areas, perhaps an entire long wall of glass, by increasing the amount of light and distributing it evenly all over the room, bring up the light intensity more nearly to outside light, thereby reducing eye fatigue. The increased intensity of light is especially good for children who have not yet learned how to take care of their eyes. Eyestrain among children is common in poorly lighted houses.

The increase of light in a house also furnishes new opportunities for interior decoration. Instead of tinted walls, deeper color tones can be used, opening a wide vista to new ideas for the decoration of the home. Just as the added daylight in a house is good for growing plants (the all-glass greenhouse is the extreme example), so the added light is good and healthful for humans.

These arguments for more daylight in the home are quite as logical as those for more intense lighting at night. Artificial night light also should be well distributed and uniform throughout the house or the occupied rooms. For best results, the entire room should be lighted, certainly for children who play, and preferably with indirect lighting. Both day and night lighting should be arranged for adequate control, so that it may be reduced or increased as

desired by the occupants to suit the nature or use to which the rooms are put at any moment.

Humidity can be stepped up if double glazing is used. There are now available on the market sealed double glazing units, consisting of two layers of glass with an air space between. If you install such glass in your house you will have "storm windows" the year-round. This will operate in reverse in the summer to keep the interior cool while the outside is hot. For the housewife there are only two sides of glass to clean periodically, instead of four, and for the husband there are no storm windows to remove.

You Will Want More Built-In Furniture

The furniture used to furnish houses is undergoing a marked change. More and more, architects are building equipment into walls and making it a part of the house, thereby reducing the number of movable pieces of furniture in the house. Closets have become excellently organized pieces of furniture combining a built-in chifforobe and wardrobe. Dressing tables are built in, and often the beds, too, with headpieces containing lights, bookshelves, drawers and electric alarm clocks. Sometimes the only pieces of movable furniture are the chairs. Such built-in equipment, if well planned, functions perfectly and reduces for the housewife the manual labor of moving and cleaning heavy pieces of furniture.

One of the newer developments in the field of built-in mechanical equipment is the utility unit. One such unit now available combines the installation of the major mechanical parts necessary for the small house. It has the heating unit, hot water unit, kitchen and laundry equipment and bathroom complete. The kitchen part consists of a range, sink, refrigerator and cabinet space. The laundry unit has a mechanical washer, mangle and a broom closet.

This equipment is centered around a "core," the bath on one side, the kitchen on another and the laundry on a third. It comes as a unit and is installed easily with a minimum of conflicting work by mechanics on the job. Cold water and drainage must be brought to the core, and a small pit is needed. A house plan must be devised that allows the various parts to work to full advantage, the bath near the sleeping quarters, the kitchen near the dining room or living room, etc., but this is easy for any architect.

The entire unit is about nine feet square and eight feet high, and comes in sections so that it can be brought into the house. In time it ought to reduce installation costs for such mechanical equipment and make for a better job, being not only easier to install but simpler to maintain, and it should speed house building by cutting down work at the site.

Many prefabricators of houses are going one step beyond this and are planning to deliver a completed structure, including all mechanical equipment in place. This is a great step forward, for it centralizes responsibility throughout.

Flat roofs that carry a sheet of water or a spray are becoming more popular. Such a flat roof that holds water can have an inside downspout to a drain, eliminating outside gutters and downspouts that freeze in winter and need frequent painting. The spout through the house is warmed and kept free of ice and snow. A water spray or a thin sheet of water on the roof helps, by evaporation, to keep the house cool in summer. Most roofs are strong enough to withstand any snow load in winter; in fact, if you could keep a foot of snow on the roof during the winter it would insulate the house and reduce the fuel bill.

Electricity Can Serve You Better

The potentialities of electricity have not yet been fully explored. Our houses have been wired for light for a long

time, but have you noticed that the quality and quantity of light have improved greatly? The war has given fluorescent lighting a great boost and it is now readily available, giving better and more light with far less wattage than the old. Just as the development of larger glass areas helps light up the house in the daylight houses, so the newer lighting by night will help the eyes of all of us. Ideal light for the eye is the light intensity under a tree in summer, and improved lighting is helping to bring that ideal condition into the house. Daylight, and more of it, means health and so does night light.

The other improvements that electricity brings are far too numerous and well known to mention. Just remember when you build to include plenty of sockets for the many new devices that are constantly being developed. We will need more and more electricity for the home, to lighten the daily chores, to entertain us and to make the house more livable. As our leisure hours increase with the increasing efficiency of our mechanical age, we will need more avocations, and such rooms as workshops with power tools will become standard equipment for the homes of those who are mechanically inclined.

The kitchen devices now on the market, from toasters to dishwashers, reduce the drudgery of keeping house and improve the quality of meals. The new utility rooms will be just off the kitchen, if not a part of it, thereby lessening the number of steps a housewife must take to get her work done. Modern equipment in today's house has made the basement as old-fashioned as the woodshed, and it has helped to make possible the one-story house, thus eliminating stairways.

Mechanical improvements and equipment have largely been responsible for the better living conditions now found in most of our newer houses.



PART 3

ON BUYING
OLD HOUSES

If you've decided to buy an old house rather than build a new one, you will find W. Clyde Lammey's two chapters that follow exciting reading indeed. For Mr. Lammey—one of the practical, down-to-earth men who gather the exciting material which appears each month in POPULAR MECHANICS—here presents some mighty useful hints in helping you assess the soundness of the old house you plan to buy. He takes you inside and out—and calmly suggests how to listen to the heartbeat of the old house and diagnose its value. In a word, this is important reading!

THE EDITORS



CHAPTER TEN

Look at the Inside

by W. CLYDE LAMMEY

THE prospective buyer of a house is at a disadvantage in that there are many parts of the structure he cannot see. Hence the only thing he can do is to look for the results of faulty construction or other defects.

It should be kept in mind that any cause of defects in one house is not always applicable to others. Alterations to correct structural faults in one instance may be costly while in another they may be relatively inexpensive.

Although some defects are fairly common, they generally vary with each building so that no definite rule for cause, cost of repair or extent of damage can be relied on. The important thing is the condition of the building itself.

It may be old, appear shabby and run down, yet structurally be as sound and good as ever. Or it may be new in years and old structurally.

When you look at an older house keep in mind that it costs relatively little to apply paint, change a partition or two, remove a ponderous porch, lay new floors and trim, or put in a picture window.

But if, in modernizing, you have to rebuild the interior, install a new heating plant, change the entire roof line, excavate a basement and put in a new foundation wall or rebuild a faulty chimney, the cost of any or all of these major items added to the purchase price may result in a prohibitive figure.

Usually you will be invited inside the house first. Carry a notebook and jot down all the important details. Look carefully at the ceilings and floors, for it is here that certain deficiencies in the structure usually show up. An exterior fault is very apt to show up inside the house.

For example, if the downspouts do not have concrete splash blocks or other provision for drainage, there is likely to be seepage of water into the basement. If the flashing around the chimney or in roof valleys is defective, leakage into the attic will loosen plaster and cause other damage to walls and ceilings.

Basement Inspection Is Revealing

Take time to go over the basement thoroughly. Note if there is a cleanout door in the chimney and particularly whether there are any cracks in the floor near the base of the chimney.

Usually, but not always, such cracks indicate undue settling, and if you examine walls and ceilings upstairs you may find a condition such as cracks spreading out from chimney corners. Where walls are papered you will have to look closely to find the cracks. Sometimes in old houses the walls have been papered for years without filling the cracks and replastering.

Here, settling probably is complete, and once the wall is repaired you are not likely to have further difficulty. But in a new house the condition may be a constant source of trouble. Fine hairline cracks are not important, but wide ones and large areas of loose plaster adjacent to the chimney mean that considerable movement has taken place. While looking for loose plaster near a chimney, it's a good idea to tap the walls all the way around each room.

Should this disclose large areas of plaster loose from the lath it will be necessary eventually to replaster the whole wall. However, this defect can be due to causes other than a settling chimney.

When you get up in the attic, notice the construction at the point where the chimney comes through the ceiling. This depends somewhat on the location of the chimney and the time it was built, but approved construction specifies that there be no wood within four or five inches of the brick.

Open cracks extending laterally in basement walls are generally caused by unequal strains due to insufficient footing. However, there are numerous other causes for this slow breaking up of monolithic walls. "Honeycombing," due to improper proportions of materials, insufficient mixing, inadequate puddling, and segregation of materials by careless pouring are also causes of slow disintegration.

In some cases a whole section of the wall is "broken out," separated completely by large cracks, and the edges of the cracks will often show that one section has slipped past

another. This condition may be due to inadequate cross section in proportion to height or load.

Where there are constant accumulations of ground water in the grade, such walls not only will leak badly but under repeated freezing and thawing may break up entirely. If the house is built in an area forming a natural "sump," or where there is insufficient drainage, you may find a concrete-block wall cracked, with the upper and lower sections tipped inward at the break. Place a straightedge vertically to determine the extent of tipping and whether it varies along the length of the wall.

Look all the way around the basement for vertical zigzag cracking of joints between the blocks. If you find these cracks running more or less vertically in a block, masonry or monolithic wall which otherwise appears to be of good construction and adequate proportion, the cause usually is instability of the ground under the foundation footings.

Irregular settling caused by this condition sets up unequal strains which tend to crack the wall vertically. But if the cracks are diagonal or irregularly horizontal, and a straight-edge shows the wall tipping inward at the breaks, then action of frost in a waterlogged grade is a common cause, although water pressure alone can crack the walls.

Concrete floors are sometimes broken up by pressure due to water displacement. Not all basement floors are put in over an adequate cinder fill, and frequently the floor is too thin or the mix is too lean.

Tap the floor lightly with a hammer. If the sound of the tapping is uniformly flat the chances are the concrete is of sufficient thickness and is over a tamped cinder fill. But if there is a hollow sound at any point it means that either the slab is thin at this point or the ground underneath has settled away leaving it unsupported. If the area is large the floor may break up in time.

Also note the slope of the floor to the drains. Occasionally, where the drain is stopped with a screw-in plug, water backs from the storm sewers with such force that it breaks the tile near the trap, letting the water in under the floor, which often results in cracks and flooding of the basement.

Examine the interior of the furnace with a flashlight, noting the condition of the grates and the firebrick lining. Condition of the heating plant is more important than its age or type.

After the furnace, take a close look along the center supporting beam, noting especially how the ends of the floor joists are supported. The important thing here is whether the ends of the joists are pulled away from the beam, if they are supported in stirrups or on ledger strips. If they are pulled away, the cause may be shrinkage along the length, or the span may be too great, causing joists to bend slightly. Also, it may be that basement walls have settled out of plumb, or have settled more than has the center girder, resulting in the tilting of the support. If you see this, check the upper floors and inside door jambs with a spirit level. If the floors and jambs are slightly out of plumb in an older house, and if the basement walls are still in good condition, it is generally safe to assume that the condition is not serious. But if you see this flaw in a new house be sure to find out the cause before you pass it.

Among other causes for such a condition are severe windstorms that may have racked the structure slightly out of plumb, or a cloudburst that may have been the cause of more settling within a matter of days than would normally take place in months or years.

Can the "Little Nuisances" Be Corrected?

In almost every house there are many little things, most of which may be classed as nuisances or inconveniences.

Many can be corrected easily but some cannot be changed. For example, a basement stairway may be too steep or the ratio of the tread width to the height of the riser incorrect. Or the hot and cold water pipes may run too close together, resulting in unpleasantly warm drinking water. Also, the kitchen sink may be located so that one must stand with one's back to the light, or it may be too low, or the drainboard may be on the right, an inconvenience to a right-handed person. A fireplace that smokes and cannot be repaired readily is worse than useless. Again, you may see a pedestal lavatory placed so close to the bathroom wall that it's impossible to clean behind it. In this connection, omission of a cleanout plug in the soil pipe usually may be taken as evidence of skimping, although in some communities these plugs are forbidden by local ordinance because of the danger of untrapped fixtures being attached by unauthorized persons.

Learn if possible the name of the contractor who built the house. From him you probably can get the specifications which will tell you about the grades of materials used, whether the walls are insulated and many other details you cannot see.

If you are about to buy an old house and are planning to modernize it, or if you have looked at a number of houses and wish to keep the arrangement of each more clearly in mind for purposes of comparison, it will help to make simple sketches of each one, using the notes you made at the time of viewing it. Such sketches are not difficult to make and they are a valuable help in visualizing changes or in determining values.



CHAPTER ELEVEN

Look at the Outside

by W. CLYDE LAMMEY

AFTER you have examined the interior of a house, noticing carefully the condition of ceilings, walls, floors, plumbing and heating equipment, and basement walls, you should make a detailed inspection of the outside in much the same way.

Jot down your findings in your notebook and keep inspection cards carefully for each house. This data is especially helpful if you are looking at a number of houses, which means you will have to decide on a basis of carefully weighed advantages and disadvantages.

The first thing to notice outside is, literally, the "lay of the land." It's very important, too, for it may mean the

difference between a well-drained location and a "sump" or low spot. The latter may be the cause of such recurring troubles as sluggish drainage after prolonged rainfall, sinking sidewalks, flooded storm sewers, steady seepage through basement walls, undue settling of the foundation, etc.

Such things also have a very definite bearing on resale value of the property. This point always should be kept in mind, for the cost of remedy added to the initial cost may mean a total investment considerably above the market value of the property.

Water Damage Should Be Noted

So look up and down the street, across the street and back in the alley—if there is an alley. Note carefully the slopes to or from the location. If the house is near or on the crest of a hill or even a slight rise one can generally assume, other things being equal, that the basement will be dry and that drainage will be adequate.

Even if the property is on a steep slope or side hill, drainage is likely to be good unless the land above the house is both flat and of considerable extent. Then it sometimes happens that there is a springlike seepage either above or on the property.

In connection with the lay of the land, always find out about storm sewers and particularly the location of the branch connecting with the basement drain. Once you know the location of the connecting branch, note if there are any large trees near it.

Sometimes tree roots give trouble in tile drains by pushing fine feeding roots into the drain through joints, or by larger roots growing under the tile and heaving and breaking it. If the property is located in a low, flat area of considerable extent, then the thing to find out is whether or not there is natural drainage to carry away subsurface water.

The point to remember is that wherever there is an unduly slow drainage of subsurface water from one point to another or to lower levels, the chances of continuing water and frost damage to basement walls, footings, floors, and walks are increased.

Next comes the exterior of the structure itself. Usually it is rather difficult to tell about the framing. Unless you can question the builder, you will have to judge the soundness of the framing by the visible exterior and interior details of the building. If the house has stood for some years and still has that general well-set-up appearance, with tight siding, uncracked masonry or brick (depending on the construction), plumb corners and walls and a true ridge line, then there's little need to bother about the framing.

Is the Siding Sound?

One thing always to watch for in an older house is whether or not the beveled siding is nailed directly to the studding with no sheathing at all. You can generally tell by rapping smartly on the siding. If a rap produces a thin, hollow sound, investigate further. If a heavy tongue-and-groove siding was used, then the defect is more easily remedied. But where beveled siding is nailed directly to the studding there is no satisfactory way of furring the walls for stucco or shingles. It can be done, of course, but it is not always permanent. In older houses a shiplap sheathing was generally used. All types are good provided the work was properly done by reputable builders.

In new homes without basements the walls should be examined carefully for defects. If the builder's specifications are available they should be checked. A careful builder will have followed them in every detail.

It is always a good idea to check the four corners of a house with the spirit level. Be sure to note whether there

are any evidences of faulty flashing around the chimney, dormers and in roof valleys. It may be necessary to go into the attic and make a detailed inspection for evidences of leaks. Usually the remedy is simple and inexpensive but on certain roof designs it may be rather difficult.

The upper side of a wide multiple-flue chimney projecting through the roof at any point below the ridge should be protected by what is known as a "cricket." This is a triangular-shaped affair of sheet metal which is flashed to the roof and chimney and prevents any accumulation of water and snow on the upper side.

Another thing to look at closely is the provision for the disposal of water from the gutters. This is important because the drainage problem is involved and it will take time and money to remedy any defect. Leading the downspouts into a tile that connects either with a cistern or the storm sewer is in some respects the best, although a splash block is suitable if it is large enough to conduct the water some distance from the basement wall.

In connection with the cistern, remember to ask about its construction. It is usually conceded that in a reasonably well-drained location the best construction for a cistern requires that it have a concrete bottom or floor, but that the sides should be of brick laid up loose, that is, no mortar in the joints. Some older cisterns have a fine gravel or sand bottom. In any case the cistern should be provided with an overflow and manhole for cleaning.

A House Should Fit Its Surroundings

Frequently you will see a large house, old in years, flanked on either side with smaller, newer homes. This brings up another point. Of course, such a dwelling looks out of place. Adjacent homes emphasize its date of construction and its probably rather gaunt architecture, while

it in turn detracts from the more newly developed properties. However, many types of older houses, particularly the L-shaped structures, lend themselves well to inexpensive modernizing. Picture windows, flush cornices, removal of porches, wide siding to "lower" height, and an addition to break up the ridge lines are a few inexpensive alterations that change a rigidity of line to a harmony of easy and pleasing contrasts.

This done, an old house will no longer look and be out of place. When you're inspecting the exterior of an older dwelling keep in mind what these simple changes can do in the way of adding to livability and resale value.

Wall Damage May Be Extensive

Still another point, if you learn that the walls of any house are solid brick or masonry construction, is to be sure to find out definitely whether the plaster is furred away from the wall; that is, separated from the brick by wood strips and lath. You will sometimes find plaster applied directly to a brick or masonry wall. Under certain conditions of dampness and temperature changes these walls will "sweat": moisture will condense on the surface and cause trouble, in addition to creating unhealthful living quarters.

If you discover a crack in a masonry wall it generally means that a condition of strain has been developed by undue and unequal settling. Unless the crack runs the height of the wall or involves a corner, or the adjacent sections show evidence of movement, it is safe to assume that the crack can be pointed up with no further trouble.

Another defect to look for, especially in brick veneered walls, is an open horizontal crack. If it runs for only a short distance the chances are it is not important, but if it is long and well open it may mean that the wall is tipping or

bulging outward. Such instances are comparatively rare and are likely to be due to causes other than poor workmanship. "Blisters" on stucco walls, due to moisture getting behind the stucco coating, are more or less minor defects, as it is usually easy to remedy the conditions causing the trouble. Chip the mortar in brick or masonry joints with a penknife or other sharp-pointed tool. If it's hard it's probably in good condition throughout the whole structure, but if it's soft and powdery better look the walls over carefully for other evidences of crumbling mortar.

On shingled walls there is little likelihood of defect except where the staining has been neglected and where the shingles have been laid with a greater exposure to the weather than recommended. When shingle walls are double-coursed and butt-nailed the exposure is often as much as 12 inches for a 16 inch shingle and 16 inches for a 24 inch shingle. Note whether the shingles at the corners are "laced," that is, overlapping, or whether they are mitered; the latter method is considered the best construction. Note also whether shingles are of the flat or edge grain type, the latter being preferred. Beveled siding is sometimes cornered, but a better way is mitering and finishing with a metal corner strip.

Although gutters are a comparatively minor item they should, of course, be included in the inspection. Usually they are either the hanging or box type, the second being perhaps the best because they can be anchored solidly to the cornices. However, they are more difficult to remove when renewal is necessary. The type of cornice tends to date a house. The overhanging open type is desirable from the standpoint of weather protection, but it is difficult to paint, necessarily weaker and tends to darken the interior of the house. The narrow box cornice is generally more to be desired because it is better in structural detail and appearance.

How Is the Roof?

Next comes the roof. Wooden shingles should be laid with the edges abutting, not separated. Also, abutting edges should be located as much as possible over the center of shingles in the next row underneath. There are several types of composition strip shingles, the hexagon type being a common one.

If the house has been reroofed, composition shingles over wood shingles, or wood over wood, find out whether edging boards have been fitted at the gables and in the valleys along the eaves. Frequently this essential detail is omitted in reroofing. Composition shingles laid without edging boards are apt to be stripped off at the gables and eaves by a high wind, necessitating a troublesome repair.

And that's about all, except—when you buy an old house you generally buy good materials, sound construction and satisfactory location. Even though grandfather's ideas of architecture may be far outdated by new production-line methods of home design and home building, his craftsmanship still is tops. New methods of heating, new materials, new lighting ideas, new floor plans, new window arrangements and a new exterior can usually, and to a varying degree, be worked into old houses that still are structurally sound. It seems quite safe to say that old houses in good locations, with plumb corners, straight ridge lines and sound basic architectural design, are first-rate buys at any reasonable price.



PART 4

APPENDIX

We make no claims that the pages that follow read like a best-selling novel. Frankly, they're pretty heavy going and we won't blame you if you pick your way through them with care. As you will see by thumbing through the pages, here are tables and samples of legal documents that are common in home ownership. In Chapter Seven, Mr. Cerza urged you to protect your legal rights. There is no better way of doing precisely that than by knowing the legal documents you will have to sign in order to buy your home. Here they are—together with a glossary of legal and real estate terms you may find useful in interpreting letters from your bank, mortgage house or contractor.

THE EDITORS

The proportion of their income which each family spends on various items has a direct relationship to their ability to purchase and retain their own home. This factor is discussed on page 45. The table below indicates the principal items of expense and how much, on the average for the United States, various income groups spend for each of these.

How People Spend Their Money (Families of Two or More)

ITEM	ANNUAL MONEY INCOME AFTER PERSONAL TAXES						
	\$1500 to \$2000	\$1950: "break even" point	\$2000 to \$2500	\$2500 to \$3000	\$3000 to \$4000	\$4000 to \$5000	\$5000 and over
Percent of families in each class	10.7	—	14.0	14.7	23.0	11.2	14.4
Money income after personal taxes . . .	\$1779	\$1950	\$2259	\$2757	\$3480	\$4408	\$7595
Expenditures for current consumption	1788	1877	2051	2410	2838	3439	4305
Food	701	733	797	913	1043	1150	1386
Clothing	234	250	283	364	462	623	848
Housing, fuel, light and refrigeration	341	359	394	430	488	547	616
Household operation	83	87	93	110	140	166	295
Furnishings and equipment	49	53	60	88	95	132	157
Automobile	42	52	69	105	119	177	171
Other transportation	44	46	50	51	63	84	109
Medical care . . .	105	105	104	123	149	190	265
Personal care . . .	41	43	48	56	65	84	110
Recreation	46	49	55	63	82	105	137
Tobacco	41	41	41	48	59	71	76
Reading	18	19	22	27	31	37	43
Formal education .	11	10	9	15	13	29	42
Other	32	30	26	17	29	44	50
Personal taxes	86	119	180	270	402	559	2385
Gifts and contributions	66	73	86	119	119	203	454
Net savings or deficit .	-75	0	122	228	523	766	2836
War bonds	82	105	147	233	316	410	1206
Life and annuity insurance premiums	59	63	70	83	109	140	263
Other	-216	-168	-95	-88	98	216	1367
Average number persons	3.03	3.05	3.10	3.13	3.69	4.01	4.13
Average number earners	1.22	1.24	1.27	1.31	1.57	1.97	2.12

This table is explained in Chapter Four. It gives additional information concerning the chart on page 37, and will help you determine how much you can safely afford to pay from your monthly salary for a mortgage of any given size.

Monthly Take-Home Pay Required to Carry Your Mortgage

(Based upon an original nonequity payment equal to one sixth your spendable income)

Mortgage size	First nonequity payment (estimated ¹)	Steady monthly take-home pay required	TOTAL MONTHLY PAYMENT (estimated ¹)		
			25 year mortgage period	20 year mortgage period	15 year mortgage period
\$3200	\$18.73	\$112	\$24.52	\$26.99	\$31.21
3400	19.90	119	26.05	28.67	33.16
3600	21.07	126	27.59	30.36	35.11
3800	22.24	133	29.12	32.04	37.06
4000	23.41	140	30.65	33.73	39.01
4200	24.58	147	32.18	35.42	40.96
4400	25.75	155	33.71	37.10	42.91
4600	26.92	162	35.25	38.79	44.86
4800	28.09	169	36.78	40.67	46.81
5000	29.27	176	38.32	42.17	48.77
5200	30.44	183	39.85	43.86	50.72
5400	31.61	190	41.38	45.54	52.67
5600	32.74	196		47.19	54.58
5800	33.91	203	25 year mortgage extended only up to \$5400	48.87	56.53
6000	35.08	210		50.56	58.48
6200	36.25	218		52.25	60.43
6400	37.42	225		53.93	62.38
6600	38.59	232		55.62	64.33
6800	39.76	239		57.30	66.28
7000	40.93	246		58.99	68.23
7200	42.10	253		60.68	70.18
7400	43.27	260		62.36	72.13
7600	44.44	267		64.05	74.08
7800	45.61	274	65.73	76.03	
8000	46.78	281	67.42	77.98	
8200	47.95	288	69.11	79.93	
8400	49.12	295	70.79	81.88	
8600	50.29	302	72.48	83.83	
8800	51.46	309	74.16	85.78	
9000	52.63	315	75.85	87.73	

¹ The amount for insurance is estimated at 20 cents per thousand per month. The amount for taxes is estimated at \$1.50 per thousand per month. Both are based on the full face of the mortgage. The actual payments for these two items must be computed for each specific case.

Often, in addition to the usual agreements for the purchase of real estate, there will be agreements covering certain restrictions on the use of the property. These are explained on page 19. They may appear in separate contracts, deeds or other title papers. Some of the most common examples of such restrictions are listed below.

Common Real Estate Restrictions

1. Single family dwellings only, up to 2½ stories.
2. Solid masonry foundations four (4) feet below ground level grade.
3. Building within established set-back and side-lot lines, and on limited area.
4. Recorded minimum house costs of \$9,000.
5. No temporary or permanent occupancy of trailer, basement, garage, or other outbuilding.
6. No noxious or offensive trade, activity, nuisance or annoyance.
7. No outdoor signs or advertising.
8. No exposed fuel storage tank.
9. Annual charge of 10 cents per foot of frontage, payable May 1 of each year, for maintaining drainage, pavements or roads, sidewalks, entrances, gates, street signs, parkways, parks, utilities, vacant parcels, and public landscaping; penalties for nonpayment.
10. Approval of external design of building, fence, or other structure by the Property Owners Committee.
11. No keeping of bees, of cattle, of swine, of goats, of geese, of poultry, of horses.
12. Covenants run with land to January 1, 1965, and are automatically extended for 10 year periods, unless, at such times, changed by majority vote of owners.
13. Any property owner may file proceedings to restrain violation of restrictions.
14. Invalidation of one covenant in nowise affects the remaining covenants.

This form is used when an agreement to purchase has been reached and is designed to cover the period between the making of the agreement and the bringing of title to date. Upon the bringing of title to date, the actual delivery of the deed takes place. Information concerning agreements to purchase is given on pages 76 to 83. A typical example of such an agreement is shown below.

Agreement to Purchase

A.B., buyer, agrees to buy and C.D., seller, agrees to sell the following property known as 1216 East Main Street, Chicago, Illinois, bearing legal description of Lot 6, in Block 5, of Universal Subdivision in Section 16, Township 39 North, Range 13, East of the Third Principal Meridian, for the sum of Ten Thousand Dollars, free of all incumbrances.

Seller agrees to convey to the buyer a good title to said property by warranty deed, with release of dower and homestead rights, subject to

1. Existing leases.
2. Special assessments.
3. General taxes for the year 1947.
4. Building lines and restrictions.

The customary prorations are to be made at the time of delivery of deed.

The buyer has made a deposit of Five Hundred Dollars which is to be applied on said purchase when deal is consummated, and agrees to pay the balance within five days after title is shown to be good, provided deed is ready for delivery.

Within thirty days the seller shall furnish the buyer with one of the following:

1. A merchantable abstract of title brought down to date of this contract.
2. Report of title of the A.B.C. Title Company, brought down to date hereof.
3. A Torrens Certificate.

In the event there are any objections to the title, the seller shall have thirty days in which to clear said objections, but buyer may elect to take title subject to said objections. If such defects are not cured within said thirty days, the buyer may terminate this contract, or may, at his election, take title as it is (with the right to deduct from the purchase price liens that are of a definite or ascertainable amount) upon giving to seller notice of such election. If this contract is terminated except for buyer's default, the earnest money shall be returned to buyer, and this contract shall be null and void.

The seller agrees to pay Five Hundred Dollars to X.Y.Z. as his real estate broker's commission.

Time is of the essence of this agreement.

This contract and the money deposited shall be held by L.M., attorney. Deal is to be closed at his office.

Signed at Chicago, Illinois, on January 2, 1947.

_____ (SEAL)

_____ (SEAL)

Witnesses:

(Add notarial certificate if required by law of your state.)

This type of contract is used when the down payment is relatively small and monthly payments are made.

Contract for Warranty Deed

A.B., seller, agrees to sell and C.D., buyer, agrees to buy the property known as 1216 East Main Street, Chicago, Illinois, bearing legal description of

Lot 6, in Block 5, of Universal Subdivision in Section 16, Township 39 North, Range 13, East of the Third Principal Meridian,

for the sum of Ten Thousand Dollars, to be paid as follows: Three Hundred Dollars upon the signing of this agreement, Fifty Dollars or more on the fifteenth day of each month thereafter, plus interest of six percent per annum on unpaid balance, until paid in full.

When the buyer has paid one third of the principal, and all accrued interest, the seller agrees to supply buyer with a title guarantee policy for \$10,000.00, of said date, and to convey said property to the buyer by a warranty deed subject to the following:

1. Rights of parties in possession.
2. Questions of survey.
3. Taxes assessed after January 1, 1947.
4. Mechanic's liens not of record.
5. Mortgage recorded at time of deed securing balance of purchase price.

Buyer to sign mortgage for the balance at time of delivery of deed.

The buyer agrees to make the payments as stated above at the place designated by the seller; to pay all taxes and assessments as they come due; to keep the premises covered by insurance to the extent of the balance due under this contract and to deliver policies to the seller; and to keep the said premises in a good condition.

The buyer shall be entitled to have possession of the premises only so long as he keeps up the payments of principal as provided herein.

Time is of the essence of this contract.

In the event that the buyer fails to make any of the payments provided herein, or keep any of the other agreements provided herein, the seller may declare the balance immediately due and payable; or said seller may re-enter and take possession of the premises; or he may make the necessary repairs to keep the premises in good condition and charge the cost to the buyer; or said seller may forfeit this contract and retain the amount collected as liquidated damages.

Signed and sealed at Chicago, Illinois, January 2, 1947.

_____ (SEAL)

_____ (SEAL)

Witnesses:

(Add notarial certificate if required by law of your state.)

The following two forms are typical of agreements between owner and architect and between owner and contractor. They are the standard copyright forms of the American Institute of Architects and copies can be obtained from the Institute at Washington, D.C., at nominal cost.*

THE STANDARD FORM OF AGREEMENT BETWEEN OWNER AND ARCHITECT

ISSUED BY THE AMERICAN INSTITUTE OF ARCHITECTS FOR USE WHEN A PERCENTAGE OF THE COST OF THE WORK FORMS THE BASIS OF PAYMENT

THIRD EDITION—COPYRIGHT 1917-1926 BY THE
AMERICAN INSTITUTE OF ARCHITECTS, WASHINGTON, D. C.

THIS AGREEMENT made the _____ day of

_____ in the year Nineteen Hundred and _____

by and between _____

hereinafter called the Owner, and _____

_____ hereinafter called the Architect,

WITNESSETH, that whereas the Owner intends to erect _____

NOW, THEREFORE, the Owner and the Architect, for the considerations hereinafter named, agree as follows:

The Architect agrees to perform, for the above-named work, professional services as hereinafter set forth.

The Owner agrees to pay the Architect for such services a fee of _____ percent of the cost of the work, with other payments and reimbursements as hereinafter provided, the said percentage being hereinafter referred to as the "basic rate."

* Copyright 1947 by the American Institute of Architect. Permission to reprint these forms does not necessarily constitute endorsement or approval of this book by the American Institute of Architects.

The parties hereto further agree to the following conditions:

1. *The Architect's Services.*—The Architect's professional services consist of the necessary conferences, the preparation of preliminary studies, working drawings, specifications, large scale and full size detail drawings; the drafting of forms of proposals and contracts; the issuance of certificates of payment; the keeping of accounts, the general administration of the business and supervision of the work.

2. *Reimbursements.*—The Owner is to reimburse the Architect the costs of transportation and living incurred by him and his assistants while traveling in discharge of duties connected with the work, and the costs of the services of heating, ventilating, mechanical and electrical engineers.

3. *Separate Contracts.*—The basic rate applies to work let under a single contract. For any portions of the work let under separate contracts, on account of extra service thereby required, the rate shall be four percent greater, and if substantially all the work is so let the higher rate shall apply to the entire work; but there shall be no such increase on any contracts in connection with which the Owner reimburses the Engineers' fees to the Architect, or for articles not designed by the Architect but purchased under his direction.

4. *Extra Services and Special Cases.*—If the Architect is caused extra draughting or other expense due to changes ordered by the Owner, or due to the delinquency or insolvency of the Owner or Contractor, or as a result of damage by fire, he shall be equitably paid for such extra expense and the service involved.

Work let on any cost-plus basis shall be the subject of a special charge in accord with the special service required.

If any work designed or specified by the Architect is abandoned or suspended the Architect is to be paid for the service rendered on account of it.

5. *Payments.*—Payments to the Architect on account of his fee shall be made as follows, subject to the provisions of Art. 4:

Upon completion of the preliminary studies, a sum equal to 20 percent of the basic rate computed upon a reasonable estimated cost.

Upon completion of specifications and general working drawings (exclusive of details) a sum sufficient to increase payments on the fee to 75 percent of the rate or rates of commission arising from this agreement, computed upon a reasonable cost estimated on such completed specifications and drawings, or if bids have been received, then computed upon the lowest bona fide bid or bids.

From time to time during the execution of work and in proportion to the amount of service rendered by the Architect, payments shall be made until the aggregate of all payments made on account of the fee under this Article, but not including any covered by the provisions of Article 4, shall be a sum equal to the rate or rates of commission arising from this agreement, computed upon the final cost of the work.

Payments to the Architect, other than those on his fee, fall due from time to time as his work is done or as costs are incurred.

No deductions shall be made from the Architect's fee on account of penalty, liquidated damages, or other sums withheld from payments to contractors.

6. *Survey, Borings and Tests.*—The Owner shall, so far as the work under this agreement may require, furnish the Architect with the following information: A complete and accurate survey of the building site, giving the grades and lines of streets, pavements, and adjoining properties; the rights, restrictions, easements, boundaries, and contours of the building site, and full information as to sewer, water, gas and electrical service. The Owner is to pay for borings or test pits and for chemical, mechanical, or other tests when required.

7. *Supervision of the Work.*—The Architect will endeavor to guard the Owner against defects and deficiencies in the work of contractors, but he does not guarantee the performance of their contracts. The supervision of an Architect is to be distinguished from the continuous

personal superintendence to be obtained by the employment of a clerk-of-the-works.

When authorized by the Owner, a clerk-of-the-works acceptable to both Owner and Architect shall be engaged by the Architect at a salary satisfactory to the Owner and paid by the Owner, upon presentation of the Architect's monthly statements.

8. *Preliminary Estimates.*—When requested to do so the Architect will furnish preliminary estimates on the cost of the work, but he does not guarantee the accuracy of such estimates.

9. *Definition of the Cost of the Work.*—The cost of the work, as herein referred to, means the cost to the Owner, but such cost shall not include any architect's or engineer's fees or reimbursements or the cost of a clerk-of-the-works.

When labor or material is furnished by the Owner below its market cost the

cost of the work shall be computed upon such market cost.

10. *Ownership of Documents.*—Drawings and specifications as instruments of service are the property of the Architect whether the work for which they are made be executed or not.

11. *Successors and Assignments.*—The Owner and the Architect, each binds himself, his partners, successors, executors, administrators, and assigns to the other party to this agreement, and to the partners, successors, executors, administrators and assigns of such other party in respect of all covenants of this agreement.

Except as above, neither the Owner nor the Architect shall assign, sublet or transfer his interest in this agreement without the written consent of the other.

12. *Arbitration.*—All questions in dispute under this agreement shall be submitted to arbitration at the choice of either party.

The Owner and the Architect hereby agree to the full performance of the covenants contained herein.

IN WITNESS WHEREOF they have executed this agreement, the day and year first above written.

**THE A. I. A. SHORT FORM
FOR
SMALL CONSTRUCTION CONTRACTS**

**AGREEMENT AND GENERAL CONDITIONS
BETWEEN CONTRACTOR AND OWNER**

ISSUED BY THE AMERICAN INSTITUTE OF ARCHITECTS FOR USE ONLY WHEN THE PROPOSED WORK IS SIMPLE IN CHARACTER, SMALL IN COST, AND WHEN A STIPULATED SUM FORMS THE BASIS OF PAYMENT. FOR OTHER CONTRACTS THE INSTITUTE ISSUES THE STANDARD FORM OF AGREEMENT BETWEEN CONTRACTOR AND OWNER FOR CONSTRUCTION OF BUILDINGS AND THE STANDARD GENERAL CONDITIONS IN CONNECTION THEREWITH FOR USE WHEN A STIPULATED SUM FORMS THE BASIS FOR PAYMENT

FIRST EDITION, COPYRIGHT, 1936, BY THE
AMERICAN INSTITUTE OF ARCHITECTS, THE OCTAGON, WASHINGTON, D. C.

THIS AGREEMENT made the _____ day of _____
in the year Nineteen Hundred and _____
by and between _____
hereinafter called the Contractor, and _____
hereinafter called the Owner.

WITNESSETH, that the Contractor and the Owner for the considerations hereinafter named agree as follows:

ARTICLE 1. *Scope of the Work*—The Contractor shall furnish all of the material and perform all of the work for _____
_____ as shown on the
(Caption indicating the portion or portions of work covered)
drawings and described in the specifications entitled

prepared by _____ Architect
all in accordance with the terms of the contract documents.

ARTICLE 2. *Time of Completion*—The work shall be substantially completed _____

ARTICLE 3. *Contract Sum*—The Owner shall pay the Contractor for the performance of the contract subject to the additions and deductions provided therein in current funds, the sum of _____
_____ dollars. (\$ _____)

ARTICLE 4. *Progress Payments*—The Owner shall make payments on account of the contract, upon requisition by the contractor, as follows:

ARTICLE 5. *Acceptance and Final Payment*—Final payment shall be due _____ days after completion of the work, provided the contract be then fully performed, subject to the provisions of Article 16 of the General Conditions.

ARTICLE 6. *Contract Documents*—Contract documents are as noted in Article 1 of the General Conditions. The following is an enumeration of the drawings and specifications:

GENERAL CONDITIONS

ARTICLE 1. *Contract Documents*—The contract includes the *Agreement* and its *General Conditions*, the *Drawings*, and the *Specifications*. Two or more copies of each, as required, shall be signed by both parties and one signed copy of each retained by each party.

The intent of these documents is to include all labor, materials, appliances and services of every kind necessary for the proper execution of the work, and the terms and conditions of payment therefor.

The documents are to be considered as one, and whatever is called for by any one of the documents shall be as binding as if called for by all.

ARTICLE 2. *Samples*—The Contractor shall furnish for approval all samples as directed. The work shall be in accordance with approved samples.

ARTICLE 3. *Materials, Appliances, Employes*—Except as otherwise noted, the Contractor shall provide and pay for all materials, labor, tools, water, power and other items necessary to complete the work.

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality.

All workmen and subcontractors shall be skilled in their trades.

ARTICLE 4. *Royalties and Patents*—The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.

ARTICLE 5. *Surveys, Permits, and Regulations*—The Owner shall furnish an adequate survey of the property. The Contractor shall obtain and pay for all permits necessary for the prosecution of the work. He shall comply with all laws and regulations bearing on the conduct of the work and shall notify the Owner if the drawings and specifications are at variance therewith.

ARTICLE 6. *Protection of Work, Property, and Persons*—The Contractor shall adequately protect the work, adjacent property and the public and shall be responsible for any damage or injury due to his act or neglect.

ARTICLE 7. *Inspection of Work*—The Contractor shall permit and facilitate inspection of the work by the Owner and his agents and public authorities at all times.

ARTICLE 8. *Changes in the Work*—The Owner may order changes in the work, the Contract Sum being adjusted accordingly. All such orders and adjustments shall be in writing. Claims by the Contractor for extra cost must be made in writing before executing the work involved.

ARTICLE 9. *Correction of Work*—The Contractor shall re-execute any work that fails to conform to the requirements of the contract and that appears during the progress of the work, and shall remedy any defects due to faulty materials or workmanship which appear within a period of one year from the date of completion of the contract. The provisions of this article apply to work done by subcontractors as well as to work done by direct employees of the Contractor.

ARTICLE 10. *Owner's Right to Terminate the Contract*—Should the Contractor neglect to prosecute the work properly, or fail to perform any provision of the contract, the Owner, after seven days' written notice to the Contractor, may, without prejudice to any other remedy he may have, make good the deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor or, at his option, may terminate the contract and take possession of all materials, tools, and appliances and finish the work by such means as he sees fit, and if the unpaid balance of the contract price exceeds the expense of finishing the work, such excess shall be paid to the Contractor, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the Owner.

ARTICLE 11. *Contractor's Right to Terminate Contract*—Should the work be stopped by any public authority for a period of thirty days or more, through no fault of the Contractor, or should the work be stopped through act or neglect of the Owner for a period of seven days, or should the Owner fail to pay the Contractor any payment within seven days after it is due, then the Contractor upon seven days' written notice to the Owner, may stop work or terminate the contract and recover from the Owner payment for all work executed and any loss sustained and reasonable profit and damages.

ARTICLE 12. *Payments*—Payments shall be made as provided in the Agreement. The making and acceptance of the final payment shall constitute a waiver of all claims by the Owner, other than those arising from unsettled liens or from faulty work appearing thereafter, as provided for in Article 9, and of all claims by the Contractor except any previously made and still unsettled. Payments otherwise due may be withheld on account of defective work not remedied, liens filed, damage by the Contractor to others not adjusted, or failure to make payments properly to subcontractors or for material or labor.

ARTICLE 13. *Contractor's Liability Insurance*—The Contractor shall maintain such insurance as will protect him from claims under Workmen's Compensation Acts and from any other claims for damages for personal injury, including death, which may arise from operations under this contract. Certificates of such insurance shall be filed with the Owner, if he so require, and shall be subject to his approval for adequacy of protection.

ARTICLE 14. *Owner's Liability Insurance*—The Owner shall be responsible for and at his option may maintain such insurance as will protect him from his contingent liability for damages for personal injury, including death, which may arise from operations under this contract.

ARTICLE 15. *Fire Insurance*—The Owner shall effect and maintain fire insurance upon the entire structure on which the work of this contract is to be done and upon all materials, in or adjacent thereto and intended for use thereon, to at least eighty percent of the insurable value thereof. The loss, if any, is to be made adjustable with and payable to the Owner as Trustee for whom it may concern, except in such cases as may require payment of all or a proportion of said insurance to be made to a mortgagee as his interests may appear.

The insurance shall cover the following items and labor connected therewith whether in or adjacent to the structure insured:—materials in place or to be used as part of the permanent construction including surplus materials, shanties or temporary structures, scaffoldings, and stagings, protective fences, bridges, forms, and miscellaneous materials and supplies necessary to the work.

The insurance shall not cover any tools owned by mechanics or any tools or equipment owned or rented by the Contractor, and the Owner shall not be responsible for any loss on such property.

ARTICLE 16. *Liens*—The final payment shall not be due until the Contractor has delivered to the Owner a complete release of all liens arising out of this contract, or receipts in full covering all labor and materials for which a lien could be filed, or a bond satisfactory to the Owner indemnifying him against any lien.

ARTICLE 17. *Separate Contracts*—The Owner has the right to let other contracts in connection with the work and the Contractor shall properly cooperate with any such other contractors.

ARTICLE 18. *The Architect's Status*—The Architect shall have general supervision of the work. He has authority to stop the work if necessary to insure its proper execution. He shall certify to the Owner when payments under the contract are due and the amounts to be paid. He shall make decisions on all claims of the Owner or Contractor. All his decisions are subject to arbitration.

ARTICLE 19. *Arbitration*—Any disagreement arising out of this contract or for the breach thereof, shall be submitted to arbitration and this agreement shall be specifically enforceable under the prevailing arbitration law, and judgment upon the award rendered may be entered in the highest court of the forum, state or federal, having jurisdiction. It is mutually agreed that the decision of the arbitrators shall be a condition precedent to any right of legal action that either party may have against the other.

The parties may agree upon one arbitrator; otherwise there shall be three, one named in writing by each party of this contract within five days after notice of arbitration is served by either party upon the other, and a third arbitrator selected by these two arbitrators within five days thereafter. No one shall serve as an arbitrator who is in any way financially interested in this contract or in the affairs of either party thereto.

At the written request of either party, at any time prior to the complete appointment of arbitrators, as provided above, or in the event of any default or lapse in the proceeding, the arbitration shall be held under the Standard Form of Arbitration Procedure of The American Institute of Architects or of the Rules of the American Arbitration Association.

ARTICLE 20. *Cleaning Up*—The Contractor shall keep the premises free from accumulation of waste material and rubbish and at the completion of the work he shall remove from the premises all rubbish, implements and surplus materials and leave the building broom clean.

IN WITNESS WHEREOF the parties hereto executed this Agreement, the day and year first above written.

Specifications are discussed further in Chapter Six. The following specifications are typical of the items which one contractor would include.

Typical Specifications

Date _____ Plan number _____ Architect _____
 Purchaser's name _____
 Purchaser's address _____
 Location of the job _____

Prime Construction Cost Items

Surveys	\$ _____
Miscellaneous (unexpected cost items or items overlooked)	\$ _____
Vandalism	\$ _____
Winter cost, fuel and labor (if built in whole or in part during winter months)	\$ _____
Fire insurance during construction (if not paid by owner)	\$ _____
Building permits	\$ _____
Ventilating louvers	\$ _____
Water meter	\$ _____
Mailbox and house numbers	\$ _____
Gas service stub into building	\$ _____
Rough hardware, nails, chimney cleanout door, etc.	\$ _____
Finishing hardware	\$ _____
Bathroom wall accessories	\$ _____
Medicine case	\$ _____
Window shades	\$ _____
Iron ornamental porch rail	\$ _____
Weatherstripping	\$ _____
Caulking of all exterior wall openings	\$ _____
Excavating (backfilling, rough grading and spreading topsoil)	\$ _____
Concrete (walls, footings, piers, basement floor, porch slabs, sidewalks)	\$ _____
Masonry (including chimney, fireplace, walls, etc.)	\$ _____

Structural steel (beams, columns, etc., and labor of setting same)	\$
Linoleum floors (kitchen, bath, etc.)	\$
Tilework (kitchen, bath, etc.)	\$
Insulation	\$
Lumber, including finish flooring	\$
Millwork (frames, trim, doors, sash, moldings, screens, combination doors, storm windows)	\$
Interior main stairs (mill made and erected on job by stair company)	\$
Electrical wiring and trim	\$
Lighting fixtures (allowance in contract)	\$
Roofing (labor and materials)	\$
Glass and glazing and estimated breakage replacement	\$
Plumbing, sewer work and hot water apparatus	\$
Heating plant (including wiring, gas run, etc.)	\$
Sheet metal (gutters, flashing, etc.)	\$
Plastering	\$
Kitchen cases	\$
Carpentry	\$
Painting and decorating	\$
Moving dirt surplus, if any, or providing and hauling additional required fill and topsoil	\$
Total of prime construction cost factors	\$

Additional Cost Factors

Commission to salesmen (if any)	\$
Job overhead	\$
Main office overhead	\$
Job superintendence	\$
Watchman service	\$
Temporary buildings	\$
Patching and repairs	\$
Cleaning up loose ends and rubbish	\$
Interest on contractor's funds (if any used)	\$
	<u>\$</u>
Total	\$

As explained in more detail on pages 72 and 73, the contractor will enter into agreement with other contractors for various parts of the work. Such agreements would be similar to the one shown below.

Agreement Between Contractor and Subcontractor

This agreement, made the _____ day of _____, 194____, by and between

hereinafter called the "Subcontractor," and Realty Corporation, an Illinois Corporation, hereinafter called the "General Contractor."

WITNESSETH, that the subcontractor and the general contractor for the considerations hereinafter named agree as follows:

ARTICLE 1—*Scope of the work*—The subcontractor shall furnish all of the material and perform all of the work for _____

as shown on the drawings, and described in the specifications entitled _____

prepared by _____, Architect, all in accordance with the terms of the contract documents, to be built at _____

ARTICLE 2—*Time of completion*—The work shall be substantially completed by _____

ARTICLE 3—*Contract sum*—The general contractor shall pay the subcontractor for the performance of the contract, subject to the additions and deductions provided therein, the sum of _____ Dollars (\$ _____).

ARTICLE 4—*Progress payments*—The general contractor shall make payments on account of the contract upon requisition by the subcontractor of 85 percent of the value of labor and material installed, on the 10th of the month following.

ARTICLE 5—*Acceptance and final payment*—Final payment shall be due 30 days after completion of the work, provided the contract then be fully performed, subject to the provision of Article 13 of the General Conditions.

GENERAL CONDITIONS

ARTICLE 1—*Contract documents*—The contract includes the Agreement and its General Conditions, the Drawings and Specifications. The intent of these documents is to include all labor, materials, appliances and services of every kind necessary for the proper execution of the work, and the terms and conditions of payment therefor.

General conditions set forth in specifications and applying to general contractor, insofar as they affect this subcontractor's work, shall apply to and become part of this contract.

ARTICLE 2—*Materials, appliances and employes*—Except as otherwise noted, the subcontractor shall provide and pay for all materials, labor, tools, water, power, and other items needed to complete the work. Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality. All workmen and subcontractors shall be skilled in their trades.

ARTICLE 3—Royalties and patents—The subcontractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights, and shall save the general contractor harmless from loss on account thereof.

ARTICLE 4—Permits and regulations—The subcontractor shall obtain and pay for all permits necessary for the prosecution of his work. He shall comply with all laws and regulations bearing on the conduct of the work, and shall notify the general contractor if the drawing and specifications are at variance therewith.

ARTICLE 5—Protection of work, property and persons—The subcontractor shall adequately protect his work, adjacent property and the public, and shall be responsible for any damage or injury due to his act or neglect.

ARTICLE 6—Inspection of work—The subcontractor shall permit and facilitate inspection of the work by the general contractor and his agents, the owner, and public authorities at all times.

ARTICLE 7—Changes in the work—The general contractor may order changes in the work, the contract sum being adjusted accordingly. All such orders and adjustments shall be in writing. Claims by the subcontractor for extra cost must be made in writing before executing the work involved.

ARTICLE 8—Correction of work—The subcontractor shall re-execute any work that fails to conform to the requirements of the contract and that appears during the progress of the work, and shall remedy any defects due to faulty materials or workmanship which may appear within a period of one year from the date of completion of the contract. The provisions of this Article apply to work done by his subcontractors, as well as to work done by direct employes of the subcontractor.

ARTICLE 9—General contractor's right to terminate the contract—Should the subcontractor neglect to prosecute the work properly or fail to perform any provision of the contract, the general contractor, after 5 days' written notice to the subcontractor at _____, may, without prejudice to any other remedy he may have, make good the deficiencies, and may deduct the cost thereof from the payment then or thereafter due the subcontractor, or, at his option, may terminate the contract and take possession of all materials, tools and appliances, and finish the work by such means as he sees fit, and if the unpaid balance of the contract price exceeds the expense of finishing the work, such excess shall be paid to the subcontractor, but if such expense exceeds such unpaid balance, the subcontractor shall pay the difference to the general contractor.

ARTICLE 10—Subcontractor's right to terminate contract—Should the work be stopped by any public authority for a period of 30 days or more, through no fault of the subcontractor, or should the work be stopped through act or neglect of the general contractor for a period of seven days, or should the general contractor fail to pay the subcontractor any payment within 45 days after it is due, then the subcontractor, upon seven days' written notice to the general contractor at (address), may stop work or terminate the contract and recover from the general contractor payment for all work executed.

ARTICLE 11—Payments—Payments shall be made as provided in the agreement. The making and acceptance of the final payment shall constitute a waiver of all claims by the general contractor, other than those arising from unsettled liens or from faulty work appearing thereafter, as provided for in Article 8, and of all claims by the subcontractor except any previously made and still unsettled. Payments otherwise due may be withheld on account of defective work not remedied, liens filed, damage by the subcontractor to others not adjusted, or failure to make payments properly to subcontractors, or for material and labor.

ARTICLE 12—Subcontractor's liability insurance—The subcontractor shall maintain such insurance as will protect him from claims under Workmen's Compensation

Acts and from any other claims for damages for personal injuries, including death, which may arise from operations under this contract. Certificates of such insurance shall be filed with the general contractor, and shall be subject to his approval for adequacy of protection.

ARTICLE 13—*Liens*—The final payment shall not be due until the subcontractor has delivered to the general contractor a complete release of all liens arising out of this contract, or receipts in full covering all labor and materials for which a lien could be filed, or a bond satisfactory to the general contractor indemnifying him against any lien. Subcontractor shall supply general contractor with a sworn statement of his subcontractors and material men, and the amounts of their respective contracts, and upon making requisition for payment give a sworn statement in proper form showing unpaid amounts due subcontractors and material men.

ARTICLE 14—*Cleaning up*—The subcontractor shall keep the premises free from accumulation of waste material and rubbish, and at the completion of the work he shall remove from the premises all rubbish, implements and surplus materials, and leave the building broom clean.

ARTICLE 15—*Occupational tax*—For the purpose of the Occupational Tax of the State of Illinois, of said contract price \$_____ represents labor or tax paid materials, and \$_____ represents "fixtures," including installation charge. Where under the law, the general contractor is obliged to pay such tax, the subcontractor shall allow a credit of \$_____.

ARTICLE 16—*Licensing*—Subcontractor states he is a duly licensed contractor, licensed to operate in the State, County, Village or City in which building is to be built, and that he is responsible for State and Federal Social Security Taxes, and further states that he operates strictly in accordance with the Union rules and practices.

ARTICLE 17—Time is of the essence hereof.

IN WITNESS WHEREOF the parties hereto executed this Agreement the day and year first above written.

REALTY CORPORATION

By:_____

A mortgage may be in the form below or it may be in the form of what is known as a trust deed. In each instance the papers signed will consist of three forms: a note, mortgage (or trust deed) and an assignment of rents. The conditions and provisions are generally the same but the arrangement of the paragraphs and wording may be slightly different. Each loan company has its own form of mortgage and rarely will allow any change from the prescribed form. The best test to use in deciding whether the mortgage is unfair is: any provision that gives rights and power to the mortgage holder after default cannot be objected to, but any undue restrictions on the property holder before default may legitimately be questioned.

Loan No.

Note

Secured by Mortgage

To

**FIRST FEDERAL SAVINGS
and Loan Association of Chicago**

Upon Property Located at:

NOTE

For Value Received, I hereby promise to pay to

**First Federal Savings and Loan Association
of Chicago**

a corporation organized and existing under the laws of the United States or its successors and assigns, at its offices in Chicago, or at such other place as may be designated by the holder of this note, the principal sum of _____

ADDITIONAL
ADVANCES

Dollars (\$ _____), and such additional sums as may be advanced hereon by the holder of this note to the maker, together with interest at the rate of _____ percent

INTEREST
RATE
DECLINES

(_____ %) per annum for the first _____ months from date and at the rate of _____ percent

(_____ %) per annum for the next _____ months from date, and at the rate of _____ percent

(_____ %) per annum for the next _____ months from date, and at the rate of _____ percent

(_____ %) per annum until paid in full. Said principal and interest to be payable in monthly installments of _____

_____ Dollars (\$ _____) per month beginning on the _____ day of _____, 19____, and in the event of an additional

advance hereon over and above the principal sum stated above, such monthly payments shall continue at a rate to be agreed upon at the time of such additional advance with interest at a rate then agreed upon.

INTEREST
ON UNPAID
BALANCE
ONLY

2. Said payments shall be applied first to interest on the unpaid balance at the rate herein specified, and then to principal. The interest for each month shall be added to the unpaid balance on the 1st day of the said month at the rate of 1/12 of the annual interest rate, and shall be calculated upon said unpaid balance due as of the last day of the preceding month. This note may be prepaid in part or in full at any time with interest to date of payment, provided that if any such prepayment arises from the refinancing of the property securing this note by the undersigned or his successor in title 90 days' advance interest shall be paid, and provided that 20 days' advance notice shall be given of any such prepayment.

FLEXIBLE
PREPAYMENT
PROVISION

3. In the event of any prepayment, this note shall not be treated as in default at any time so long as the unpaid balance of principal, additional advances under this note or the instrument securing the same, and interest (and in such case accruing interest from month to month shall be treated as unpaid principal) is less than the amount that said indebtedness would have been had the monthly payments have been made as first specified above; provided that monthly payments shall be continued in the event of any credit of any proceeds of any insurance or condemnation, and interest shall be calculated at all times on the unpaid balance.

GRACE
PERIOD FOR
BORROWER
IN NEED

4. In the event of the maker's unemployment, illness or an accident to him or other emergency affecting his ability to pay at any time after three years from date upon written notice from the maker to the holder hereof of intention to do so, the maker shall have the right from time to time to lapse one or more payments but not exceeding a total of three regular monthly payments first hereinabove provided for and at any time after ten years a total of three additional payments and such lapse of payments shall not be treated as a default upon this obligation but nevertheless the full amount of principal and interest shall be payable within the period required to pay this obligation, principal and interest, by regular monthly installments as first hereinabove provided.

PROVISION
FOR TAXES,
INSURANCE,
ETC.

5. In order to provide for the payment of taxes, assessments, insurance premiums, and other charges upon the property securing this indebtedness, I promise to pay monthly to the said association, in addition to the above payments, a sum estimated to be equivalent to one-twelfth of such items which payments may, at the option of said association (1) be held in trust by it for the payment of such items; (2) be carried in a share account and withdrawn by it for money to pay such items; or (3) be credited to the unpaid balance of said indebtedness as received, provided that said association advances upon this obligation sums sufficient to pay said items as the same accrue and become payable. If the amount estimated to be sufficient to pay said items is not sufficient, I promise to pay the difference upon demand. If such sums are held in trust or carried in a share account, the same are hereby pledged to further secure this indebtedness. Said association is authorized to pay said items as charged or billed without further inquiry.

ASSISTANCE
TO BORROWER
REQUIRED TO
MOVE FROM
COMMUNITY

6. In the event the maker is residing in the property securing this note and finds it necessary to move from the community on account of his employment or to seek employment, said association agrees, if requested in writing by the maker, to manage said property or to select a responsible management and sales agent for it. It is understood that such management is as agent for the owner and not as a mortgagee in possession and that any income will be applied to customary charge for management, taxes, insurance, maintenance, repair, interest upon this obligation, principal of this obligation and any overplus to the owner. Such management shall not interfere with the payment of this obligation as herein provided or its involuntary liquidation as provided by contract or by law.

NOTE AND
MORTGAGE
ONE CONTRACT

7. This note is secured by an instrument executed by me and bearing even date herewith to said association, or for its benefit, and all of the terms and conditions of said instrument are hereby incorporated in and made a part of this note.

INTEREST IF
IN DEFAULT

8. I further agree that upon any default upon this obligation, or the instrument securing it, interest at the rate of one percent (1%) per annum above the original rate provided herein on the unpaid balance of this indebtedness may be charged for the period of such default. Upon any default under this obligation, or the instrument securing it, at the option of the holder of this note, the unpaid balance of this note, and any advances made under it, or the instrument securing it, together with interest, shall become due

ACCELERATION

and payable, time being of the essence of this contract. Any waiver of any payment hereunder or under the instrument securing this note at any time, shall not, at any other time, be taken to be a waiver of the terms of this note or the instrument securing it.

POWER TO
CONFESS
JUDGMENT

9. To further secure the payment of this note, I hereby authorize, irrevocably, any attorney of any court of record to appear for me, in any court, in term time or vacation, at any time after default and confess a judgment jointly and severally, without process, in favor of the association, its successors or assigns, for the unpaid balance of principal and interest exclusive of other advances, together with costs and reasonable attorney's fees and waive and release all errors which may intervene in any such proceeding and consent to immediate execution on such judgment; hereby ratifying and confirming all that my said attorney may do by virtue hereof.

WAIVER OF
NOTICE

10. The makers, sureties, guarantors and endorsers of this note jointly and severally, hereby waive notice of and consent to any and all extensions of this note or any part thereof without notice, and each hereby waives demand, presentment for payment, notice of non-payment and protest, and any and all notice of whatever kind or nature and the exhaustion of legal remedies hereon.

SINGULAR
INCLUDES
PLURAL, ETC.
JOINT AND
SEVERAL

11. In this note and the instrument securing it, the singular shall include the plural and the masculine shall include the feminine and the neuter. This note shall be the joint and several obligation of all makers, sureties, guarantors and endorsers, and shall be binding upon them, their heirs, personal representatives and assigns.

IN WITNESS WHEREOF, this note is executed, sealed and delivered this _____ day of _____, 19_____

(SEAL)

(SEAL)

Box 165

Mortgage

To

FIRST FEDERAL SAVINGS
and Loan Association of Chicago

FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION OF CHICAGO

MORTGAGE

THIS INDENTURE WITNESSETH: That the undersigned,

of the _____ County of _____, State of Illinois,
hereinafter referred to as the Mortgagor does hereby Mortgage and
Warrant to

First Federal Savings and Loan Association of Chicago

a corporation organized and existing under the laws of the United
States, hereinafter referred to as the Mortgagee, the following real
estate, situated in the County of _____ in the State
of Illinois, to-wit: _____

TOGETHER with all the buildings and improvements now or hereafter erected thereon, including all gas and electric fixtures, plumbing apparatus, motors, boilers, furnaces, ranges, refrigerators, and all apparatus and fixtures of every kind, whether used for the purpose of supplying or distributing heat, refrigeration, light, water, air, power or otherwise, now in or which hereafter may be placed in any building or improvement now or hereafter upon said property; together with the rents, issues and profits thereof which are hereby assigned, transferred and set over unto the Mortgagee, whether now due or which may hereafter become due under or by virtue of any lease whether written or verbal, or any agreement for the use or occupancy of said property, or any part or parts thereof, which may have been heretofore, or may be hereafter made or agreed to, or which may be made and agreed to by the Mortgagee under the power herein granted to it; it being the intention hereby to establish an absolute transfer and assignment to the Mortgagee of all such leases and agreements and all the avails thereunder, together with the right on the part of the Mortgagee to collect all of said avails, rents, issues and profits arising or accruing at any time hereafter and all now due or that may hereafter become due under each and every of the leases or agreements existing or to hereafter exist for said premises, and to use such measures, legal or equitable, as in its discretion may be deemed proper or necessary to enforce the payment or security of such avails, rents, issues and profits, or to secure and maintain possession of said premises, or any portion thereof, and to fill any and all vacancies and to rent, lease or let any portion of said premises to any party or parties, at its discretion, with power to use and apply said avails, issues and profits to the payment of all expenses, care and management of said premises, including taxes and assessments, and to the payment of any indebtedness secured hereby or incurred hereunder.

TO HAVE AND TO HOLD the said property, with said appurtenances, apparatus and fixtures, unto said Mortgagee forever, for the uses herein set forth, free from all rights and benefits under the Homestead Exemption Laws of the State of Illinois, which said rights and benefits the said Mortgagor does hereby release and waive.

TO SECURE the payment of a certain indebtedness from the Mortgagor to the Mortgagee in the principal sum of _____ Dollars

(\$_____), together with interest thereon as provided by a note of even date herewith made by the Mortgagor in favor of the Mortgagee evidencing said indebtedness, said principal and interest being payable in monthly installments on the _____ day of each month commencing with _____ until the entire sum is paid, as provided in the note hereinafter mentioned. Also to secure any additional advances made by the Mortgagee to the Mortgagor, his heirs or assigns at any time while this mortgage is in force. And to secure the performance of the Mortgagor's covenants herein contained.

A. THE MORTGAGOR COVENANTS:

(1) To either pay immediately when due and payable all general taxes, special assessments and other taxes levied or assessed upon said property or any part thereof and to promptly deliver receipts therefor to the Mortgagee upon demand; or pay such items in accordance with the terms of the note of even date herewith; (2) To keep the improvements now or hereafter upon said premises insured against damage by fire, windstorm and such other hazards or liability as the Mortgagee may require to be insured against, until said indebtedness is fully paid, or in case of foreclosure, until expiration of the period of redemption, for the full insurable value thereof, in such companies and in such form as shall be satisfactory to the Mortgagee; such insurance policies shall remain with the Mortgagee during said period or periods, and contain the usual clause making them payable to the Mortgagee, and in case of foreclosure sale payable to the owner of the certificate of sale; and in case of loss, the Mortgagee is authorized to adjust, collect and compromise, in its discretion, all claims under such policies, and the Mortgagor agrees to sign, upon demand, all receipts, vouchers and releases required of him by the insurance companies; The Mortgagee is authorized in its discretion to apply the proceeds of any such insurance to the discharge of any obligation insured against, to a restoration of the property or to the indebtedness of the Mortgagor and any application to the indebtedness shall not relieve the Mortgagor from making monthly payments until the debt is paid in full; (3) To apply for, secure, assign to said Association, and carry such disability insurance and life insurance as may be required by said Association in companies acceptable to said Association, and in a form acceptable to it, and such disability insurance may be required in an amount not in excess of payments necessary to pay the sums secured by this mortgage and such life insurance may be required in an amount not in excess of the unpaid balance of the debt secured by this mortgage; (4) Not to commit or suffer any waste of such property, and to maintain the same in good condition and repair; (5) To promptly pay all bills for such repairs and all other expenses incident to the ownership of said property in order that no lien of mechanics or materialmen shall attach to said property; (6) Not to suffer or permit any unlawful use of or any nuisance to exist upon said property; (7) Not to diminish or impair the value of said property or the security intended to be effected by virtue of this mortgage by any act or omission to act; (8) To appear in and defend any proceeding which in the opinion of the Mortgagee affects its security hereunder, and to pay all costs, expenses and attorney's fees incurred or paid by the Mortgagee in any proceeding in which it may be made a party defendant by reason of this mortgage; (9) Not to suffer or permit without the written permission or consent of the Mortgagee being first had and obtained (a) any use of said property for a purpose other than that for which the same is now used; (b) any alterations, additions to, demolition or removal of any of the improvements, apparatus, fixtures or equipment now or hereafter upon said property; (c) a purchase upon conditional sale, lease or agreement under which title is reserved in the vendor, of any apparatus, fixtures or equipment to be placed in or upon any building or improvement upon said property; (d) a sale, assignment or transfer of any right, title or interest in and to said property or any portion thereof, or any of the improvements, apparatus, fixtures or equipment which may be found in or upon said property.

B. THE MORTGAGOR FURTHER COVENANTS:

(1) That in case of his failure to perform any of his covenants herein, the Mortgagee may do on his behalf everything so covenanted; that said Mortgagee may also do any act it may deem necessary to protect the lien of this mortgage; and that he will immediately repay any moneys paid or disbursed by the Mortgagee for any of the above purposes, and such moneys together with interest thereon at the highest rate for which it is then lawful to contract shall become so much additional indebtedness secured by this mortgage and may be included in any decree foreclosing this mortgage and be paid out of the rents or proceeds of the sale of said premises, if not otherwise paid by him; that it shall not be obligatory upon the Mortgagee to inquire into the validity of any lien, encumbrance or claim in advancing moneys in that behalf as above authorized, but nothing herein contained shall be construed as requiring the Mortgagee to advance any moneys for any purpose nor to do any act hereunder; that the Mortgagee shall not incur personal liability because of anything it may do or omit to do hereunder;

(2) That it is the intent hereof to secure payment of said Note whether the entire amount shall have been advanced to the Mortgagor at the date hereof or at a later date, or having been advanced, shall have been repaid in part and further advances made at a later date, which advances shall in no event operate to make the principal sum of the indebtedness greater than the amount named in said Note plus any amount or amounts that may be added to the mortgage indebtedness under the terms hereof;

(3) That in the event the ownership of said property or any part thereof becomes vested in a person other than the Mortgagor, the Mortgagee may, without notice to the Mortgagor, deal with such successor or successors in interest with reference to this mortgage and the debt hereby secured in the same manner as with the Mortgagor, and may forbear to sue or may extend time for payment of the debt secured hereby without discharging or in any way affecting the liability of the Mortgagor hereunder or upon the debt hereby secured;

(4) That time is of the essence hereof and if default be made in performance of any covenant herein contained or in making any payment under said Note or any extension or renewal thereof, or if proceedings be instituted to enforce any other lien or charge upon any of said property, or upon the filing of a proceeding in bankruptcy by or against the Mortgagor, or if the Mortgagor shall make an assignment for the benefit of his creditors or if his property be placed under control of or in custody of any court, or if the Mortgagor abandon any of said property, then and in any of said events, the Mortgagee is hereby authorized and empowered, at its option, and without affecting the lien hereby created or the priority of said lien or any right of the Mortgagee hereunder, to declare, without notice, all sums secured hereby immediately due and payable, whether or not such default be remedied by the Mortgagor, and apply toward the payment of said mortgage indebtedness any indebtedness of the Mortgagee to the Mortgagor, and said Mortgagee may also immediately proceed to foreclose this mortgage;

(5) That upon the commencement of any foreclosure proceeding hereunder, the court in which such bill is filed may, at any time, either before or after sale, and without notice to the Mortgagor, or any party claiming under him, and without regard to the then value of said premises, or whether the same shall then be occupied by the owner of the equity of redemption as a homestead, appoint a receiver with power to manage and rent and to collect the rents, issues and profits of said premises during the pendency of such foreclosure suit and the statutory period of redemption, and such rents, issues and profits, when collected, may be applied before as well as after the master's sale, towards the payment of the indebtedness, costs, taxes, insurance or other items necessary for the protection and preservation of the property, including the expenses of such receivership; and upon foreclosure and sale of said

premises there shall be first paid out of the proceeds of such sale a reasonable sum for attorneys' or solicitors' fees, and also all expenses of advertising, selling and conveying said premises, and all moneys advanced for insurance, taxes or other liens or assessments, outlays for documentary evidence, stenographers' charges, all court costs, master's fees, and cost of procuring or completing an abstract of title or guarantee policy or Torrens Certificate showing the whole title to said premises, and including the foreclosure decree and the Master's Certificate of Sale; then to pay the principal indebtedness whether due and payable by the terms hereof or not, and the interest due thereon up to the time of such sale, rendering the overplus, if any, unto the Mortgagor, and it shall not be the duty of the purchaser to see to the application of the purchase money; and in case of payment of said indebtedness, after the filing of any bill to foreclose this mortgage, and prior to the entry of a decree of sale, a reasonable sum for legal services rendered to the time of such payment shall be allowed as solicitors' fees, which, together with any sum paid for continuation of abstract, court costs, and stenographers' charges and expenses of such proceeding, shall be additional indebtedness hereby secured;

(6) That each right, power and remedy herein conferred upon the Mortgagee is cumulative of every other right or remedy of the Mortgagee, whether herein or by law conferred, and may be enforced concurrently therewith; that no waiver by the Mortgagee of performance of any covenant herein or in said obligation contained shall thereafter in any manner affect the right of Mortgagee to require or enforce performance of the same or any other of said covenants; That wherever the context hereof requires, the masculine gender, as used herein, shall include the feminine, and the singular number, as used herein, shall include the plural; that all rights and obligations under this mortgage shall extend to and be binding on the respective heirs, executors, administrators, successors and assigns of the Mortgagor and the Mortgagee.

IN WITNESS WHEREOF, we have hereunto set our hands and seals, this _____ day of _____ A.D. 19 _____

_____ (SEAL) _____ (SEAL)

_____ (SEAL) _____ (SEAL)

STATE OF ILLINOIS }
COUNTY OF } ss.

I, _____ a Notary Public in and for said County, in the State aforesaid, DO HEREBY CERTIFY that _____

personally known to me to be the same person whose name subscribed to the foregoing Instrument, appeared before me this day in person, and acknowledged that _____ signed, sealed and delivered the said Instrument as _____ free and voluntary act, for the uses and purposes therein set forth, including the release and waiver of the right of homestead.

GIVEN under my hand and Notarial Seal, this _____ day of _____ A.D. 19 _____

Notary Public

Box 165.....

Assignment of Rents

To

**FIRST FEDERAL SAVINGS
*and Loan Association of Chicago***

Date..... 19.....

FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION OF CHICAGO

PRIMER FOR HOME BUILDERS
ASSIGNMENT OF RENTS

KNOW ALL MEN BY THESE PRESENTS, that the undersigned,

of the _____ of _____ County of _____ and State of Illinois, in consideration of the sum of One Dollar (\$1.00) and other good and valuable considerations, in hand paid, the receipt whereof is hereby acknowledged, do hereby sell, assign, transfer and set over unto FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION OF CHICAGO, a corporation organized and existing under the laws of the United States (hereinafter referred to as the Association) all the rents, issues and profits now due and which may hereafter become due under or by virtue of any lease, whether written or verbal, or any letting of or any agreement for the use or occupancy of any part of the following described premises:

IT IS UNDERSTOOD AND AGREED THAT THE ASSOCIATION WILL NOT EXERCISE ANY OF ITS RIGHTS UNDER THIS ASSIGNMENT UNTIL AFTER DEFAULT IN THE PAYMENT OF ANY INDEBTEDNESS OR LIABILITY OF THE UNDERSIGNED TO THE ASSOCIATION.

It being the intention of the undersigned to hereby establish an absolute transfer and assignment of all such leases and agreements and all the avails thereunder unto the Association, whether the said leases or agreements may have been heretofore or may be hereafter made or agreed to, or which may be made or agreed to by the Association under the power herein granted.

The undersigned, do hereby irrevocably appoint the said Association their agent for the management of said property, and do hereby authorize the Association to let and re-let said premises or any part thereof, according to its own discretion, and to bring or defend any suits in connection with said premises in its own name or in the names of the undersigned, as it may consider expedient, and to make such repairs to the premises as it may deem proper or advisable, and to do anything in and about said premises that the undersigned might do, hereby ratifying and confirming anything and everything that the said Association may do.

It being understood and agreed that the said Association shall have the power to use and apply said avails, issues and profits toward the payment of any present or future indebtedness or liability of the undersigned to the said Association, due or to become due, or that may hereafter be contracted, and also toward the payment of all expenses and the care and management of said premises, including taxes, and assessments which may in its judgment be deemed proper and advisable, hereby ratifying and confirming all that said Association may do by virtue hereof. It being further understood and agreed that in the event of the exercise of this assignment, the undersigned will pay rent for the premises occupied by them at the rate of

\$_____ per month for each room, and a failure on their part to promptly pay said rent on the first day of each and every month shall, in and of itself constitute a forcible entry and detainer and the Association may in its own name and without any notice or demand, maintain an action of forcible entry and detainer and obtain possession of said premises. This assignment and power of attorney shall be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto and shall be construed as a covenant running with the land, and shall continue in full force and effect until all of the indebtedness or liability of the undersigned to the said Association shall have been fully paid, at which time this assignment and power of attorney shall terminate.

IN WITNESS WHEREOF, the undersigned have hereunto set their hands and seals, this _____ day of _____ A.D. 19____

_____ (SEAL) _____ (SEAL)

_____ (SEAL) _____ (SEAL)

STATE OF ILLINOIS }
COUNTY OF _____ } ss.

I, _____ a Notary Public in and for said County, in the State aforesaid, DO HEREBY CERTIFY THAT _____

personally known to me to be the same person whose name subscribed to the foregoing Instrument, appeared before me this day in person, and acknowledged that _____ signed, sealed and delivered the said Instrument as _____ free and voluntary act, for the uses and purposes therein set forth.

GIVEN under my hand and Notarial Seal, this _____ day of _____ A.D. 19____

Notary Public

THE GRANTOR _____,

of the _____ in the County of _____
and State of _____ for and in consideration of the sum
of _____ Dollars, in hand paid,
CONVEY AND WARRANT to _____

of the _____ County of _____
and State of _____ the following described
Real Estate, to-wit: _____

situated in the _____ of _____
in the County of _____ in the State of Illinois
hereby releasing and waiving all rights under and by virtue of the
Homestead Exemption Laws of the State of Illinois.

DATED, THIS _____ day of _____ A.D. 19 _____

_____(SEAL) _____(SEAL)
_____(SEAL) _____(SEAL)
_____(SEAL) _____(SEAL)
_____(SEAL) _____(SEAL)

STATE OF _____ }
County of _____ } ss.

I, _____
_____ in and for said County, in the State
aforesaid, DO HEREBY CERTIFY, That _____

personally known to me to be the same person _____ whose name _____
subscribed to the foregoing instrument, appeared before me this
day in person, and acknowledged that _____ he _____ signed, sealed and
delivered the said Instrument as _____ free and voluntary act,
for the uses and purposes therein set forth, including the release
and waiver of the right of homestead.

GIVEN under my hand and _____ seal, this
_____ day of _____ A.D. 19 _____

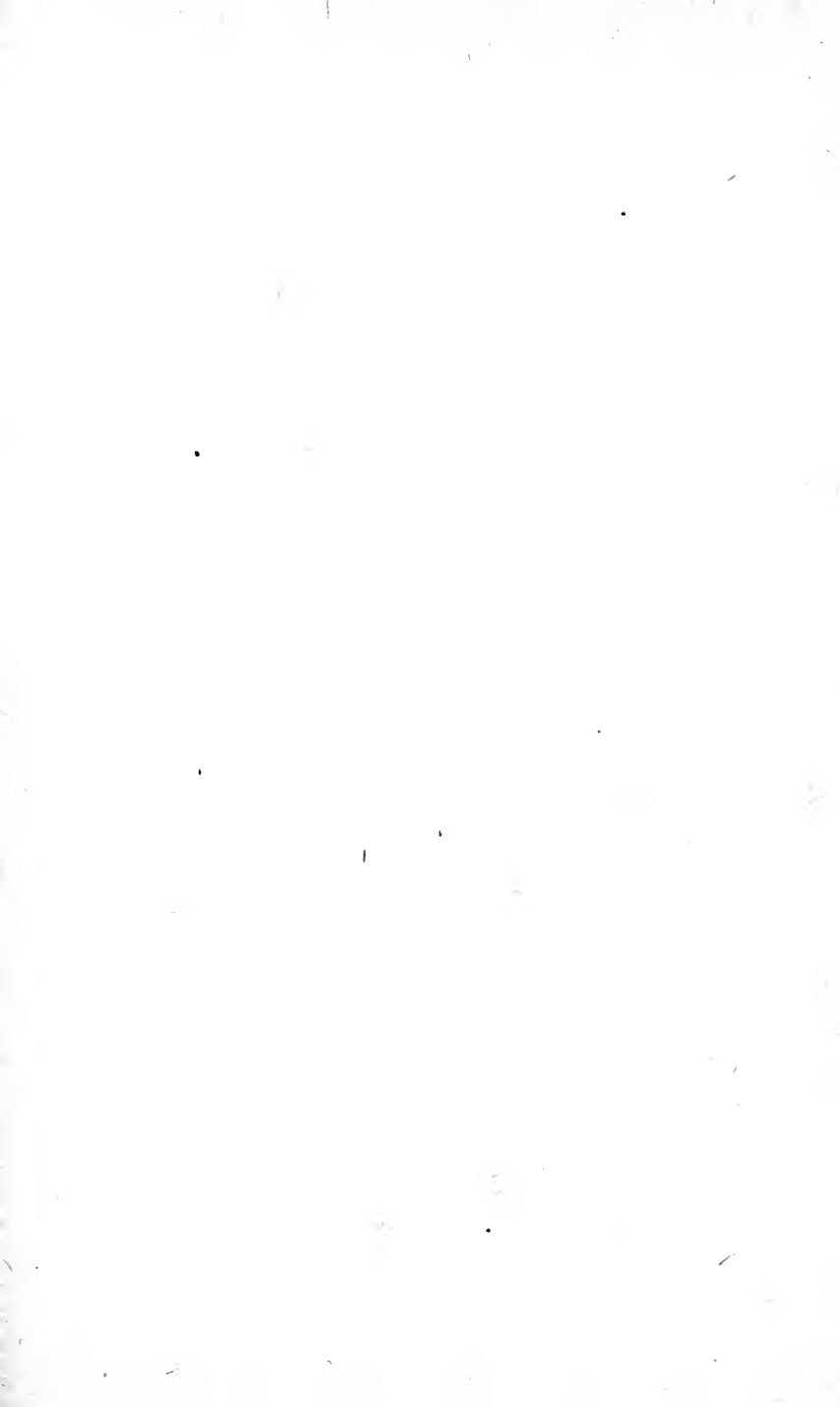
Commission expires _____ A.D. 19 _____

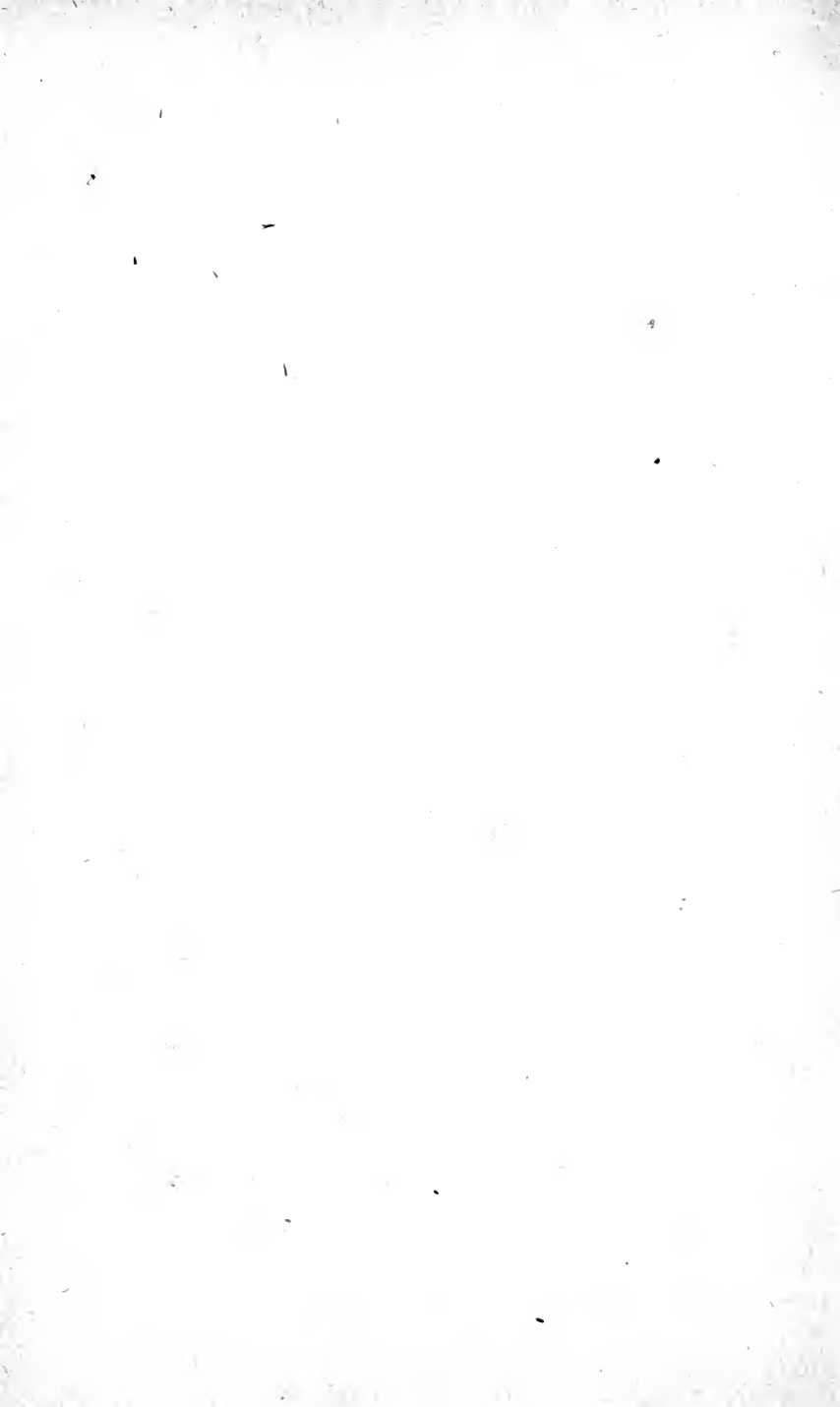
GLOSSARY

- Amortization period*—The time required to pay in full a debt that is gradually reduced by periodic payments.
- Amortized mortgage*—A loan or debt that is gradually reduced by payments made at specified times.
- Assessed value*—Amount determined by a public official as the value of property for tax purposes.
- Contract to purchase*—A written instrument containing the term of the transfer of real estate.
- Cost-plus contract*—An agreement whereby a contractor is compensated for his services on the basis of percentage of the construction cost.
- Easement*—The right to use the property of another for a particular purpose; for example: right to use a road, right to light and air, etc.
- Encroachment*—Going beyond one's boundary and thereby using the land of another.
- Equity*—When one uses the word in the sense of "my equity" in the property it means the balance belonging to him after payment of all mortgages and other liens on the property.
- Escrow*—Depositing money or documents with a third person for a specified purpose.
- Evidence of title*—The papers that show who is the owner and what liens and obligations are held against the property.
- Joint tenancy*—Interest in land held by two or more persons with ownership going to the survivor.
- Mortgage*—Document given as security for a loan in which the property described therein is the security.
- Mortgage insurance*—This term has two meanings. It may relate to the requirement in a mortgage that the property be covered by insurance. It may also relate to the fee charged by the agency making the loan for insurance.
- Orientation*—The act of arranging things so that they are in a proper place in relation to other parts of the same structure.
- Recording*—The act of placing a document with a public officer for the purpose of enrolling it in his records, thereby making it known to persons interested in the subject.

- Restrictions*—Restraints on the use of property. These may relate to type of structure, size of building, its use, etc.
- Special assessment*—Levy made on real estate for benefits that are conferred on the owner. These levies are usually made for such items as installation of sewers, sidewalks, etc.
- Specifications*—The itemization in detail of the types of equipment, size of materials, etc., attached to a construction contract.
- Tenancy in common*—The act of owning property with more than one owner without the survivor's acquiring all the title upon the death of the other owner or owners.
- Waiver of lien*—A written instrument whereby one who might claim a lien because of work or materials supplied on a property states that he will not make such a claim.
- Warranty deed*—Document which transfers ownership from one person to the other with the seller guaranteeing the buyer that the seller is the owner thereof.
- Zoning*—The law which specifies what use can, or cannot, be made of the property.







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