

# Reflections

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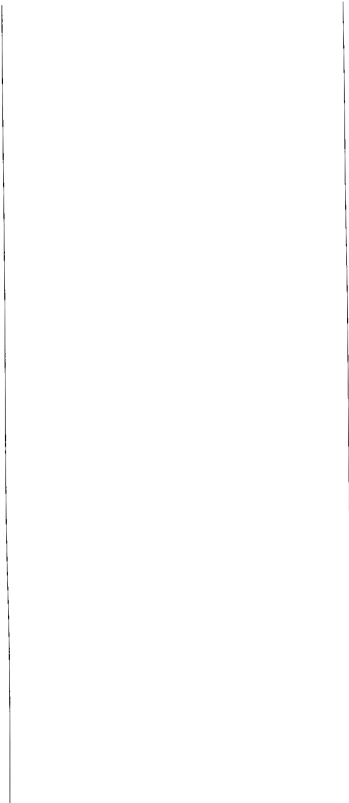


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# Contents

- 4 **Urban Design and the Public Domain:  
Reflections on Hanna Arendt's Insights**  
*Miriam Gusevich*
- 12 **Inquiry Through Design—Statement of  
the Attitude**  
*Wojciech C. Lesnikowski*
- 16 **The Studio as Workplace: Architecture from  
Friday to Monday**  
*Barry Newton*
- 20 **The Use of Narratives in the Design Studio**  
*J. Stephen Weeks*
- 28 **Three Projects**  
*Jeffery S. Poss*
- 36 **Architecture—An Artifact of Culture?**  
*Sanjoy Mazumdar*
- 50 **Mediterranean Indigenous Architecture  
Revisited**  
*James P. Warfield*
- 60 **Gottfried Semper: Architecture  
and the Primitive Hut**  
*Harry Francis Mallgrave*
- 72 **A Critical Afterthought:  
Design as Problem Solving**  
*Johann Albrecht*
- 76 **Authors**

**Reflection** (ri flek shen) n. 1.) The act of casting back from a surface. 2.) To happen as a result of something. 3.) Something that exists dependently of all other things and from which all other things derive. 4.) To look at something carefully so as to understand the meaning.

# Urban Design and the Public Domain: Reflections on Hanna Arendt's Insights

Miriam Gusevich

Urbanity and civility are the spirit of city life, and they only flower in a shared world, in the public domain. This public world has a setting in the city—its streets, squares, and neighborhoods. We see this in literature—in Balzac's Paris, Dostoyevski's Saint Petersburg, Dickens' London.

The city and its streets, squares, and neighborhoods is the object of our concern in urban design. These constitute distinct wholes, inhabited public rooms; they are not merely what is leftover after private buildings have been put up. Similarly, the city is a whole, and not simply an agglomeration of tax-paying properties.

With these statements in mind, consider the following thesis: Urban design is a Civic Art whose purpose is to create and nurture a distinct public realm. This entails the creation of streets and squares not as means but as ends, not as mere conduits for transportation but as distinct *places* open to the multiplicity of human action that constitutes urban life. Hanna Arendt's insights on the nature of the public realm will be used to develop this thesis.<sup>1</sup>

What we mean by the public realm is most readily understood in contrast to the private. According to Hanna Arendt, the private is the domain of the family, of the household; it is circumscribed by necessity.<sup>2</sup> The public realm, in contrast, is the common, shared world.

Counter to common usage, the public for Arendt is neither society nor the State. For Arendt, the rise of the social is a modern phenomenon where the activities of survival become collectively organized outside the structure of the household.<sup>3</sup> The social is the domain of *labor* to satisfy need, the public is the realm of *action* and events; it is the political realm *par excellence*.<sup>4</sup> The public is political, yet it is not synonymous with the state. The state is a legal entity, an institution endowed with a monopoly over

violence. The state may or may not represent the public interest. For example, the democratic state attempts to represent most fully the public interest, as in the American Republic where the Constitution creates "room" for the representation of the public interest. It does this by recognizing and safeguarding a variety of "forae": the Congress, the Courts, the Press—where the public interest can appear. Nevertheless, the public realm is more than the State since it includes all possible modes of association, whether organized or spontaneous, and not simply association for the legal exercise of violence. The public realm cannot be confined to a particular privileged perspective; it transcends the particular institutions, such as the State, which may nonetheless be devised to represent it.<sup>6</sup>

In addition to these political considerations, Arendt's analysis of the public domain also has distinct epistemological implications; it is a way of knowing. To Arendt, the term public

... means, first, that everything that appears in public can be seen and heard by everybody and has the widest possible publicity. For us, appearance, something that is seen and heard by others as well as ourselves, constitutes reality.<sup>7</sup>

In asserting the primacy of appearance as the grounds for the objectivity of the public world, Arendt consciously acknowledges a *materialist* epistemology.<sup>8</sup> Arendt's epistemology is materialist, but it is not empiricist. It is materialist because it presupposes the existence of a material context that preexists our entering the world and remains after our leaving it. Yet it is not empiricist because it does not presume that the cognition of this material framework is given and self-evident; in other words, Arendt does not regard observation as a guarantee of truth. In this sense, her position can be best characterized as a critical materialist. This is evident

from the second part of her definition of public:

Second, the term 'public' signifies the world itself, in so far as it is common to all of us and distinguished from our privately owned place in it. This world, however, is not identified with the earth or with nature, . . . It is related rather to the human artifact, the fabrication of human hands, as well as to affairs which go on among those who inhabit the man-made world together.<sup>9</sup>

Arendt recognizes this common world as a human construct, hence the significance of the human artifact and human action in the active construction of the public world.<sup>10</sup> As a human construct, the public world is manifest in and mediated by culturally established conventions and language; it is neither natural nor universal. It is a hard won achievement. As a result, the structure of the public world is also inherently fragile, requiring nurture and protection.

By stressing the status of the public realm as a human achievement, Arendt avoids the naturalistic fallacy which naively presupposes an original "human-nature" capable of immediate, self-evident, direct perception and cognition of the world: rather, understanding of the world requires conceptual frameworks which are a product of human activity. Ideas are not given in Platonic plenitude, they are created, and they are created in a physical medium, language.<sup>11</sup>

While the public world is a human construct, it is not merely constituted subjectively by sharing private feelings. Rather, as Hanna Arendt states:

. . . the reality of the public realm relies on the simultaneous presence of innumerable perspectives and aspects for which no common measurements or denominator can ever

be devised. . . only where things can be seen by many in a variety of aspects without changing their identity, so that those who are gathered around them know they see sameness in utter diversity, can worldly reality truly and reliably appear.<sup>12</sup>

The objectivity of the public realm is grounded in the material existence of the world, and the shared yet plural perceptions of the world by the individuals who make up the public realm.<sup>13</sup> Objectivity is not a privileged focus of ultimate truth or knowledge, but a function of discourse and human action. The world is objective since it is shared, yet our knowledge of it is partial by necessity, dependent on our vantage point, and hence fallible.

Since the objectivity of the public world is an effect of a multiplicity of perspectives and our knowledge of it inherently fallible,<sup>14</sup> our understanding of the public world needs to remain open to reinterpretation and reformulation to allow room for better, alternative interpretations. Yet, to remain comprehensible our understanding also needs the support of language conventions which are widely shared and carry stable meanings. There is thus a dual demand for (1) ambiguity which remains open to the world and subject to reinterpretation and for (2) consistency and permanence to allow for communication among participants of their various perspectives. This dual demand is met by what Arendt calls "tradition." She writes:

Only the existence of a public realm and the world's subsequent transformation into a community of things which gathers men together and relates them to each other depends entirely on permanence. If the world is to contain a public space, it cannot be erected for one generation and planned for the living only; it must transcend the life-span of mortal men.<sup>15</sup>

Tradition provides a sense of communion with previous generations, an enlarged perspective which gives depth to our lives since without memory our lives would be shallow and meaningless. To obliterate the continuity provided by tradition threatens the sense of fulfillment in one's life, the sense that we too can contribute to the public world, as our forebears did. Furthermore, and more ominously, since the objectivity of the public domain is inextricably bound to its permanence, public life itself is threatened by obliteration of the sense of temporal and spatial continuity provided by tradition.

To summarize the argument to this point: according to Hanna Arendt, the public realm is a material, human construct, which is constituted objectively through a plurality of more or less fallible perspectives which require the flexibility, coherence, and permanence provided by tradition.

Let us examine the implications these considerations could have for the task of urban design.

Hanna Arendt's assertion of the primal role of appearance as the materialist basis for cognition underscores the importance of design as an activity, since design is the act of shaping the world of appearance to create our common public world. Design is concerned with the organization of the world of appearance; this is its prerogative and the source of its meaning. From the perspective of this materialist epistemology, the common condemnation of design as an irrelevant indulgence is exposed as an idealist prejudice, based on suspicions of the sensuous, material framework constituting the public world.

To assert the material basis of the public realm and its status as a human construct seems logical when we recognize that the setting of the public realm is the city, its streets and squares, and the city is a cultural product, a human artifact. From this perspective, we can criticize an important assumption of the Modern Movement: the belief in the cognitive primacy of "primary" colors and "elementary" Platonic shapes as constituting a natural, self-evident and universal language.<sup>16</sup> This naturalistic fallacy supported the pretension to an internationally valid form of building, oblivious to cultural, historical, even climatic differences. It also served to justify their anti-urban bias; from the perspective of an ideal "natural" city, historic cities were condemned as irrational products of cultural circumstances and historical vicissitudes rather than natural necessity, and on this ground they demanded a clean slate, a *tabula rasa* as a precondition to the rebuilding of new cities.<sup>17</sup> This condemnation of historic cities is fallacious since the notion of an ideal "natural" city is an oxymoron, since the city is an artificial construct.

To Hanna Arendt, the objectivity of the public world is an effect of the simultaneous plurality of perspectives that constitute it. The existence of this irreducible multiplicity of perspectives implies for us that there are different modes of perceiving and understanding the same urban setting. These differing modes of cognition depend on the range of available conceptual schemas, and these vary on the basis of purpose, education, age, cultural background, and so on . . . .<sup>18</sup> For a designer, it is worthwhile to acknowledge various relevant alternative frames of reference since it increases the depth of understanding of the phenomena under consideration.

There are different modes of shaping and articulating the public world in different cultures and different time periods. These various traditions of shaping public space have contributed human achievements worthy of appreciation and emulation. This cosmopolitan outlook presupposes the value of various cultural achievements, in their own time and space, and embraces them as part of our common human heritage. This heritage is not conceived in parochial terms, as confined to the local immediate places, but as encompassing the whole of human achievements.

There are different solutions for different contexts. The spatial definition of the public domain is subject to a range of local constraints: site peculiarities, climatic conditions, property boundaries, cultural rituals, historical coincidences—in short, a whole range of unique or highly specific circumstances. As a result, the specific urban space or artifact may or may not be capable of translation or transformation to a different context. (Think of the London Bridge in the Arizona desert). Thus, while we are right in treasuring the plurality of cultural achievements, as designers we should exercise careful judgement and discretion when using specific objects as precedents to address the specific local circumstances confronting the task at hand.

Finally, to Arendt the public domain is a human construct that requires permanence and continuity.

The sense of tradition, of continuity and permanence in the public domain, is embodied in a very concrete fashion in the city, in its streets and squares, in its neighborhoods. These also constitute a repository of experience, of concrete lessons for present and future use. In this way, previous achievements can serve as examples for subsequent generations: they can thus function as precedents, models, paradigms. We need precedents to translate the widely held cultural values (*Weltanschauung*) constituting the public domain into the built environment. Without this normative role of historical precedents, we might



not have a coherent public world to share.

To assume responsibility for the continuity and coherence of our common public world leads us to recognize that the goal of design is not novelty per se but contextual fit. Contextual fit is the responsible intervention of the new into the older existing world. It also entails a responsibility for creating room for present and future needs, which demand change and transformation.

Tradition is necessary, it does not demand slavish imitation or antiquarian veneration. To contribute to the public world in our own terms while doing justice to the value of the parts requires a process of criticism, adaptation, and reinterpretation of historical precedents to fit the local circumstances confronting the task at hand.

It is from this perspective of the need for tradition and contextual coherence that we can criticize the Modern Movement's call for a clean slate, a *tabula rasa*, as profoundly fallacious. As we discussed before, this call for a *tabula rasa* is informed by the naturalistic fallacy. Furthermore, such a demand for a *tabula rasa* as a precondition for building the humane city would result in the utter destruction of the objectivity of the public world which depends on permanence and the multiplicity of perspectives provided by different generations. The prospect that each generation would undertake to refashion anew the structure of the public domain amounts to a nightmarish vision of constant destruction and reconstruction, like living in the eternal construction site; it would be the architectonic myth of Sisyphus.

So far we have been discussing Arendt's definition of the public realm and its implications for the task of design. Yet, design is not only a problem of cognition, understanding, and interpretation, it is a mode of action, of shaping the world. As urban designers, we want not only to understand the characteristics of the public domain, we want to shape it. To do so, I believe that our task is to design and build streets and squares as distinct public rooms, as positive places open to a multiplicity of human purposes. Let us examine then, what we mean by public rooms.

What is important to the public realm, . . . is not the more or less enterprising spirit of private businessmen but the fences around the houses and gardens of citizens.<sup>89</sup>

Walls and fences "elate and separate" the inside and outside, the private and the public. Without walls articulating the differences between the two domains, both are threatened, since "there could be

no free public realm without a proper establishment and protection of privacy" (and vice versa).

Walls and facades are not simply a line, a boundary. Rather, they constitute a zone that both joins and separates inside and outside, public and private, and provide the transition between the two domains. It is a three-dimensional reality that can be defined by a whole range of devices: arcades, porches, galleries, loggias, balconies, stoops, entrances, bay windows, terraces, fences, ha-has. As the names indicate, these devices are inventions from various building traditions, underscoring the plurality of ways of defining the public and private domain available at different times and different cultures.

It is from this perspective that we can criticize the Modern Movement's attempt to obliterate the distinction between the inside and the outside as perhaps well-intended but profoundly misguided, since by so doing they also obliterated the distinction of the public and the private realms, and thus threatened both, with ominous consequences. This attempt to obliterate significant distinctions which were culturally developed with great variety and nuances succeeded in undermining the sense of civility and urbanity.<sup>21</sup>

The importance of walls as human-created boundaries transcend their role as the divider of the public and private realms; walls are also important because they create something in its own right, namely rooms. An interior room is defined by walls, the floor below, the ceiling above; yet a room is more than the sum of walls, floors, ceilings; it is an enclosed space, and more importantly, a place. Streets and squares, like a room, are also enclosed spaces. They are outdoor public rooms, defined by the facades of the adjacent buildings, the pavement below, the sky above.

Because the room has a shape, it is a figure, a positive condition which stands out relative to its enclosing framework.<sup>22</sup> A street, like any room, is also defined by walls, by facades. If the walls are continuous, we have a completely defined figural space. This is most evident in traditional European cities: in Paris, in London, in St. Petersburg, and sometimes in older downtowns of American cities. More typical in America, the street is defined by a discontinuous wall created by detached buildings. This discontinuous wall creates an implied figural space. When the space of the street is defined implicitly by a discontinuous wall, one has to construct an imaginary wall in the mind's eye to fill-in the blank and complete the enclosure. This is easier to conceive if the buildings have the same setback from the street. Spatial definition can also be strengthened by controlling

the space between buildings, the intervals of the street "wall" by creating a rhythmic pattern of solid and void. In residential streets, the enclosure of the street as a room is also reinforced by the trees lining up the street, creating the effect of an arcade. The implied definition of American streets results in a spatial order so tenuous, so fragile, that the main task is to strengthen it, rather than undermine it, by searching for effects. If buildings have different setbacks, different scales, and different heights, the street cannot be understood as a room, as a definite place; and the result is often chaos.

This distinction between implicit and explicit spatial definition is not absolute; they represent two poles in a continuum: from most explicit definition as the most urban, to the least explicit or implicit definition as a sub-urban or even rural condition. Different cultures, at different locations, different times, and for different reasons, have selected one end or the other of this continuum. For instance, medieval and even Renaissance cities in Europe were walled and tended to build up density, thus creating continuous boundaries framing the public domain. American cities have generally been opened and have had lower densities, and given this settlement pattern, there has been a cultural preference for a "sub-urban" level of spatial enclosure, a preference for implied boundaries between the public and the private domain. Furthermore, even within a particular city there might be instances of both types of levels of enclosure (i.e., downtown vs. surrounding neighborhoods in many Midwestern cities of the U.S.).

The degree of physical enclosure can be strengthened by controlling the street profile, which implies a ceiling to the public room. For example, if the street has a continuous cornice line, one can project an imaginary ceiling spanning the area and thus enclose the space. If the cornice line is broken by roofs, parapets, and so on, it is still possible to have implied closure provided that the differences are properly modulated. The character of the street profile is a product of cultural preferences and requirements (like climate). This is evident in comparing the profile of Amsterdam and Rome, or New York. While a designer might have some leeway in the choice of street profile, concern for the coherence of the overall public domain should provide an inducement to proceed with care and caution if one has the opportunity to do so.

Finally, it is important to recognize that the perception and experience of physical enclosure is not based on absolute size, rather it is qualified by relations of scale. Scale refers to the *relative size* of elements in regards to the whole; it is a *proportional* relation. Gulliver's size did not change in the land

of the giants or the land of the dwarfs; rather, his scale, his relative size, changed with respect to his environment. Scale is important in providing a comprehensible framework of relations between ourselves and our environment. Proportional systems are effective tools to help control and regulate the relationship between different scales of the design. A very large room, like a street, if properly proportioned and balanced, can be quite harmonious. This is also reinforced if there is enough secondary interest to provide an intermediate range of scales between the scale of the street and our scale: in other words, if there is enough articulation at the scale of the building as a whole and at the scale of the building elements. Issues of scale are significant because we do not experience sizes in absolute quantitative terms, but in relative terms with respect to our own human bodies, and this relationship of our own bodies to our environment is not natural and self-evident, but it is mediated by intellectual constructs. For this reason, what the scale of a particular street shall be cannot be determined a priori in a cultural vacuum, since a whole range of variables (i.e., density, land use, zoning restrictions, norms already established in the vicinity, neighborhood aspirations) all have a role to play. As a designer, it is appropriate to synthesize and interpret these factors in light of the larger concern for the coherence of the public realm and articulate concrete proposals as alternatives for consideration.

To conclude, I have argued that streets and squares are public rooms, which are enclosed and spatially defined through walls, facades, fences, and thus make possible the experience and perception of the public realm in a concrete, definite, three-dimensional reality. They provide the setting for public life, its geography and its structure, and through this public role they acquire special significance as cultural artifacts.

Urban design is the act of designing streets, squares, and other public spaces, and therefore, it is entrusted with the purposeful shaping of the public realm. We have argued for the importance of this special trust on epistemological grounds, by reflecting upon Hanna Arendt's position on public life. Yet as we saw at the start of these reflections, Hanna Arendt's position has both epistemological and *political* dimensions. For Arendt, the public realm is constituted through political action and for political life. If, as I have argued throughout this essay, the spatial representation of the public realm is the main responsibility of urban design as a Civic Art, then urban design is inescapably also a political act. To ignore the political dimension of urban design would be naive, and maybe even dangerous, since the denial of the reality of political power can encourage

seductive fantasies of total design, which demand total power and total control.

Perhaps this association of urban design and authoritarian politics has encouraged popular suspicions of urban design in America. Thus the irony that, while the American system of democracy, through the Constitution and other institutions, has provided "room" for the political representation of the public interest, yet public opinion in America has also been extremely skeptical, if not outright hostile to, attempts to spatially represent the public interest in the physical structure of the city. While this popular prejudice against urban design is understandable, and perhaps justified, considering the debacle of urban renewal policies in the sixties, it is also a problem, since it supports the kind of inertia that simply allows the public squalor to worsen while public amenities and facilities continue to deteriorate. We need to reintroduce a level of urbanity and civility in our public life, and we can contribute by purposefully giving physical form and shape to the public realm. To assume this responsibility for the public world could be a good place to start.

## Gusevich

### Footnotes

- 1 Hanna Arendt, *The Human Condition*, Chicago and London, U. of Chicago Press, 1958, Chapter II, The Public and the Private Realm.
- 2 "The distinctive trait of the household sphere was that in it men lived together because they were driven by their wants and needs. . . . Natural community in the household therefore was born of necessity, and necessity ruled over all the activities performed in it." *Ibid.*, p. 30.
- 3 "Society is the form in which the fact of mutual dependence for the sake of life and nothing else assumes public significance and where the activities connected with sheer survival are permitted to appear in public? . . . The social realm (is) where the life process has established its own public domain." *Ibid.*, p. 30.
- 4 *Ibid.*, p. 46.
- 5 This distinction between labor and action, the social and the public is at the core of Arendt's critique of Marx, developed in more detail in Chapter III, Labor, in *The Human Condition*.
- 6 The distinction between the public and the State is implicitly a critique of Hegel's definition of

civil society, which fails to differentiate the two.

7 *The Human Condition*, p. 60.

8 This materialist epistemology was developed in her last work, *The Life of the Mind*. Unlike her political distinction between "labor" and "action" mentioned above, Arendt's critical materialism is not at odds with Marx's epistemology. See *The Life of the Mind*, New York, Harcourt Brace Jovanovich 1978.

9 *The Human Condition*, p. 52.

10 Cf. Karl Marx, *The German Ideology and Theses on Feuerbach*, New York, International Publishers, 1970, ed. C. J. Arthur. Also in *The Marx-Engels Reader*, New York, Norton, 1972, ed. R. C. Tucker.

11 See Marx, *The German Ideology and Theses on Feuerbach*.

12 She adds: ". . . . Under the conditions of a common world, reality is not guaranteed primarily by the 'common nature' of all men who constitute it, but rather by the fact that, differences of position and the resulting variety of perspectives notwithstanding, everybody is always concerned with the same object." *The Human Condition*, p. 57-58.

13 It would be interesting to compare this pluralistic epistemology with the Marxist critique of ideology.

14 Regarding the question of fallibility, it would be interesting to compare Arendt's and Popper's epistemology and political philosophy. See Karl Popper, *The Open Society and Its Enemies*, Princeton U. Press, 1962; *The Logic of Scientific Discovery*, New York, Basic Books, 1959; *Conjectures and Refutations*, New York, Basic Books, 1962. See also, Hanna Arendt, *On Revolution*, New York, Viking Press, 1965 and *On Violence*, New York, Harcourt, Brace and World, 1970.

15 *The Human Condition*, p. 55.

16 For instance, see Charles E. Jeanneret, (Le Corbusier) *Vers une Architecture*, Paris, 1923 (Towards a New Architecture).

17 For instance, see Le Corbusier, *Urbanism*, Paris, 1925 (The City of Tomorrow and its Planning); *Le Ville Radieuse*, Paris, 1935 (The Radiant City); *Quand les Cathedraux Etaient Blanches*, Paris, 1937 (When the Cathedrals Were White).

18 See Roger Downs and David Stea, *Maps in Minds: Reflections on Cognitive Mapping*, New York, Harper and Row, 1977.

19 *The Human Condition*, p. 72.

20 *Ibid.*, p. 63-64.

21 This refers to the well-known discussion of the need for boundaries and thresholds between the public and private domain in Oscar Newman, *Defensible Space*, New York, Macmillan, 1972.

22 See Steve Peterson, "Space and Anti-Space," *The Harvard Architectural Review*, vol. 1, Spring 1980, Cambridge, Mass., The MIT Press, p. 91.



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# Inquiry Through Design— Statement of the Attitude

Wojciech G.  
Lesnikowski

Inquiry through design should be considered first in the context of fundamental theoretical issues related to the creative processes of architecture and urban design. By theoretical issues, we mean certain highly specific theories of architectural and urban design as they have progressively developed across history. A theory of architecture or urban design means, in reality, a specific set of conceptual rules and principles that are formally codified to assure a high degree of design correctness in response to the surrounding sociopolitical, technological, or aesthetic influence that is external to the context of architecture. Therefore, a theory of architecture or urban design is a synthetic attitude towards physical aspects and nonphysical aspects of the built environment as it deals with holistic, integrative, compositional concepts of architecture or urban design.

Historically, a theory of architecture and urban design has meant a theory of the fundamentals of architectural composition and form that were adjusted to the programmatic requirements of function or technology. Although conceptual theories of architecture changed continually through history (such as Gothic, Renaissance, Baroque, Neo-Classicism, Functionalism, and so on), they have changed their nature on the grounds of the conceptual *block theories* that followed the development of the blocks of sociopolitical cultures. Across the centuries we can observe a tight integration between architectural creative activities and sociopolitical and technological movements. Without much exaggeration, one could claim that individualists, who were narrow in the sense of conceptual interpretative inquiries into the nature of architecture and its sociopolitical background, did not exist prior to the Industrial Revolution.

Historical theories of architecture and urban design were based on the principles of natural organic integration of architectural ideals and sociopolitical ideals that were stressed in teachings of the greatest

past theoreticians of architecture, such as Blondel, Durand, Gaudet, Viollet-le-Duc, or Choisy. Each theoretical concept of architecture, despite its cyclical development and creative fluctuation, was based upon synthetic sets of values that corresponded with the nature of their physical and human context. One could say further that if creative pluralism ever existed across history, it existed only as the set of variations on the principal themes of a given block theory. In such *tempered pluralism*, we discover the strength and greatness of historical concepts—their comprehensive principles and clarity—and the reasons for their longevity.

Nevertheless, the result was highly symbolic in the sociopolitical sense. The apolitical character of historical architecture and apolitical preoccupations of architects was the result of natural, conceptually single-minded relationships between conceptions of clients, architects, and the art. The most profound nature of various cultures was naturally reflected in the conceptual characteristics of their architecture and urban design. Modern times brought radical changes to such direct and organic relationships. First, architecture was turned into political weaponry by the architects who were involved in modern political ideologies. Later there was an attempt to turn architecture and urban design into the terrain of sociopolitical studies by people who were often only remotely associated with the profession. Modern architecture was created either out of an extremist leftist political orientation or out of a willingness to uphold the ideological programs of various totalitarian regimes of the extreme right. The result was a highly politicized architecture that professed theories of culture which advocated either radical egalitarian or radical elitist conceptions. Both forms of architecture were outlined with great theoretical clarity and existed until the midperiod of this century, but on parallel conflicting paths.

As a consequence of political and conceptual disen-

chantment with such extreme architectural conceptualizations, various sociological concepts emerged that attempted to introduce a variety of sociobehavioral theorems into the fields of architecture and urban design. Architects and urban designers were asked to embrace the idea of sociological programming and research first. Thus, there was an attempt to replace traditional, synthetic, physical, form-oriented subjects of creative architectural design with literary, verbal programming—often in complete contempt of the traditional goals of creative architecture. Nonphysical aspects of design inquiries dominated physical ones. As a result, theoretical inquiry into the nature of architectural design was divided into numerous narrow disciplines that were categorized as different conceptual approaches—ranging from those traditionally called formalism to purely sociological ones. As far as the teaching of architecture and urban design was concerned, this brought about nonintegrative, nonhierarchical, selective attitudes. Dividing the field of design inquiry into parallel, seldom interconnected tracks in the absence of a structured, comprehensive understanding of the creative, architectonic, and professional obligations and tasks led to a general confusion of purposes. Finally, creative standards were lowered. Two decades ago, the fields of architecture and urban design appeared to be suspended somewhere between the realms of the social sciences, anthropology, economics, and history. Ultimately, this affected their theories of correctly built form.

It is not surprising that this condition caused violent, often dogmatic reaction from the traditional formal positions within architectural design circles and resulted in what we refer to today as Post-Modernism, the latest architectural movement. Post-Modernism, in its attempt to recapture some lost and sound lessons from the history of architecture, declared that a theory of architecture or urban design could be safely detached from other considerations, such as

sociological ones, which failed to advance any useful, sound theoretical basis for novel design production. Although Post-Modernism can certainly be credited with many inventive and energetic works, its frequently detached attitude of extreme formalism makes one wonder if it is equally capable of assuring lasting and sound—yet widely adaptable—theoretical principles for broad professional use. As a result, we observe two sides taking conceptual positions on the subject of inquiry through design: one which wishes to create solid, even dogmatic, architectural and urban design rules to which many present day designers adhere; the other, often of nonprofessionals, which prefers to see only a few tangible principles in the hopes of keeping the profession open to all sorts of inputs and investigations.

Because architecture is a practical profession, it requires a highly synthetic attitude towards teaching and practice. A frequent mistake made in schools of architecture is that architectural inquiries are undertaken with too much attention given to analysis—at the expense of final, positive, creative professional statements. The very essence of architecture and urban planning is to respond not only to temporary, functionalist factors but also to permanent, idealistic concerns—often in conflict with established customs and routines. The final synthetic creative act of design conceptualization can contradict analytical, practical findings while fulfilling the obligations of architectural creative excellence and cultural presence and longevity. Thus, the essential task of every design inquiry through studying a theory of architecture must be to create an ambitious, exemplary set of criteria—formal, technological, and functional. Such criteria can only be created if practical, programmatic requirements are measured against creative architectural ideals as they have existed through history. Such ideals encompass the principles of correct composition and descriptive geometry, of correct aesthetics and of symbolic meaning to which temporary, functionalist concerns must be subordi-

nated. Is this not the creative dilemma of every particular design activity?

The outcome of every correct inquiry through design must be a *synthetic conclusion* that the field of design is limited to a certain specific "correct" set of answers that existed once and still exists today. Theory of architecture, if studied as the field of architectural typologies, supports this argument. Against these typologies, we measure the fluid sociopolitical context to assure creative architectural stability and comprehension of the tools, duties, and obligations of design. We can therefore make steady progress towards architectural novelty without indulgence in unprofessional arbitrariness, and achieve theoretical, highly individualistic endeavors as well.





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# The Studio as Workplace: Architecture from Friday to Monday

Barry Newton

Architecture, then, interpenetrates building, not for satisfaction of the simple needs of the body, but the complex ones of the intellect. I do not mean that we can thus distinguish between architecture and building, in those qualities in which they meet and overlap, but that in the sum and polarity of them all; these point to the response of future thought, those to the satisfaction of present need. (W.R. Lethaby, 1891)<sup>1</sup>

The move of a studio from one institution—a School of Art and Building—to a Technical University is the background for the interpretation of cultural themes, interwoven by the constant renewal of the working day and the fabric and form of the two buildings in which the studio is located.

## Prologue

### *An Expansion*

#### **The Workplace**

The workplace for architectural production is the drawing office, for education it is the studio; and these workplaces for design are already distant from the building site. The studio has its own skills of drawing and criticism and these activities require minimal conditions for practice; they are always present: light, a flat surface, the drawing tools, the desire to work. The daily circumstances are accomplished no matter how incomplete the environment. The forms of this describable environment become subject matter for both inhabitation and design. It is the place for the transmission of knowledge.

#### **Its History**

The learning of architectural design has varied considerably in the past; it is important therefore to recognize that the present configuration shares constants with some historical practice and has forms

of its own making. It can be seen that many of the present limits to the workplace have developed from essentially late 19th century practice.

First, the labeling “studio” reflects the notion of active architectural design. Presumptions are made about social context that relate to that of artist’s studios, though of course for the painter or sculptor it is the place of production, for the architect the place of anticipation. Second, the dominance of the drawing table defines the professional presumptions of making information available to clients and builders.

The general events are made particular. The first studio (Friday) is in the School of Art and Building, the second studio (Monday) has been assimilated as part of a Department of Architecture in the Technical University. This administrative device leaves the studio and personnel intact; work, on the design project, continues—place is changed over time.

#### **Of Daily Life**

The middle ground of tangible experience shifts; new exchanges and transformations are made between the worlds of Friday and Monday. Through the narrative of daily renewal—arrival, work, the drawing table, the view from the window—the poetic dimension with its didactic and pedagogic possibilities is revealed at various levels of complexity, as the two worlds of reality and imagination merge on the surface of the drawing table.

The descriptions are specific, but not over-elaborate, because important in the choice of this subject is that we are all familiar with this workplace.

The activities of the day, arrival, work, departure, meet with the forms of the two institutions. The public ideological realm of the city and the profession give way over their threshold to architecture. Then to the school, the semi-public sociological do-

main of exchange, and further over the next threshold to the private activities of the studio. Then finally to the surface of the drawing table, where the past is transformed and resolved into the future. Precedent and imagination are joined, as work renews and then brings creative pleasure to daily life.

## **Friday. The School**

### *Describing*

#### **Arrival**

On the corner, there are apartments above the storefronts that abut the main road. As the street goes north, three- and four-story houses form solid edges. The plane trees that line the road are renewing their bark. The school does not intrude, but the entrance is first indicated by the wrought iron arch over the low street-edge wall. Up two steps, the timber door opens into a small lobby with views through a glazed screen west into the courtyard. The deep staircase treads are cast in place—smooth, polished concrete. The edges are mediated by an iron ballister and on the other side a soldier course of thick, squarish bricks, stepped and incised against the precise ashlar. There is a continuous rhythmic hammering from the workshop.

#### **Working. 1. Drawing**

The desk is old and the stool anticipated one higher, so the under-desk drawer is to one side on two tall boxes, both library and throw-off space. There are only seven other desks in the small basement room, each with its pool of light from the clamp-on lamp. The view to the nearest window takes in the door and the unused fireplace. Outside, a small flight of narrow steps rises steeply to the sidewalk, and the view through the railings is of passing feet and the damp yellow leaves from the tree.

#### **Eating**

The walk to the market, under and adjacent to the

railway arches, takes only a few minutes, and although the purpose is pie and chips for lunch, cheap rolls of tracing paper are purchased. A train rumbles overhead. The market itself, variously sheltered and adapted to this place, is busy; but back in the yard within the school, it is sheltered and quiet. Eating is done beside the blocks of concrete from the slum-tests, reluctantly practiced at 8:30 the previous morning. Across from the moth-eaten trees some rusty metal and the glimpse of bright red steel in the sculpture studio. In the other corner, by the back entrance, some people are talking.

#### **Working. 2. Talking**

Some people are talking, turned inwards between some drawing tables, looking at a model on a low stool. An angled light shines down: it represents the sun. They crouch around and look in. The light also comes from a large, square window striking the model obliquely. This hardly competes with the artificial sun however, as the small panes are dirty, and the entering light is poorly reflected from a white-painted brick wall. The sound of rain on the glass coincides with the diminishing light, so more lamps are turned on.

#### **Leaving**

The building has three main bays of skylit studio lofts towards the street. The entrance is asymmetrically placed and divides the composition. Stone facings define the parapet, window head and sill, though the grime of the brickwork diminishes the intended modulation. The U-shaped plan which begins to enclose the court has been extended and completed by the newer workshops to the rear of the site. The two Victorian townhouses to the north have been incorporated as offices since then and are dark and unlit. On the street corner the traffic is heavy, and light comes from the window of the newspaper shop while people wait for buses to go home.

## The Weekend. The Palm House

### Arriving

#### The Lake - Reflecting

Inside the high wall of the Botanical Gardens, the main path leads through the trees to the formal lake. On the wind-broken surface is reflected the Palm House, which is axially composed and bulbous, the shiny pattern of green glass and glazing bars making the form insubstantial. The surface of the building deconstructs the sky in its own reflections. The sky, the building, the water, their surfaces fused in the reflections, take apart the actual and the imagined. Discriminating elemental events are recombined in the interface between liquid and light. These two forces and their substance then sustain all life and further growth. They are incorporated.

#### The World Inside - Illuminating

Across the transparent threshold, the substance of the building is now defined by nature, the needs of humidity and shade. The forms of symbiosis are ever present: in the deep shadow of the floor, on the surface of the earth and in the luminescence of a leaf. These varieties of green darkness draw their substance from this soil and climate as both are constantly renewed. In patches of light, finer definitions are possible: veins of structure, forms for food dispersal, and vivid flowers of reproductive display are co-present. The utility of structure is simultaneous with the evocative forms of propagation. Among these events at regular intervals, there is the base of a cruciform, much repainted, cast-iron column.

Further above, through the growth, is a network of lattice trusses, tie rods, and glazing bars. In this light, ordered in rows within the hothouse, nature becomes botany. The boundaries between the tropic and temperate zones are no longer great distances and mountain ranges, but by a simple act of architecture separated by 1/4-inch of mottled glass.

As the increase in light extends the detail of nature, the dividing consciousness of taxonomy intrudes—petals, sepal, calyx. Nature is deconstructed into elements. The elements—chord, gusset plate, bracket—are reconstructed into trusses and architecture. Botany which divides nature meets architecture which constructs culture. We mediate our lives.

#### Leaving. The Parterre - Ordering

Outside on the generous terrace and steps to the south, the parterre concentrates the view to the tower of the pagoda. A dominant rationale orders nature, so that we may be directed to view the exotic. The new rationalism makes and frames this romantic object—returning across the threshold, the wall, the

green, the street, the bridge over the river. From the highest point in the center of the bridge, there above the laundry and the trees of the embankment, two storeys are seen obliquely of the office tower, horizontal bands of glass and pale-green panels.

## Monday. The University

### Anticipating

#### Arrival

The tower which was expected proves to be invisible from the low angle of the bus window. The bus stops, and from the far side of the street, the tower, which has remained unoccupied for three years as a tax write-off, rises above the street—a small symmetrical feature at the base on the slim north elevation. The steps rise to the glass entrance; above, a slight steel canopy cantilevers to form a porch. Inside, the two elevators are crumpled opposite the janitor's kiosk; they announce their location and arrival by numbered lights above the door and a bell when the doors slide open. Inside the box everyone is silent.

#### Working. 1. Drawing

A new drawing table has a three-drawer flat file to one side and an adjustable chair with a backrest. The view from the seventh floor is over the roofs of the houses to the turn in the river by the bridge and the invisible flight path to the airport. The planes glide past, are obscured by the stair lobby, and seen again further west over the heads of one's colleagues. Further, beyond the horizon to the east, unseen, is the main campus, the sources of the curriculum in departments of sociology and engineering.

#### Eating

At the base of the tower is a small pub. The tables outside are shaded by the slab of the school; the wind encourages packets and paper to form into small whirlwinds. Inside is deliberate artifice. The hunting prints on thin paper are heavily framed. The tables for four seat six to eight at lunchtime; faculty and students perch talking over beer and sandwiches. In the corner some businessmen in shirtsleeves, from the offices up the road, begin a game of darts.

#### Working. 2. Listening

The desks are in rows and act as seats as everyone looks at the chalkboard. The tutor faces the class, and some students hidden behind the two central columns lean forward to see and listen. Building construction: the economic advantages of regular spans, occupancy loading for fire stairs, Georgian-wired glass, sprinkler systems. The view into this building. The content of architecture moves towards the calculable, its physicality mediated by choices

and numbers. The plastic floor tile is scuffed from moving furniture, and a small piece of grill has detached from the base of the perimeter heating. The bright light bounces from the drawing table, is reflected from a cutting-knife handle on to the white metal architrave.

### Leaving

On the north side behind a single row of houses is a small park with some tennis courts, a pond, and play equipment. The tower is seen above the railway viaduct. Only eleven stories high, with cheap metal windows, the building resembles from this location a scene in Antonioni's *Blow-up*. The light glistens on the studio window from which, across the urban freeway and between the river, one can see the back of Kelmscot House, William Morris' London home.

### Afterword

#### *A Compression*

The continuity of work, the drawing table, the task, and its participants diminishes the enormous transition that has actually taken place. The faculty and students have not had to move families, houses, and apartments (this will come later), but the evocation of the studio its attachments to the worlds of belief and ambition are radically altered. Many dimensions are compressed. The narrative circumstances are of the mid-1960s, the educational shift from trade-school to technical university, the emotional renewal from past to future.

### The School

The school, the courtyard and their place in the street, with their materials and their working, speak of the noble traditions of craft and trade, of fine carving, and the hard physical labor of lifting and carving. Distinction of part is united by familiarity of shape and surface. The social organization of teachers and pupils is founded on the act of demonstration, the learning by experience from one who knows; like craft, it renews from its past.

### The Palm House

The Palm House lies poised as craft gives way to industry. Remote from the studio, it illuminates by reflection. The forces of nature and their elaborate manifestations are caged by the taxonomy of botany. The same rationalizations then penetrate through the physics and materials of the building. The scientists and their companion industries renew from the future.

### The University

The University, in this case housed in the emblematic form of property speculation, rises above the pattern

of squares and streets in its local surroundings. The linkages are to realms of knowledge that anticipate the subsequent disengagement of architecture, now drawn to the statistical and scientific. The corporate investment that led to the building now governs, by example, the corporate university. It does not renew, it decays.

### Footnote

1 W. R. Lethaby, *Architecture, Mysticism and Myth*, London, 1891, pp. 1-2.

# The Use of Narratives in the Design Studio

J. Stephen Weeks

## Foreword

Studios that emphasize a “live” project on a real site assume that students learn best when developing solutions. Traditional studios consistently use the problem-solving model because of its familiar kinship with professional practice. Students, like staff architects, who are given design briefs that firmly quantify spaces and summarize purposes, are urged to acquire creative techniques for translating directives into form while honing the skills of production. The student learns ways of solving *that* problem for *that* site: accumulating skills and attitudes for conceptualizing, development, representation, and communication probably useful—and certainly transferable—to the next more complex problem.

If it is assumed that design studio can shift away from problem solving because of its limitations and associated over-emphasis on the reduction of functional requirements or the application of technical expertise and the use of abstract expressive systems, students must be given opportunities to also explore and question the value of Purpose while being introduced to the notion of Meaning and the dual role each plays in the act of creating architecture. These concerns, the transfer of a previous fascination with “space” into the making of “rooms” or “place,” of transforming explicit functional requirements into implications for design, and shaping intentions into architectural form, represent the direction of a studio whose major question is “What distinguishes architecture from building?”

## Studio Intentions

If problem solving can be defined as an either-or proposition in which the studio excludes possibilities, efforts seem geared to managing, organizing, and reducing issues to achieve the problem’s resolution. Criteria are typically utility, practicality, function, circulation, and workability. But if architecture is to be conceived or emerge in the studio, the student must be given opportunity to speculate on what it is. Sev-

eral premises for architecture’s existence suggest the following: that it must have the capacity to transform both the abstract and the obvious, the sensuous and the pragmatic, illusion and utility, into a proposition which recognizes unique cultural traditions and physical context; that architecture consists of the expressive architectural elements of plane, column, window, roof, door, wall; that architectural form emerges from a dialogue between history, building types, the circumstances of the site, the particulars of the program, and idealized rules of composition, order, and hierarchy; that architecture evolves from multivalent hypotheses; that architecture gives meaning and identity to our existence in space and time; that architecture is the conceiving of place defined by the enclosing form rather than by space *per se*.

Design, on the other hand, is the creation of meaning and its translation into physical form. While design is central to the synthesis for architecture to exist, it is an oversimplification to reduce architecture to merely a question of design capacity for the issues and parameters are too complex. Although architecture is conceived, created, and executed as a process, it is not problem solving. Because architecture has the capacity to demonstrate the richness of human experience, it represents inclusive themes, or the “both-and” instead of the “either-or” framework associated with problem-solving formatted studios. Design as synthesis towards an architecture must then also be seen as inclusive: both symbolic and functional, separated and linked, rational and intuitive, theory and practice, dogmatic and polemical, obvious and synthetic, thick and thin, and so on. This condition must exist if the studio is to operate in an explorative mode.

When the studio is the place for inquiry, it permits each student of architecture to conduct investigations into such primal questions as: What should the role of symbolic meaning be and for whom (why)



*Entry Study*

does it exist? How should technologic invention be evaluated in the context of designing structures/buildings/architecture? Does technology have the capacity to sustain meaning or is it just a symbolic illusion? What influences the use of particular compositional formal principles in the shaping of architectural form? To what extent are user requirements influential in determining order, structure, and meaning? Implied in these questions is a search for basic underlying design principles and the means to sustain these emerging theoretical positions or values. The mission of the explorative studio is to introduce design as the investigation of meaning and its influence on architectural form, to establish design as a process of inquiry and exploration, and to provide new tools for complementing the pursuit. The hope is to not only shift but expand student satisfaction with skills development to one of questioning, translation, and evaluation.

The investigative methods used in the studio to address the difficult question "What is architecture?" are formulated from a recognized dependency on the power of the written word to describe circumstance, context, and purpose and its capacity as text to evoke imagery either as analogies or metaphors for human ideals, while also implying values, setting, and feelings. A descriptive narrative can substitute for the conventional design program, removing the student from the quantifiable baggage that indicates "plan" and "site" as the first and major issues to be addressed. Instead, it provides enough freedom for the student to investigate setting and socially complex concerns referenced by the text while also stressing the interrelationship between abstract design principles, technology, and representational techniques in the production of architectural form.

The narrative is always coupled with some means to uncover the assigned issue, either as tools for the exploration or as techniques for understanding the

issue from several alternative viewpoints. For example, while the study model may be the tool for exploration of an issue, say of Entry or Passage, looking at historical examples or a previous design problem also in model form, supplements and reinforces both the exploration and the role and use of the tool. The study model remains the means for exploration but not an end in itself, even though the model does represent a suggestion of an arrived-at solution. Written and diagrammatic explanations, transforming the study model into sketch and axonometric drawings, can be used to describe and evaluate the implicit explorations.

The study-model as a tool also has the distinct advantage of simultaneously being both implicit and explicit while illustrating the close relationship that exists between plan and section, elevation and material, structure and opening. The manner in which model materials are cut, torn, located, and assembled affects perceptions and attitudes towards joints, form, expression, and interpretation. Layering thin, long, jagged-edged strips of paper can build up a wall, define its openings, or suggest horizontal and vertical hierarchy in a more inventive, explorative manner than just cutting the wall out of a singular-dimension stiff material. By using model materials of differing textures, dimensions, or properties, the student can quickly discover ways to represent the duality that exists in architecture, such as collaging scrims or soft tissues to imply massive but thin walls. The material itself suggests new ways to think about an issue, both conceptually and formally, particularly since the model simultaneously represents the questions, the decisions, and the resolution.

The studio is structured into three phases of exploration. The first is designed to introduce the student to the value of exploration as distinct from problem solving while simultaneously encouraging the use of study models as a sketching tool by exploring the issue of Entry and Passage from one environment to another. The second phase introduces the value of analysis and examination as an investigation into meaningful ways in which architecture has been produced by completing a Dissection, in model form, of a significant work of architecture. These first two phases establish probable vocabularies, issues, and the range of tools useful in the third phase, the Narrative text, which represents the traditional design problem statement. The Narrative implicitly suggests a program while explicitly exploring in model form the unspecified issues associated with Place, Structure, Envelope, and Order. These synthesis phases provide coherency to the inquiry by eventually bringing the separate exercises towards the difficult whole, in effect testing the question "What distinguishes architecture from building?"

The narrative not only introduces the student to new requirements and human activities, but adjusts the intentions to purposefully encourage the use of new thinking or creative tools, such as metaphor and analogy, as well as the model. Essential architectural elements, such as the window, wall, door, porch, garden, and street, are reconsidered each time within the framework of the larger concern for making a building—its rooms, order, skin, and structure.

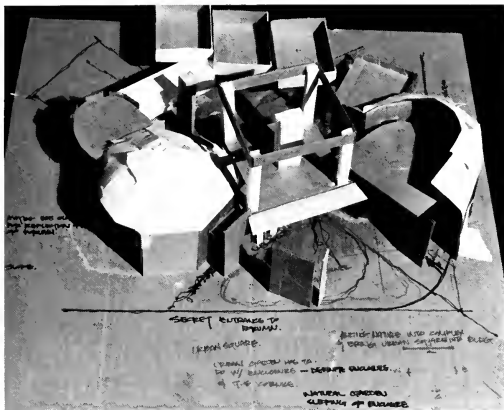
### **Entry**

Students begin the studio explorations by investigating how entry is accomplished as a meaningful experience, using the architectural elements. Each student begins the project by examining preconceptions as written descriptions of entry as event at a wall of 24 x 24 foot minimum dimensions, as passage and penetration, separated and linked, inside and outside. These written briefs are explored in short modeling drills, using torn materials to uncover elementary issues, sets, or patterns of issues, using one, at first, or more architectural elements—the wall, window, door, column, overhead plane, and so forth. Exploring in model form in this additive way provides new departure points for further discussion. The lack of program, context, and descriptive specificity requires the student to examine the why and how of known solutions, encouraging proposition and exploration. The technique of the quick model further reinforces exploring how to translate intention to form because it rapidly, more than drawing, recognizes the useful relationship that exists between rational thinking about symbols, assembly, gravity, and technics, as well as intuitive thinking about allusions, symbol, or primal spaces. What emerges is a distilled, uncompromised, abstraction of the elemental and complex issues that impact the making of buildings as event.

### **Dissection**

By looking at significant works of architecture, the dissection requires the student to understand both the role of form and order in the production of architecture while uncovering the ideas that generated the solution as conceptual models. Significant historical examples that have been well-researched and recognized as traditional, culturally based ways of producing form, are used as vehicles to convey the separate primary importance of the client-designer's intentions, and particular circumstances of the context in which the building was produced. Two-student teams assess the typological aspects, the conceptual formulations, the functional program, the use of symbolic means, and so on, in model and drawing form. These are presented to fellow students and posted in the studio for reference and further discovery.





Narrative

Examining buildings purely for their architectural content, i.e., the formal compositional orders, environmental features, or structural skeleton, exceeds observation and analysis while uncovering the underlying issues. The intention of dissection is to understand the relationship of the given object to its situation in time and place; to associate the complex social models with their capacity to be transformed to built form; to reflect on the production of architecture; to see what directly affected the form—social, economic, political, or technological forces; to interpret the use of design orders such as symmetry—is it defining authority/power or just orientation, organizing the plan; to discover what human values the architect brings to the programmatic requirements of a building—place vs. space; to elaborate on the evolution of a building type over several historical periods in response to change; and so forth. The dissection isolates primary architectural influences and elements for their separate meanings as well as measures their impact on the process of design. These issues are revealed as propositions useful for further exploration: (1) How is entry and movement accomplished? (2) What is the relationship between environment—the site, slope, context—and architecture? (3) What are the relationships between functional elements and their distribution within the structure? (4) How is purpose and form configured? (5) How is order achieved in plan, section, elevation—symmetry, repetition, ornament? (6) How does the opening convey understanding of organization and room? These questions establish a reference for the process of inquiry in the next, narrative phase.

### Narrative

As defined here, narrative is less a story and more a fictional, almost anecdotal, description of conspicuously architectural places bound together by circumstances and purpose. The participants-clients are provided some familiarity by their generalized professional characteristics and endeavor, but they may be estranged by their lack of individual personality. Acting as a design brief, the student is charged with marrying perceptions and interpretations of the implied program to appropriate imagery. The collective will of the client alludes to essential places to facilitate the purpose of the group, in this case the "Cartouche," a club for critical, but optimistic architects. The student is also urged to assume a specific approach for exploring the problem, and is informed of the potential for change over time.

### Choreograph and Definition of Place

I sometimes dream of a larger and more populous house, standing in a golden age of enduring materials, and without gingerbread work, which shall consist of only one room, a vast,

rude, substantial, primitive hall without ceiling or plastering, with bare rafters and purlins, supporting a sort of lower heaven over one's head—useful to keep off rain and snow, where the king and queen posts stand out to receive your homage. . . .

I had three chairs in my house: one for solitude, two for friendship, three for society. (H.D. Thoreau, *Walden*)

*Twelve critical, optimistic young architects—critical of the present state of architecture, optimistic about a brighter future which they hope to be part of—are in search of Thoreau's notion of place: a place to meet one's professional peers for serious discussion, inspiration, and intellectual companionship; a place to retreat from the frustrations of the unimaginative, expedient culture of reality; to be both alone with one's thoughts and to share discoveries or insights with congenial colleagues and friends, or simply to enjoy and celebrate life's accomplishments; a place that is simultaneously of the past and the future, about "architecture" rather than "building." To this end, the group of twelve merged their yearnings under the aegis of Cartouche and began a search for a suitable Twin Cities environment. The ideal framework for Cartouche was speculated as tranquil, south-facing space in an empty old building anchoring an urban square with an enclosing garden.*

*After lengthy and heated discussion, the Cartouche proposed a "brief of five places" as representative of the ambience of the club. The brief's intentions are to inspire the club's members to create a place of meaning and identity, to transcend mere activity, to accommodate changes of use over time: a place that "exists" in the mind as much as in concrete physical reality; a collective greater than its parts.*

*The FORUM should be the "arena" where all twelve individuals can meet on a formal and informal level for renewal, address, acclaim, encouragement, reacquaintance, ceremonies, and rituals (i.e., conferring the yearly "Titanium Cartouche Award"), each with a permanent chair amongst equal peers. The CARTOUCHE requires a special place of reverence as it was rescued from the facade of a grande building that surrendered its history via the wrecking ball for a parking lot. The Cartouche became the collective rallying point and inspirational symbol for the twelve. The PLACE FOR REFLECTION accommodates the members' need to contemplate architecture's illuminations and postures, to research the cumulative wisdom and memory of society's precious collection of attitudes and values, to assemble the members' seminal journals, books, essays, drawings, or display their most recent projects, inventions, or*

*studies. A hearth provides the warmth and the privacy of a place to sit quietly or to read. The PLACE OF SOLITUDE is purposefully juxtaposed against the collective concept of the "Cartouche" to provide members a creative retreat, an enclosive immersion for thought, writing, drawing, or uncluttering. A window overlooks the walled-in metaphysical garden of "Commodity, Firmness, and Delight." The CORNICE is the necessarily inclusive, small place that provides the opportunity for members and special guests recreation, refreshment, sustenance, the intimacy of companionship, the setting for uninhibited celebration, debate, and posturing of past, present, and future spirits.*

The objectives of this first of three narrative exercises seeks to engage the student in discovering the link between the actors and the activities and therefore identify the nature of place in support of event. Associated with event is the notion of choreographing the constituency's intended experiences and actions in rooms, not just space and time. Exploring the five places—the Forum, Cartouche, Reflection, Solitude, and Cornice—requires, first, a diagrammatic large 1/2-scale study-model of potential spatial configurations of individual rooms. The intention is to reveal the interdependence between individual and collective-user responsibilities and the role of choreography in shaping the architectural articulation of such events as ritual, display, procession, reading, research, homage, reception, and so on.

The study-models explore, primarily from the inside, possible geometric configurations, boundaries, and points of reference, using elements such as stairs, furnishings, lighting, colonnades, or other aspects of movement paths. Particular qualities of the places emerge as notation and are suggestions and opportunities more than solutions. Linkages to and from each of the rooms and the outdoors are similarly specific in form. This first investigation, both analytic and conceptual, quickly demonstrates the capacity of the inclusive model sketching to reveal the richness of experience embedded in the ritual and fundamental human activities of the club, emerging as a three-dimensional chronicle, or memoir, of existing and mythical settings for further consideration and argument.

### **Thick Skins—Envelopes for Places**

The second narrative exercise introduces a new room as a response to both a new purpose, education, and a more specific objective, an informal response to climate. The Scholar, a more public meeting area, fronting and positioned like a porch to greet and connect with a larger community, raises an additional set of issues connected to program symbol and form. The envelope, metaphorically a thick skin, conjures

up the dual role verbal descriptions provide—thick with material and/or thick with meaning? The intention here is to find means for transforming apparent energy issues using the previous positions on configuration, structure, and opening, into a more comprehensive question addressing the manner in which form evolves, particularly as elevation and the overhead plan. Although the study-model remains the primary tool, large scale sketches and design studios of the significant parts of the discerning openings complement the exploration of form. What is particularly noticeable is the sophisticated expression of window and door configurations in the wall, and the speculative configurations of various structural framing approaches to complete the envelope. The study-model, by layering the wall or orienting the rooms and entry in response to the climate and the brief, addresses the energy question intuitively. Drawings further articulate the intentions at the interior and exterior faces at front, sides, top, and bottom.

*We create places that mark our turf, denote special characteristics about our lives, and to align ourselves with our social fabric. We also create places that are environmentally comforting. In our climate, an environmentally controlled space describes both human comfort and symbolic shelter. Coming in and out of the cold to stand near the fire to get warm is a very important part of our health and well-being as well as an expectation of our culture. Through technology we have achieved degrees of freedom in controlling environmental comfort. But this has also made it difficult to see and feel the effects of our energy usage, because we habitually need to wear a heavy coat in winter and no coat at all in the summer. Someone who can easily "weather" the elements is referred to as being "thick-skinned."*

*The Cartouche Club, now two years into existence, has been recognized for its substantive concerns for the Architecture question by being sought out for education in the profession. It, therefore, needs to add to it's brief a place of education, "Scholar." SCHOLAR is added to FORUM, CARTOUCHE, REFLECTION, SOLITUDE, and CORNICE to form a complete brief of the club's current needs. The SCHOLAR is a connection of the club to a larger professional society, much like a porch connects a family to their neighborhood. It is a meeting ground for 20 to 40 people to converse on professional concerns, exhibit art and architectural work, hold receptions and openings, and at lighter moments even a "roast" of a local or national hero.*

*The Cartouche is sunny side up to the street with a cool summer garden in back protected from cold winter winds, flanked by adjacent neighbors of a similar scale. The club would like to present a warm*

*face to the street through a timeless architecture of human comfort, a warm place with a thick skin. In their frugal manner, the members prefer to import only human energy if possible, to be warmed more by sun, a healthy argument, or the flickering flame of the hearth. They do recognize, however, that they desire a temperature no greater than 75° while external environment has day swings of up to 40° and seasonal swings of 120°. They also need shelter from wind, rain, snow, varmints, vectors, and societal miscreants.*

Investigating the potential characteristics of the form in response to climate and the context of the square requires that students expand on the formal compositional or symbolic issues by sympathetically including the dynamics of solar-paths, ventilation, penetrating cold, and permeating heat. At first intuitive models, particularly at a large scale and when coupled with more descriptive drawings that elaborate on the construction, rapidly associate the natural phenomena with the suggested built form. Students reveal their intentions when interplay between the wall, light, and openings displayed by modelings produce new ideas about pattern, sequence, and composition and measure the consequences of these observations on mass, form, and order.

### **Ordering Places—The Meaning of Order: Academy and Institute of Architecture**

*"Places" denote our existence in this world while order ties us together. It is through our reuse of ordering that we are able to perceive purpose within chaos, create identity and orientation within time and space, derive meaning from the world we live in.*

*This problem is about order and the creative act of ordering; about the organization of meaning rather than the superficial aspects of orderliness; about the "Order of Architecture" rather than "Building."*

*The Cartouche Club has become a highly successful enterprise, so much so, that it is rapidly outgrowing its original form and mission as a club and evolving into a more public institution: "The Cartouche Academy and Institute of Architecture."*

*Its purpose (added to the original charter of the club): The advancement of the cause of architecture through scholarly, educational, and social activities and events (lectures, seminars, exhibitions, publications, etc.). To meet these additional objectives, the original brief of the club is amended and extended by a few places, places of FORUM, CORNICE, CARTOUCHE, and SCHOLAR. The place of REFLECTION is expanded to include a larger, more functional LIBRARY of books and drawings. The place of SOLITUDE is eliminated and replaced by three*

STUDIO-RESIDENCES for visiting artist/scholars who will be in residence for limited periods of time to pursue their own studies and be mentors for some of the programs of the institute.

*In character with the growing rise and mission of the academy, a new component has been added—the place of NATURE in the form of a garden that attempts to manifest man's place within nature and his universe. Thus the garden is an important and integral part of the architectural definition of the whole complex and plays a major role in evolving a sense of its order. Due to some fortunate circumstances, the club has purchased a parcel of land next to its original site. Its property is now bordered on two adjacent sides by streets (one of which faces a formal urban square and is oriented to the south), while on the third side it is defined by a creek that is ten feet below street level, and on the fourth side by a ten-foot-high wall that encloses the garden of a neighboring villa.*

*You are asked to explore forms and patterns of order and meaningful organizations, particularly as they relate to such aspects as public/private interaction, manmade/natural articulation of places, formal/informal ordering, part/whole relationship, etc. You should also attempt to define a conceptual notion(s) about the Academy and Institute as a whole as well as the various places that determine its make-up and overall order. It should be noted here, however, that the club hopes to preserve some of its original integrity as a club derived from a forum of twelve within the more public institution of an Academy and Institute. In addition to that, the club and its extension as Academy and Institute are trying—through its architectural expression—to make a statement about architecture itself as a form of art and meaningful human endeavor.*

The obvious outcome of the explorations is not a well-drawn, skillfully assembled, and composed set of parts. Rather, the projects contain suggestions for continuing the dialogue between what exists as accumulated narrative models of ideal expressions of the places we dwell in and how to produce that meaning through conventional architectural means. The narrative is a small, unconventional, but powerful piece of the design process puzzle, because it sheds useful light on the relationship between fundamental questions about the source of ideas, how to explore individual ideas, and associate them with collective concerns about the whole as architecture. Students rapidly see how what they wanted conceptually is measured against other issues of order, structure, place, and envelope in a discussive and representational form.

Another outcome is that students learn that they quickly compromise design intentions by simply converting their models into form using conventional drawing means. The models represent both resolving the design and more importantly how the student has reflected on the uncertainty of the narrative's content, the uniqueness of the model-sketch, and the conflicts that have emerged as the process challenged previously and sacredly held perceptions. The most difficult transformation, from idea to form, requires a commitment to sustain the attitude of exploration and dialogue between human concerns, materials, site, and when to use conventions at several levels, not just the one that gets it done. And this later issue is the most challenging for students and teachers. The opportunities established by the modeled outcomes must be understood and accepted as being discretely incomplete. Expertise in modeling can result in facile manipulations in honor of originality resulting in metaphors becoming buildings unless the suggestive value of narrative reflection and inquiry is understood and accepted by the faculty member as a desirable outcome. Ultimately, the success of assumptions and axioms that form the studio require a constant distinction between blind convention couched as invention and true inquiry into the nature of the process of making architecture. These studies may never ultimately define architecture, but they provide techniques and methods that are transferable to other problems, programs, or settings for design activity. It is not the answer that matters as much as the essence of the question "What is architecture?" and that distinction is essential to our teaching and profession.

### **Acknowledgments**

This paper has described a studio teaching process that suggests exploration can be both analytic and conceptual but particularly appropriate when the tools to facilitate the inquiry aggressively combine the model as suggestive sketch and verbal texts as suggestive performance. Several colleagues have been influential in developing this studio, most particularly Professor Gunter Dittmar, who has continuously explored the model as a powerful, analogic investigative design tool. Additionally, Lance LaVine, who has explored the link between associative design logics, energy objectives, and symbolic, aesthetic, and social issues; and Dale Mullinger, who has used metaphor and analogic readings as entry points for design thinking, have developed parts of the studio.

Further inspirational readings and explorations of the narrative text are to be found in several articles in the *Journal of Architectural Education*.

### **Weeks**

## Footnotes

- 1 Dana Cuff and Elizabeth Robertson, "Words and Images: The Alchemy of Communication", *JAE*, vol. 36, number 2, Winter 1982.
- 2 Ellen K. Morris, "Architectural Type and the Institutional Programme", *JAE*, vol. 35, number 2, Winter 1982.
- 3 Peter Waldman, "A Primer of Easy Pieces: Teaching through Typological Narrative", *JAE*, vol. 35, number 2, Winter 1982.
- 4 Tod Williams and Richard Scofidio, "Typology and Primary Elements", *JAE*, vol. 35, number 2, Winter 1982.
- 5 Judith Wollin, "In the Canyon", *JAE*, vol. 35, number 1, Fall 1982.

# Three Projects

Jeffery S. Poss

*Two ways of life are thus arranged in final opposition. One way reads deep, if sometimes mistaken, analogies into nature and maintains towards change a reluctant conservatism. The other is fiercely analytical. Having consciously discovered sequence and novelty, man comes to transfer the operation of the world machine to human hands and to install change itself as progress. A reconciliation of the two views would seem to be necessary if humanity is to survive. The obstacles, however, are great. (Loren Eiseley, The Invisible Pyramid)*

The landscape of the Midwest has always afforded unique design opportunities to architects and builders willing to challenge its limitations and to exploit the advantages of the near continuous flat plane. Witness the drama of Chicago that rises from the swampland along Lake Michigan. Or the grouping of primary building components into agricultural enclaves at the intersections of the continuous rural mile grid. Or the poetic interpretation of local cultural conditions into the heroic structures of Louis Sullivan, Frank Lloyd Wright, and Eero Saarinen. The best of Midwestern architecture has always been basic and direct in its approach to local and universal design considerations.

The three projects in this article suggest a continuation of the search for significant new architectural responses in the expansive Midwestern landscape. Involved in this search is a more universal quest for a new architecture derived from a synthesis of popular and intellectual ideals. Each project attempts to synthesize two important design influences and to emphasize a new direction in the current architectural scene.

The first influence is Vernacular Architecture. Traditional, culturally meaningful forms or combinations of forms fully expressive of the regularities and irregularities of their use—archetypal forms without pretense to fashion. Because of their familiarity as

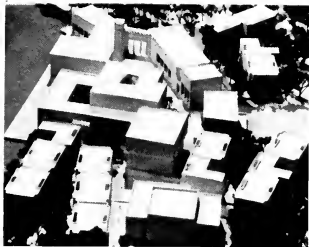
common objects, they evoke a strong psychological and spiritual comfort. Thus, the casual, simple geometry is charged with an inherent, perhaps unconscious, symbolism. Its primary association is with continuity and evolution.

The second influence is Modern Architecture. If architecture as a cultural participant is to survive, it must appeal to the intellect as well as the senses. The conceptual, theoretical, and technological framework of modern architecture fulfills this need. This framework provides a surrogate for meaning to the architect and attempts to provoke a response in the observer—in short, to enhance one's understanding of the context and purpose of construction.

In each project, the coupling of an appropriate vernacular prototype with modern principles becomes the catalyst for a more culturally responsive architectural solution. In Katherine Dong's scheme for a School of Architecture in Columbus, Indiana, the arrangement of buildings suggests both a medieval settlement shaped by evolutionary, unformatted growth and change, and an abstract, thoughtfully composed figure-ground relationship of mass and space. The buildings work as objects in space and as definers of space.

In Geoffrey Burley's project for a Lodge in a Wildlife Refuge near Peoria, Illinois, a primary modern architectural metaphor, the ship, is topped with a traditional sloped hat and broken in the middle to produce a provocative hybrid design solution. The true importance of this work, however, is not in these bold gestures, but in the care and sensitivity expressed in the handling of materials, structure, and siting.

Finally, my proposal for the Hanawalt Residence in Homer County, Illinois, utilizes the structure of a 30 x 60 foot wooden barn to create a home of unique spatial qualities. The enormous volume of this shell



allowed for the creation of unique three-dimensional interpretations of traditional living spaces, exaggerating the contrast between small- and large-scale rooms. This contrast in scale was then transferred to the building's skin, expressing a spatial subdivision determined by the structural bays.

The three projects, as a group, represent the three traditional scales of architectural design: urban, public, and domestic. They encapsulate the concerns of several students and faculty members at the School of Architecture-UUC in seeking new combinations of forms and ideas, and in addressing such vital contemporary issues as contextualism, appropriateness of form, form typology, and utopian arcadian academic planning. Finally, they suggest an emphasis on simplicity and quality rather than fashion, and on integrity rather than ego. In short, a celebration of the fusion of the superior and the ordinary, bound together, enriching one other.

**A School of Architecture for Columbus, Indiana by Katherine Dong.**  
**Critic: William Eng**

Columbus, Indiana is a living museum of contemporary American architecture. More than 40 public and private buildings have been designed by prominent American architects in this small Midwestern industrial town; each project exemplifies architectural excellence and creative new design solutions.

A School of Architecture has been proposed for this context. The school is to be a prototype of integrated residential and educational experience, where students live and work with full-time and visiting faculty members.

The site, remote from the city, is surrounded by park land and bordered on one side by a highway. The problem of siting, then, becomes one that faces



*A School of Architecture for Columbus, Indiana. (Dong)*

many Midwestern planners—how to create a sense of place on the open prairie by using a minimum of objects. The arrangement of buildings defining meaningful places evolved into the concept of “village” and “square,” a loose and informal relationship between figure (object) and ground (space) determined the overall site plan configuration.

Small residential clusters for faculty and students surround the school facilities and form the edge of an academic village in a quiet, rustic setting. Away from the rigid format implied by the grid and away from the conventional image of an institution, the informal atmosphere created by the small-scale village suggests that the division between teacher and student has been eliminated. The village square, recalling its historical analogy of a meeting place, supports this theme of interaction and becomes the focal point of the school. The academic buildings and residential clusters are organized around two richly patterned squares separated by a pedestrian street. The major plaza doubling as an outdoor lecture area in front of the school represents the exercising of the mind. The smaller public plaza, dominated by the recreational facilities, represents the exercising of the body. This creation of meaningful spaces of a genius loci identifies the importance of “place” within the environmental character of the village, a spirit often lost in our modern society of science and technology. Combining and integrating work facilities with dwellings on such an intimate level, along with two plazas of different sizes yet same genius loci, promotes the total man-place relationship.

This concept is architecturally quoted in the main plaza by using the proportions of the facade heights, enclosures, and major entrances of the Piazza San Marco in Venice, Italy. Situated in strategically the same proportionate location and recalling the same emphasis to the major building in the Piazza San Marco, a tall clock tower marks the main plaza and



*A School of Architecture for Columbus, Indiana. (Dong)*

the School of Architecture as a point of orientation and identification within the village. As a focal point in the landscape, it completes a triangle formed by the two landmark towers of Columbus—the Bartholomew County Courthouse and the First Unitarian Church—a suggestion of the historical influences between government, religion, and education.

In continuing the architectural imagery, a major pedestrian street leads off the main plaza and is terminated with two porticoes framing a large body of water that addresses the approaching cars on the highway. This analogy of a gateway implies connection to the city of Columbus and at the same time forms a gateway marking the entrance into the School of Architecture.

**Lodge, Wildlife Prairie Park for Peoria, Illinois by Geoffrey Burley.  
Critic: Ronald Schmitt**

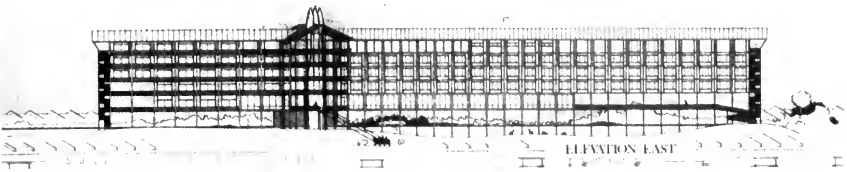
“God’s Country.” It came out slowly with the steady roll of the ship. An adult life spent at sea had permeated his personality, his thought, his voice. The salt water, the ships, the rust, far from Decatur, Illinois, his hometown. “Champaign, Decatur, Peoria, they form a kind of triangle. You’ll like it there.”

God’s Country, an odd thing to say, but I carried that phrase with me to the site, a hundred acres of strip-mined land a few miles outside Peoria. The land had lain fallow since the day the mining company had finished using it 30 years ago. At that time, strip-mined land did not have to be restored. Huge furrows of earth 20 feet high had been left as if God, displeased with the present crop of men, had plowed this earth in anticipation of a future race, greater and better, row after row of earth until the last row where God had given up hope. Now water filled it in.

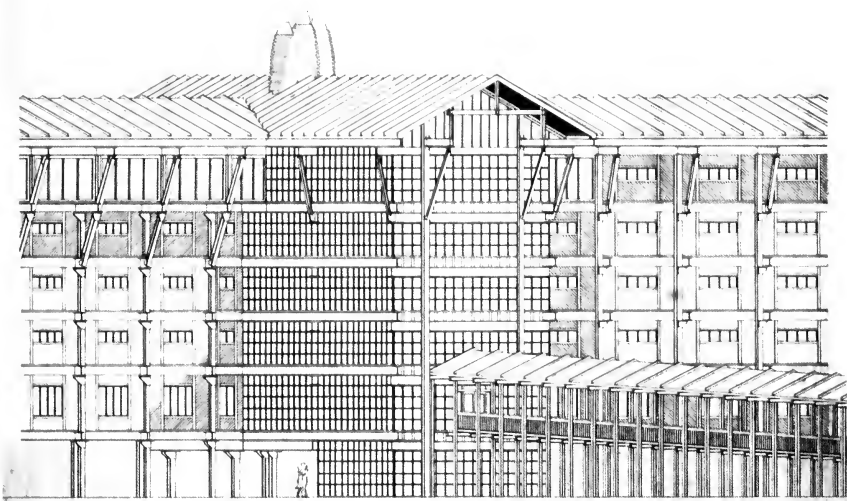
More likely, however, a financial officer, working on a clean black desk, peering at rows of numbers, had made a rational decision to halt the churning of the earth, to move the steam shovel to a new site, to disrupt the great, glorious task of stamping the unruly earth with man’s mark, to maximize profit in another way. Behind, the refuse of the effort was left: the furrows to frustrate the struggling vegetation with its chemical imbalances, and deep shadows, machinery (damaged by the effort), the men, to be forgotten. If this is God’s Country, this God must be a callous and brutal one.

The land offered tremendous wealth that was quickly dug up and moved elsewhere. It spawned industrial centers such as Peoria and Decatur, but, the land





ELEVATION EAST



ELEVATION WEST NORTHWEST

Lodge, Wildlife Prairie Park  
for Peoria, Illinois (Burley)

having once been easily exploited, became a sulky whore and gave less and less satisfaction for the effort. The natural wealth was a blessing and a curse. A "Mephistophelian bargain" had been struck and now the bargain must be upheld. The game is ending. Decline seems inevitable.

In the early seventies, the great mercenary, Modern Architecture, arrived in Peoria-town to exorcise what ailed the land. It stayed long enough to inflict a master plan and a complex by Philip Johnson on the ignorant and unwashed. The result of this exorcism is a new, modern vocabulary in which Peoria can express its decline. This architecture is completely out of touch with the changing equation of politics and economics which confronts Peoria every day. Heavy industry and agriculture based in a less competitive world can no longer be the foundation of wealth in the Midwest. The solution lies in other aspects of the area's tradition, such as the moral and cultural promise suggested by Lincoln. A promise completely submerged in materialism and mass culture. A promise given away, willingly and eagerly, in the face of the isolation of the Midwest and its self-induced inferiority—characterless area unable to cope with crises is the result. Chicago is the most racist city in this country. Rural communities are disintegrating spiritually. The business community is abandoning the area and losing its identity. Continental Illinois, for example, attempting to become a national bank, instead nearly bankrupts itself and is saved by de facto "nationalization." This is God's Country, indeed.

The Wildlife Prairie Park is an anomaly for Illinois. In a state with relatively few parks, it is a park. Its purpose is not to mimic the parks of New England or California with gardens or sports facilities, but to celebrate the wildlife and land of Illinois. It is a remarkable attempt to show that Illinois is unique. The newly acquired land and the lodge have to sympathize with that end.

The land, essentially, remains the same. This is a reminder of its past and expresses the need to create beauty within our own errors, our faults, our evilness. The deep furrows created for the convenience and efficiency of the engineer and accountant remain. By digging channels for water, laying roads and walkways, and erecting bridges, a unique campground is created. The prairie, also, remains untouched with the lodge elevated above it and placed at the edge. The lodge, then, forms a barrier between the two basic landscapes, the flat prairie and the hilly woods.

The lodge, although separated from the prairie and Nature on a smaller scale, sympathizes with Her on a larger scale. The linear and horizontal form mimics

the ridge line to the west. Its materials, weathering steel with wood infilling, ages and reacts to the elements. In time, it will blend with the natural hues of the woodlands. The upward and expanding form further relates to the nearby trees as does the way in which the building is put together with its skeletal structure largely exposed. On the more intimate scale, the building is seen to be a product of man, put together piece by piece, board on rafter, beam on column, visibly jointed together, the action of gravity physically encapsulated in this trabeated system. This detail in the larger scale breaks the mass apart much as a forest is seen as a mass of detail. The lodge, in short, is another organic creature, native to Illinois.

The proposal is not an ideological statement nor is it a vehicle for mass entertainment or profit maximization. It is a piece of architecture that tolls for the land, and under whose rafters birds will roost, which will age and which will look quietly out on the grazing buffalo and wapiti. If the Midwest is to survive as a significant cultural force, it must resist the easy exploitation of the past and reassert its unique cultural identity.

### **Hanawalt Residence for Homer County, Illinois by Jeffery Poss (with Mark Zinni)**

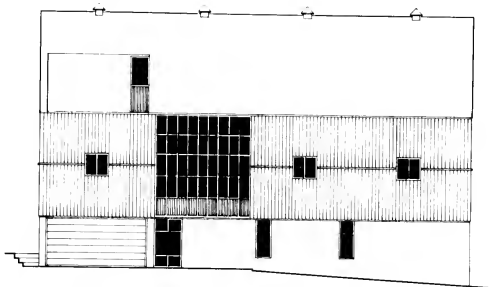
Scott Hanawalt was glad he was home. The brakes on the Chevy wagon needed adjustment, and he had almost driven through the wall of the garage. Once he opened the back door, he relaxed. He focused his attention across the stair hall to the 5-year-old in the playroom, absorbed in his building blocks.

"Where's your mother?" he asked. "Meatloaf" was the disjointed reply.

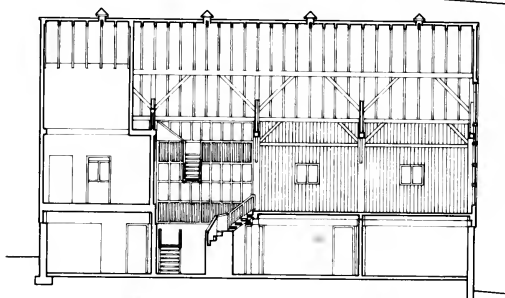
Meatloaf it was. By the third step, the scent of Beth's grandmother's favorite recipe reached his nostrils. By the fifth step, he could see the table was set and dinner would be ready soon. Late autumn forest sunset filled the aperture and bathed the space in an orange and blue twilight, reflecting off the everyday china and giving the man of the house his first conscious recollection that winter was about to arrive. Beth was in the kitchen spinning salad and talking to the PTA on the phone. A peck on the cheek, a kick of the shoes into the Master Bedroom, and Scott was off to the Living Room for the comfy chair and the *Trib*.

He loved that chair, he loved that space and the pleasant thoughts that they both afforded. He had built this house, this great barn of a house, with his two hands. He had gambled on the services of two

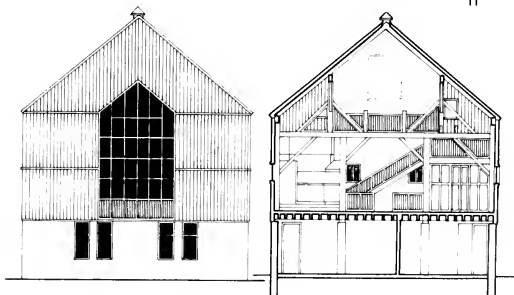
South  
Elevation



Longitudinal  
Section  
Looking  
North

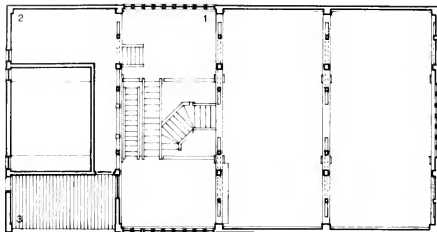


East  
Elevation



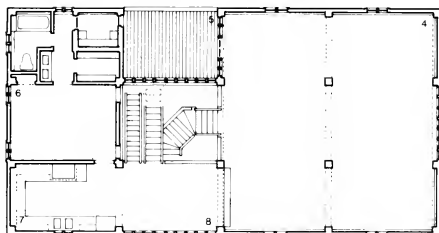
Cross  
Section  
Looking  
West

Hannawalt Residence for  
Homer County, Illinois (Poss  
with Zinni).



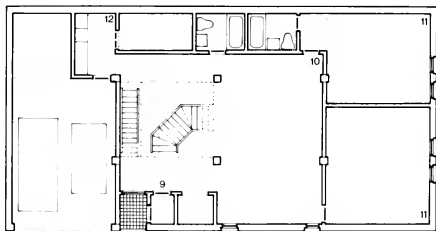
Upper  
Floor  
Plan

- study 1
- storage 2
- sun deck 3



Central  
Floor  
Plan

- living 4
- porch 5
- bedroom 6
- kitchen 7
- dining 8

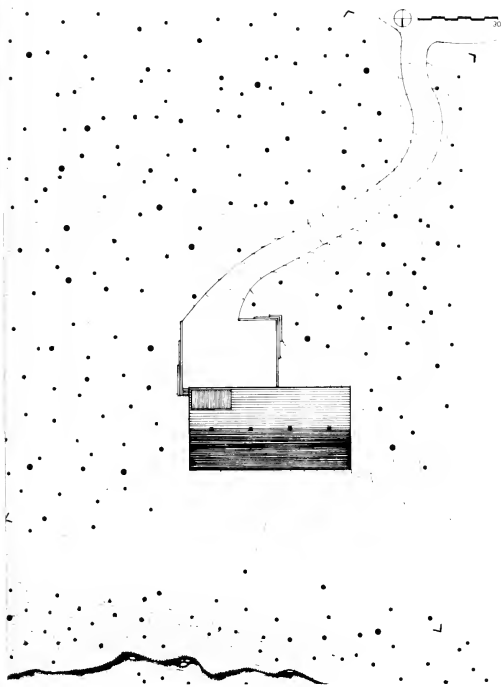


Ground  
Floor  
Plan

- entry 9
- playroom 10
- bedroom 11
- utility 12



*Hannault Residence for  
Homer County, Illinois (Poss  
with Zanni).*



*Hannawalt Residence for  
Homer County, Illinois (Poss  
with Zinni).*

novice architects to draw up the plans, primarily because their's was the lowest price. But in living here, he began to realize the importance of that gamble. Who else would have insisted on such grandness for the Living Room, and on building those ridiculously large windows? By now the surrounding forest was a part of him. The birds had adopted the building. He could never live anyplace else.

His thoughts drifted back into the room. Upstairs in the "knockabout" (the space under the gable was too precious for the designation "storage") the 7-year-old was winning at Junior Trivial Pursuit. Too much TV, too much junk. Why can't he sit in my great room with me and read and look out the window? But he knew that the loft was the most precious place for the growing, inquisitive young lad. Its unique geometry and fantastic lookout made it the most important fort in the neighborhood. From there he could see the events of the entire house unfold, as well as view the forest in four directions. This is why Beth's typewriter was up there too, amongst the anthropomorphic roof braces and the rafters and the fans.

Scott rocked and read the paper. He was glad he had worked and worried so hard and so long. He was living in his dream.

# Architecture— An Artifact of Culture?

Sanjoy Mazumdar

A Stork invited a Fox to dinner, served his best delicacy, fresh fish, in a long narrow mouthed vessel so that the fish could not escape. Fox could not eat, went home hungry. Fox invited friend Stork to dinner, served his best delicacy, ground meat curry, on a plate. Stork could not eat, went home hungry saying "Thank you my friend for the lesson of a lifetime regarding (investigating) values, particularly my own ethnocentric ones. Now I know how you must have felt." (Old Bengali Fable)

Present day planners, designers, and architects increasingly faced with the prospect of designing and building in different and unfamiliar cultures are often confronted with the dilemma of how and to what extent to integrate the values of the local culture<sup>1</sup> with the architect's own in making policy decisions regarding the process and content of design (Affleck: 1970). Should designed architecture become an artifact of the situated culture and therefore responsive to situated cultural values, or should architecture follow its own set of values and be universal? Architects, however, have for long been criticized by social scientists (Gutman:1972; Gans:1968; Sommer:1972; Broady:1966; Pressman & Tennyson:1983, etc.) and even by architects (Brolin:1976; Burnette et al:1974; etc.) for failure to be responsive to the social, behavioral, cultural values, and needs of the people who receive and use such buildings.<sup>2</sup> In the past two decades since the major criticism began, the brunt of which came from social scientists in the 1960s, social scientists and architects have, in an attempt to make architecture more responsive, carried out research, set up professional bodies, research organizations, and teaching programs. Volumes have been written out of such research. Nevertheless, some are still claiming that architects are either unaware of the criticism or have retreated to a more formalistic mode of design (Lang 1980), and others are arranging conferences

on themes such as "Cultural Responsiveness of Architecture" and "Built Form and Culture Research" (1984). While a possible reason for this could be to bring together a body of research already done on the subject, a more likely reason, we feel, is a lack of adequate research useful in understanding architecture as an artifact of culture, or for making architecture culturally responsive.

## **1. Should Architecture Be Responsive to Cultural Values?**

Several questions are commonly raised in the debate on whether architecture should be made an artifact of culture and therefore responsive to cultural values. First, "Should architecture be responsive to cultural values?" The question, however, seems misstated and moot from our point of view. This is because any design has to respond to some set of expectations, criteria, standards, norms, or values of one or more sets of people. This set could be the architect, the architect's own culture, the profession of architects, the teachers of the architect, professional and non-professional friends, relatives, or colleagues of the architect, the immediate users of the building, the society or culture in which the building is to be located. They could even be a conscious or unconscious combination or derivation of any set of values, or of a group of people real or imaginary, set in the past, present, or future, who have established values, norms, guidelines about what would make "good" architecture. This would be true if the architect attempted to meet a set of criteria, whether given to the architect to be met or the architect's own (Marcus:1983), which would be the values even if they were simply put as comfort or standard factors (Rapoport:1976). It is sometimes argued that a particular architect is selected because the clients prefer this architect's design philosophy and approach. Parenthetically it should be mentioned that several architects develop innovative philosophies and approaches to design, materials, styles, (such as Corbusier's exposed concrete, Rudolph's hammered

fluted concrete, Kahn's expression of the "master and service areas," for example), which are lauded by their professional organizations in much the same way as sociologists and surgeons are lauded for discovering new techniques, not necessarily for helping society, or for saving an individual patient's life.<sup>3</sup> However, this amounts to following the values of their professional subcultures.

Second, "Should architects worry about whether their creations cater to cultural values or do architects have a mandate for designing buildings in which the important issues are structure, cost, form, texture, materials, beauty (Pressman & Tennyson:1983) and the like?" This relates to a choice of professional values similar to the one mentioned above. Architects generally devote their attention to formal elements (such as height, mass, volume, texture), technical gadgets (such as solar collectors, passive energy systems), structural systems (such as large cantilevers, geodesic domes, hyperbolic paraboloids, inverted pyramids), and new forms (Colony:1983). While architects often talk of their work as being imbued with meaning, or intended to convey feelings and even emotions, they have not explored why their work often has not been treated the same way by the society in which they are located, and why people often do not behave the way the architect imagined they would.

A third question is "Should not the architect introduce new architecture which will improve living conditions by introducing new values, life styles, etcetera and not necessarily conform to pre-existing autochthonous values?" Inherent in this question is the idea of architectural determinism which assumes that the architect can affect or control the life styles and behavior of people through design and built form (Montgomery:1970; Lang:1990). While the architect can use professional skills in attempting to provide better facilities, this does mean introduction of new values which the architect may have derived

elsewhere (Warfield:1983:58).

"Should not the architect design in accordance with the findings of research on Person Environment Relationships (PER) and on Environment-Behavior (EB)?" is a fourth question. There seems to be an underlying trend towards behavioral determinism (of architecture) here which assumes that human behavior determines, or should determine, architecture. Here also, there would be a conscious choice of using the values of the research scientists, based on a choice by the architect of using that mode. There is a bias in existing and current research toward behavior not being affected by cultural values, and toward stress on generalizable person rather than on uniqueness and variability of cultures and individuals.<sup>4</sup>

A fifth question is "Should not architects attempt to design 'great' architecture which will transcend cultural preferences and be considered 'great' by all cultures?" Architects often believe that truly great architecture transcends cultural preferences and is admired universally. There are several ways to approach this question. One line of reasoning behind universal acceptance is for a world culture (Critchlow:1967), perhaps homogenized into having a single, or similar, sets of preferences. If this were the case, it would follow that architects' creativity would be severely curtailed into responding to only one set of values. Further, it can be argued that this line of reasoning assumed in the question circumvents the point. A second way to approach this question is to assume that great architecture has certain inherent elements or qualities which make them universally acceptable which could be identified through either a comparative study of great architecture, or detailed, in-depth studies of individual examples. Architects, Western ones especially, have taken this approach and assumed that the elements they have chosen to study are the ones, and the only ones, which made that architecture great. It is

further believed that by utilizing the identified elements and recombining them following general rules derived, one could produce architecture which would be considered great. While this seems a plausible way of approaching the subject of how to produce great architecture, it neglects a crucial element—the people. As a third alternative, one could look at the people aspect and reason that for architecture to be considered great it has to meet the expectations and values of one or more of the sets of people mentioned earlier. It is imaginable that some criteria may be common to all groups and that when these criteria are met, all groups will consider the architecture great. While the chances of such acceptance become smaller the larger and more heterogeneous the group gets to be, we can still conceptually consider it a possibility. These values then would need to be identified, perhaps by social scientists, so that they could be catered to. But the near impossibility of doing this has probably prevented work in this area. Besides, the number of buildings that have generally been considered universally great are extremely few—and even with these, it is not clear that they could easily be transplanted out of their settings to other cultures, and even architects would agree that they may appear incongruous in other settings. But, if the architect is catering to the values of any one subset, consciously or not, that architect is attempting to be responsive to that particular culture. In other words, the ideal that the architect is attempting to obtain has to have a root, and originated in one or more of the sets mentioned. Research seems to indicate that what architects consider ideal is, at times, what they have experienced or what they have been conditioned, educated, or socialized to believe (Marcus:1983). For the architecture to be universally acceptable, would by definition, include acceptance by the local culture, and the two are not antithetical. Thus, architecture can be seen to be responding to some set of cultural or subcultural values.

The question then can be restated: "Whose values should architecture cater to, and to what extent?" Here, several choices become obvious: the architect's cultural values, the architect's own values, values of the profession—impacted through education or through professional organizations, the values of the local culture, values of the paying client (Zeisel:1974), if different from the user. Since architecture is considered a profession in service of society, catering purely to the architect's own—cultural or professional—or a paying client's values seems inadvisable. Catering entirely to situated cultural values, i.e., a serve or "slave" (Ledewitz:1983) approach, also does not seem reasonable given the development of the profession of architecture as a set of skills devoted to improving the effectiveness

of building. In order to increase the responsiveness of architecture to the situated culture, we feel, it is necessary to take a new outlook toward architecture. It is felt that the foremost criteria for architecture is to be *part* of the culture, its values and milieu, and to fit in,—i.e., to be an artifact of culture—and then on a slightly lower order of priority to respond to issues of better services, better environment, better environmental controls, and so on, as opposed to the paradigm of making the latter set of criteria foremost, and add on at a lower level of priority an attempt to make the designs somehow *more responsive* to the culture (Warfield:1983:61). Hence, our recommendation to the architect involves making a concerted attempt for use of the architect's creativity to knowledgeably provide designs which will be acceptable to and accommodative of the values, beliefs, norms, and preferences of the local people and yet be innovative. A proposal for how this could be done is detailed below which includes investigating the situated culture and taking a new approach to design, which requires consideration of several possible approaches to design and understanding of the choices involved in each.<sup>5</sup>

## 2. Investigating Situated Cultural Values: A Proposal

The proposal requires the architect to investigate, using holistic research techniques, and understand the situated culture from the local people's point of view.<sup>6</sup>

In order for the design to be culturally responsive, the architect has to understand, firsthand, the situated culture as the local people understand it: what they think is important and what is not; their values, beliefs, norms, and preferences; and what is unique about their culture. The philosophical frame best suited to this understanding involves one of ontological nominalism and epistemological anti-positivism.<sup>7</sup> Holistic research techniques (Weiss:1968), requiring unbiased entry into a setting unencumbered with any preconceived analytical stand included in search for specific concepts or variables, is most appropriate and best suited for the type of understanding recommended here, since it is likely to reveal even tenuous relationships (Mazumdar & Mazumdar:1984a). Use of idiographic methodology, where each culture is treated as a unique entity to be studied for what it reveals about itself, its values, and how it functions, is stressed because it appears to be the best available for such research, and is, we feel, ideally suited for application to culturally responsive design in architecture. Use of unobtrusive measures may be most effective. Since nomothetic methodology generally involves the counter positions of realism and positivism, and requires investigations of generalizable variables and



principles, testing of preconceived hypotheses formulated by the scientist, which generally would not lead to the kind of understanding advocated here, it is not recommended (Burrell & Morgan:1979; Seamon:1984; Van Maanen:1984b).

Visiting the setting (site, location, field) and staying with the people for a period of time would be required to understand firsthand about the situated culture, the beliefs, way of life, values regarding the built environment and interactions with it, trends of change in the culture which might affect their values and interactions with the built environment, and so forth. This would be required even of those who visit the setting on a regular basis to learn about site conditions, and particularly of those who are reluctant to spend time at the setting and in the culture they wish to build in (Peattie & Porter:n.d.:10). Spending the initial part of the visit on cultural investigation would be required in order to avoid pre-judgement and to utilize the natural curiosity of the early period when most people are interested in learning about the new setting and the situated culture, and are extremely alert and receptive to a variety of cues, signs, symbols, etcetera. The recommendation is to bring this innate ability used to satisfy one's natural curiosity into positions of heightened consciousness so that it can be harnessed, and this period of "heightened awareness" or of being a "wide-eyed visitor" can be extended to the entire period of cultural investigation, so that everyday and familiar elements are not taken for granted or overlooked.

Recording information obtained through observations, cues, behavior, attachments, preferences, conceptualizations about cultural values, working theories formulated, and so forth is important, and should be done as soon after the observation as possible. Recording observations, and one's feelings, understandings, reactions and theories using oneself as the informer of what is going on, after each day or suitable shorter period of interactions with the local people—a form of catharsis—produces a written record which can be referred to later. Such a record will enable later cross-checking of information collected, the figuring out of cues that were overlooked and those that were overly stressed, checks of the conceptualizations and working theories generated and their accuracy, which can lead to self-improvement, especially if systematic or consistently patterned errors are found. Recording of information, including personal ideas, hypotheses, working theories, and comparisons is therefore important. Several questions, hypotheses, comparisons, are likely to arise at this stage and, if recorded, can be followed up later (Johnson:1975; Pelto & Pelto:1983).

Following a sequence for the investigations starting with observations, followed by participation, and by interviews, and use of informants can be very useful. Spending the initial period in a place or a culture in observing, when such skills are at their natural peak and can be harnessed, would be useful. The next stage, participation in activities and everyday events, may include participating in regular and daily activities with people of the culture. Informal questioning and interviewing are likely to proceed concurrently at this stage, but stress should be on participation and recording of observations and questions regarding why things are done in certain ways and why certain modes are preferred to others. Later stages should be devoted to "interviewing" and "use of informants"—technical jargon for finding knowledgeable people and talking to them at length about their views and on questions about their beliefs, values, aspirations, what they feel are good aspects of their systems, and what they would like changed. Here the purpose is primarily collection of information not obtainable through observation and participation. Talking to several people (subjects) for short periods or about specific topics is also advisable.

Time required for such cultural investigation is likely to vary widely from individual to individual—because of the likelihood that some people will be sharper observers of culture than others—but should continue to the point that one feels comfortable and competent to be one of the local people and to live with the people a life as they live it. The stress is not on knowing everything about the culture, but as much about the people and their values that affects their choice of and relationship with the built environment. Hence, it may be necessary to understand their life style, their family structure, religious beliefs, their governance structure and political framework, their formulation of relationships with relatives, friends, and with others. "Going native" is not unknown to architects and has been done before (Gretton:1970; Deasy:1970; Vickery:1972). The stress is on spending as short a period of time as necessary in learning about the culture and obtaining a correct and accurate picture, as if one had moved to the setting to live there. The time period, which for programming purposes a few weeks to a few months can be considered, can be reduced by (a) careful selection of "well-informed informants" as well as of a representative "sample" of events and people, for observing, participating in, and interviewing; (b) by improving investigational skills listed, through practice; (c) utilizing natural curiosity; (d) utilizing one's learning curve to the best of one's ability. While learning can continue throughout the stay, maximum learning takes place in the first weeks and drops sharply after a few months. It would generally be inadvisable to spend time beyond the point one's

learning curve dropped off and one felt comfortable because of the marginal nature of the gain, unless critical questions remain unresolved. My experiences in Iran, where I spent two years, demonstrated this. Quick and yet sensitive studies are not uncommon, as I found for example, with an author who captured the essence of the culture having spent only a fortnight in the setting (Näipaul:1982). Individual investigators and social scientists ought to be working on ways to reduce the time required. The general trend in current social science literature seems paradoxically to be on spending large amounts of time—even though social scientists are expected to have the sharpest investigational skills because of their training, and therefore can be expected to require the least time, less than novices and the uninitiated who may have gone to live there. This trend and its detrimental effects on the kinds and numbers of such studies is lamented (Van Maanen:1984a).

Development of several skills will be necessary, including the ability of "sensitizing" (Blumer:1969) oneself to various features in the environment and to the values of the situated culture for the time spent in the setting to be fruitful. Acute observational skills and ability to ask pertinent and unbiased exploratory questions are very important. Ability to recognize patterns and make linkages between seemingly unrelated events actually having common ground can help enormously, although this may depend on sharp observational and listening skills. Ability to stay with the local people, rather than maintain a life style one is used to, unless this creates other problems (Kleymeyer & Bertrand:1983), helps. Ability to make friends and identify potential informants, and even the ability to identify individuals representative of the population (or of distinct sections within it), is useful. Being able to talk to deviants and observe deviant acts and ask follow-up questions can be the shortest cut to finding out about norms, short of the risky prospect of carrying out deviant acts oneself. Ability to devise innovative techniques can be very useful (Van Maanen:1984b; Deasy:1970) as well as the ability to go into a situation with "blindness," "tunnel vision," "prejudgement" (Peattie & Porter:n.d.:10), and a preconceived analytic plan, since after all, the intent of the study is not what researchers or social scientists think but what the local people see as important. Knowing one's own biases and attempting to eliminate their effects is important (Marcus:1983).

Since it is unlikely for findings from idiographic methods to be checked by anyone else, it is incumbent upon the investigator to ensure completeness and accuracy, and to check and recheck findings, hypotheses, and working theories objectively, unlike that with nomothetic methods where several people

could be involved in checking correctness and methodological accuracy. Methodologies developed by social science disciplines have been attempts to minimize and even eliminate errors, of which the spirit of error minimization should be captured, without getting caught in the vicious circle of error correction and method purification that several numerical methodologies suffer from. For these, the stress seems to have shifted to methodological purity rather than theory generation, to counting rather than providing at least one person's understanding of how things work (Hillier:1973; Glaser & Struss:1967). In an effort to reduce biases, social scientists devised "blind" studies where the subjects are not known to the investigator, and to eliminate bias from selection and recording introduced "double blind" studies where the investigator was not allowed to know either the subjects or how which subject responded to which conditions. This may be fine for social scientists, but architects should not attempt to borrow and introduce such concepts into architecture. But perhaps architecture, as practised in some quarters, is already "blind" or even "double blind" such as when the architect is removed from the setting and local culture (Peattie & Porter:nd) and when designs are based on ideas of how and what a generalized person would behave or prefer. Statistical studies intend to predict with some degree of accuracy, what happens in the population through studying only a small sample.<sup>8</sup> Our recommendation is similar—to attempt to understand salient features of the culture by interacting, participating, and talking with people in the culture for only a short period of time. An important point that statistical studies raise is that the selection of a "sample"—i.e., who and what is observed, interviewed, and participated in—as well as its size are important, not just the quality of information obtained. If the "samples" are representative, an investigator can get a fairly good idea very quickly while improving chances of accuracy greatly. Architects need satisfy only themselves that their findings are correct, accurate, and complete the best measure of their accuracy being the acceptance of their buildings by the local people; they do not need to support their claims, as social scientists do, using numbers—which may be wrong (Hillier:1973).

### 3. Design Approaches

Elsewhere we (Mazumdar & Mazumdar:1984a) have commented on two commonly used models of design. Approach A, in which the architect believes that situated cultural values are irrelevant or unimportant for the purposes of the project, and therefore not needing investigation, entirely neglects consideration of the process of culture investigation proposed in the model, and is unlikely to be responsive. Ap-

proach B, one in which the architect believes that local conditions and culture require investigation and study but only a partial investigation is carried out because, as is often the case with architects, physical and built artifacts are believed to have embedded values and treated as a "culture" (Frederickson:1980:75-93) or "tradition," to be studied, repeated and carried on, neglects consideration of several stages in the model, and is unlikely to be responsive. In spite of the effort and the good intentions that may go into it, a superficial search of that nature, or a slipshod investigation, can lead to misfits and is not advised. The authors recommended consideration of all steps in the model, or a complete investigation, in order to obtain a good understanding.

A new modified chart can be proposed (Fig. 1) charting the level of investigation against possible approaches to design. It depicts the level of investiga-

tion (Nil = N, Partial = P, Complete = C) against attitude towards values in design (Ignore/Impose = I, Culturally Responsive/Creative Resolve = R, Serve/Suppress = S). Since the maxima and minima of the situated cultural values and the architect's values are at different ends with regard to their level of interaction and combination, they are located at two opposite ends of the diagram. Many currently used design approaches do not recommend a complete investigation and can be categorized under four possibilities: NI, no investigation and ignore/impose values; NR, no investigation and claim of responsiveness to values; PI, partial investigation and ignore/impose; PR, or partial investigation and belief of cultural responsiveness even though the investigation, and therefore understanding, is nil or only partial. The chart shows that without a complete investigation of values, both the situated culture's and the architect's own, culturally responsive design does not seem possible (columns N, P).

ATTITUDES TOWARD VALUES IN DESIGN		INVESTIGATION LEVEL			ARCHITECTS VALUES		
		SITUATED VALUES	NIL N	PARTIAL P			COMPLETE C
MAX INFL.	SERVE	S	PS not possible	PS not possible	CS possible	S SUPPRESS	MIN INFL.
	CULTURALLY RESPONSIVE	R	NR not possible	PR not likely	CR possible	R CREATIVE RESOLVE	
MIN INFL.	IGNORE	I	NI possible	PI possible	CI possible	I IMPOSE	MAX INFL.

Fig. 1 Depiction of Level of Investigation Against Attitudes Toward Values in Design

In order to be culturally responsive, the architect would need to have carried out a complete investigation (Approach C), or have considered the entire process elaborated in the model (Mazumdar & Mazumdar:1984a). Cultural investigation of that nature would provide the architect with a fair idea of the values, norms, and preferences of the people as it existed in the past—changes occurring and possible changes in the near future. However, even after complete investigation, three approaches are possible: CI, or imposition of architect's values; CR, or culturally responsive/creative resolve of architect's own values with that of the situated cultures; and CS, or service of local cultural values. We recommend approach CR with a view to syncretic and synergistic resolving of design issues. Two caveats need to be mentioned. First, cultural values change slowly over time (Mazumdar & Mazumdar:1984a). The architect would need to design in accordance with the changing set of values and norms and keep in mind that values change slowly and that earlier values and their manifestations in built form have been what the local people have been accustomed to. The architect, in his or her investigations should also become aware of the social status of the group and their aspirations for the future, which may not be consistent with those of the past (Mazumdar & Mazumdar:1984b). As a professional, an architect can make recommendations for improvement, greater efficiency, and effectiveness, as also of creative ideas. The architect, as an outsider in the cultural milieu, can provide suggestions based on observations as an objective observer that will often provide a point of view which the local people, due to their subjective involvement, may not. This would provide a lot of room for the architect's creative endeavors. Second, responding to cultural values provides immediate gratification of having the project accepted and the culture satisfied. Approach CR significantly increases the chances of the project being successful and accepted when built and also perhaps a few years into the future, without any major strains on the part of the people (Fried:1963). It should be emphasized that the process recommended here does not limit the creativity of the architect regarding architectural elements, such as forms, materials, structure, volumes, solids, voids, massing, landscaping and so on, but rather provides a challenge to the architect to cater to the local people's cultural and social values, while at the same time to try to produce a piece which will be considered good by the architect's own standards. Part of this challenge for the architect lies in extending his or her thinking beyond the existing paradigm of working with architectural elements alone, and see architecture, as well as his or her performance with it, as an artifact of culture.<sup>9</sup>

Eco (1973:45), working with the semiotic content of architectural forms, admitted the *culturally attributed importance* of the element of the sign vehicle and proposed three possible attitudes a designer could take toward the underlying semiotic structure: (a) subversion, "taking an approach of 'avant-garde' subversiveness, the architect might decide to dispense with the conventional(?) architecture and oblige the people to live with a totally different architecture"; (b) new architecture but answering to the basic code, "undertake to create an architecture that would be new but that would be intended to answer to that basic code"; (c) serving of local codes, "thoroughly integrating his work into the reigning social system." There are some essential differences between Eco's proposal and ours. Our typology examines the underlying cultural values which lead to a choice of a particular artifact over others possible, and is not restricted to the meaning structure of an artifact. Hence for us, meanings are subsumed in the choice of the artifact, which by our line of reasoning would be based on values, norms, utility, symbolic content, meaning, religious or belief based significance, etcetera. Second, Eco's typology implicitly assumes an understanding on the part of the architect, of the situated semiotic structure—for, even to be subversive, one has to know and perhaps even understand the structure—while a "slave" approach (Ledewitz:1983), and the one allowing for change and creativity by the architect requires knowledge of the situated semiotic structure. Third, our typology relates more to the unbiased search for understanding and consideration (perhaps through following of the steps set out in our (1984a) model) of situated societal values, norms, and so on, which influenced choice of a particular artifact or mode of building, and which would influence acceptance of the new building.

Sensitivity to the elements of a culture, and all the skills necessary for holistic qualitative research, can be developed through classroom mode of instruction. Readings on methodology are abundant (Van Maanen:1984; Johnson:1975; Schatzman & Strauss:1973) and on author's sensitivity, and even author's thought processes, are available (Schatzman & Strauss:1973; Seamon:1983). Courses can be designed to inculcate in students the ability to learn quickly about cultures—on developing observational, interviewing, and participant-observation skills, as also of sample selection, informant cultivation, and so on. Classroom gaming situations and role-playing are excellent techniques, which would involve students in learning about cultures developed for classroom situations. Assignments involving investigation of cultures using all three techniques, individually or in combination, is also encouraged. Such courses can stress brief papers

based on on-setting investigations but involving a time limit. It will be interesting to briefly check if schools of architecture in the USA encourage such philosophical attitudes and research.

#### 4. Usefulness of Current Mode of Architectural Education and Instruction

To a person interested in learning about culturally responsive design in the manner set out above, a majority of the educational programs and courses offered would be only marginally useful, as was indicated by a quick survey of catalogs and course descriptions of various schools of architecture in the USA for the years 1979 to 1984. This is in spite of the finding that a majority of schools now offer courses in behavioral and human factors, EB, PER, programming, etcetera, although the number of courses varied from nil and a single course in programming to 20 out of a 90-unit requirement. Most schools did not offer more than three or four courses in these fields.

Surprising by their absence from the lists of courses were those teaching culture-responsive design, cultural investigation, and qualitative methodology. Courses in quantitative methods were more common, which may be, in part, due to the easy assimilation and replication of methods and models from the natural sciences even though the probability of an average architectural student in regular practice utilizing quantitative techniques to explore, find, understand, or confirm some relationships between variables seems quite low. Although the use of qualitative methods, even if intuitive or erroneous, may be more likely, and even though these processes could be improved through the inclusion of courses teaching students how to make appropriate judgments based on qualitative research and data, schools neglect courses in qualitative methods. The offerings do not appear to be a concerted attempt to provide a balanced understanding of the social, behavioral, and cultural aspects of architecture, but as a reaction to criticism and an effort to appease critics. Even a single well-designed course providing an overview of the alternate philosophical viewpoints, methodologies and their capabilities, limitations—when which can or should be used, and an overview of the substantive literature properly laid out in perspective can be much more useful to architects than several introductory, specialized substantive or methodology courses presenting only one philosophical viewpoint, as is normally the case. For example, many have included detailed substantive courses and left it to architecture students to figure out alternate philosophical viewpoints in social science and their comparative utilities.

Reliance on positivist philosophy and nomothetic

methodology is prevalent in the courses offered. There seems to be an attempt to replace architectural determinism (of behavior) (Warfield:1983:58; Lang:1980) with what amounts to behavioral determinism (of architecture) with the assumption that architecture was meant to cater only to human behavior, not to values, preferences, beauty, and so on. (Pressman & Tenmyson:1984). Courses stress presentation of research findings, confirming or validating hypotheses, and teaching them, rather than finding relationships, generating hypotheses and testing them and methods for these. This was supported by the fact that a majority of schools include some courses on EB, PER, programming, and quantitative methods.

There seems to be an emphasis on generalized person and hypothetical clients and users as a basis for design projects. There rarely seem to be real-life clients who could present their values nor those whom students could investigate: as a result, social and cultural values of users seem to be largely neglected. Designs and choices of relationships are based on spaces, hypothetical behavior, formal relationships such as "Form follows Function," or findings of those of a generalized person; on generalized principles regarding determinants of form and behavior; and on ideas developed about how behavior should take place, which still does not answer the question: Who will be satisfied by a design based on such premises? Values involved in such choices and options seem to be largely unexplored which could be leading often to "blind" or "double-blind" architecture mentioned. Further, there seems to be the assumption that such projects are pedagogically useful, since such generalized designs could either be customized when necessary, or are inherently better or such techniques could be used in special cases faced in real life (see Mazumdar:1984c).

Stress on disciplinary elements seems to be common to most course offerings. Introductory social science courses ought to cater to interests in and stress on architecture as an artifact of culture. However, this is not the point of view adopted by most schools, some of which simply included the standard disciplinary introductory courses in anthropology, sociology, and psychology in their respective departments—which is not likely to help much because such departmental introductory courses generally are overviews and introductions to the variables and concepts dealt with by those disciplines and are unlikely to provide an overview of the relationship of those fields to architecture nor cover basics of methodology. Most attempts at teaching culturally responsive design have been at an informal level. Only a few schools have begun to offer formal programs; but some of even these stress disciplinary ele-

studies, such as either study of spatial and architectural elements receive primary attention, or elements (or variables) borrowed from social science disciplines. This is in spite of the distinct possibility such programs have for producing a syntax, a substantial body of knowledge, or even a methodology for a study of the relationships between culture and architecture. There is a need for more formalized programs of the kind recommended.

### 5. Usefulness of Existing Writings for Culturally Responsive Design

Existing writings and research are of limited assistance to a person interested in culturally responsive design which may be contributing to a similar situation with educational programs. It will be useful to briefly examine why this is so. There are three contributing factors: (a) underutilization of anti-positivist research; (b) reliance on positivist philosophy and nomothetic methodology; and (c) reliance on disciplinary elements, each of which will be described below.

Research from an anti-positivist, nominalist perspective has been underutilized. Proposition, through cross-cultural study (Rapoport:1969), that cultures have values, or sets of preferences, for choice of and interactions with the built environment, and that cultures have consistency in their values regarding the built environment, even though at times cultural preferences may appear uncomfortable, has not led to a spate of studies demonstrating either how cultures relate to their built environments or how such relationships can be studied. Only a few examples of use of relevant studies in design or programming are available (Marcus:1983; Deasy:1970; Gretton:1970 etc.). More holistic studies available (Saile:1983; etc.) tend to select and rely on disciplinary elements, such as ritual, world view, and so forth, or to study the phenomenology of place (Seamon & Nordin:1980); but their reliance on "place" rather than people, and on concepts, such as place ballet, can be detected. The kind of holistic study advocated here and by Saile (1980) are not easily available.

Existing writings, much of which has been in the fields of EB and PER, have implicitly assumed a positivist philosophy, believed in realism, and used nomothetic methodology to find generalizable aspects of behavior (Altman & Chemers:1980; Rapoport:1976; Ittelson:1970) and to study the relationships between a generalized person and the environment.<sup>40</sup> Description or mention of the culture where the study was carried out is often lacking—the belief being that their studies reveal aspects along generalizable variables about humans and their environment, and perhaps about the culture in which the study was carried out, and that similar

studies could be carried out in different cultures to demonstrate the generalizable and variable aspects of each. To learn about a specific culture, an enormous number of studies would be necessary; but even if these were available, the information may still not be very useful because (a) the studies may be temporally bound, (b) they still would not be able to offer educated guesses about the range of designs which would be preferred by a society, (c) the information may not be translatable into design (if the architect got past the jargon), and (d) different studies may contradict findings of others (Pressman & Tenynson:1984; Hillier:1973).

Existing literature also presents a fractionated view of a person because of the reliance on easily identifiable, definable, measurable, and manipulable, disciplinary variables or elements. Thus architects have relied on a vision of the "architectural man" interested in spaces, volumes, shapes, solids and openings, voids, material, texture, massing, shade, and shadow, etcetera (Warfield:1983); psychologists have relied on a vision of the "psychologic man" or "environmental man" (Ittelson et al:1974), unaltered by culture, interested in territoriality, defensibility, cognitive processes, mapping, personalization, wayfinding, and the like; sociologists have "social man" interested in minority-majority relations, status, power, conflict, race, ethnicity, family relationships, and so on; anthropologists have relied on "anthropologic man" interested in world view, ritual, culture, meaning, religion, kinship, symbolism and expressiveness, and so forth. These have not been of much use in culturally responsive design and may, on the other hand, have misled practitioners into determinism.

Anthropologists and sociologists, with few exceptions, have largely ignored the culture-built environment relationship in their studies. Social psychologists have studied the relationship but relied heavily on natural science perspectives, being extremely concerned with mostly those aspects which could be studied in laboratories or replicated, including surveys of perceptions of the built environment. Architects also have studied the relationship, relying on physical and built elements. The material produced by architects can appear fairly compelling if one assumes that elements of built form in and of themselves constitute a "culture" or "tradition" which can be learned, abstracted, and reproduced. Similarly, studies of activities (sleeping, eating, working, and so on) and the physical requirements thereof can be useful in understanding their space requirements, but pointless if there is no variability in either the activities or their requirements between cultures, or if one standard is thought to be universally valid. In addition, buildings have been shown to be sym-

bolic and ritual acts (Douglas:1972) to convey meaning (Eco:1973; Rapoport:1976), and to be instruments of power and politics (Mazumdar & Mazumdar:1984b); and space needs are not "determined" by activities alone, and that utilizing this mode of reasoning itself involves taking a philosophical position—that of functionalism. As a result, much of such work is not very useful in culture-responsive design.

### Conclusion

In order to resolve the major question "Whose values should architecture cater to and to what extent?" we have recommended that architects consider responsiveness to situated cultural values as a minimum and have advocated that architects accept the greater challenge—make a paradigm shift from adding culture as another lower order variable, to one of understanding and treating architecture as an artifact of culture—and use their creativity towards creative, syncretic, synergistic designs that are responsive to cultural values and yet innovative. Taking an anti-positivist, nominalist, idiographic approach to understand and respond to situated cultural values has been proposed. Our recommendation involves, in effect, utilizing "double vision" of simultaneously carrying out an action and stepping out of it all and seeing from another plane, or vantage point, what values are being utilized and whose are being catered to. Knowing what one is doing and how it is to affect others concurrent to the action itself, therein lies the really challenging and deeply imaginative task.

Most current educational programs do not prepare students for such cultural investigation, nor provide them with the alternate viewpoints available or the "double vision" mentioned. This is in spite of the possibility of designing well-structured and interesting courses out of currently available materials and literature. Informal attempts are being made at several universities to teach culture-responsive design; these are mostly piecemeal in nature, which constitute a beginning. Formal programs based on the philosophical viewpoint recommended need to be established. This is hampered because of lack of impetus for and funding of such programs. Formal programs will allow further research and development of appropriate methodologies, substantive information, and training programs. Meanwhile, this essay and the following selected bibliography can be considered a beginning—and hopefully useful in aiding further thought and action toward a more educated and sensitive approach to design, in practice as well as in research and teaching.<sup>11</sup>

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## Notes

1 Here, culture is taken to be sets of values, beliefs, norms, and preferences which affect choice regarding social relationships, life style, and particularly those which affect choice and interactions regarding the built environment. Cultures are not only national, or regional, but can also exist in the community, organization, or workplace. Subculture indicates a subgroup having unique values, some of which may be at variance or conflict with that of other subgroups, while some values may be shared by a larger group. This does not necessarily mean that the more widespread and general values need higher priority or more importance. Culture is taken to be more

pervasive, as opposed to societal values which may be localized or temporal. Values are sets of preferences, positive or negative, shared by the culture. Situated or autochthonous indicates that what is being investigated and found is particular to and shared by the people (where the building is to be located) being studied and may not be valid or generalizable for other cultures.

2 Such accusations of architects by those who think that architecture "ought" to be suitable to "human behavioral needs" raise several assumptive level questions. Ought architecture to cater only to "behavioral needs" (e.g., affordance Lang:1980) and not to ideas of beauty (Pressman & Tennyson:1983), structure, cost, materials, etc? Who determines "needs" and how is another important question oft neglected. Such studies (Fried:1963; Gans:1968) point out that values of residents can differ from those of the planners and that values change over time. Does architecture, then, require a period of getting "accustomed" or of "acclimatization?" Should there be a time span during or after which architecture may be considered unresponsive to residents?

3 The belief is that following of professional values will lead to greater good for all, and individual instances of lack of assistance seem unimportant when compared to the greater good. The relative importance of either needs to be weighed carefully with regard to criticism of individual instances. While social scientists thus expect architects to perform socially conscious and responsive roles (Gutman:1972; Gans:1966; Broady:1966), social scientists themselves have been much less responsive to appeals for information (Broady:1966) and brushed aside such criticism as irrelevant (see note 9) or unimportant (Broady:1966), and have instead criticized architects' language (Broady:1966; Bechtel:1983), and manner of work (Sommer:1972:71).

4 The heart of the problem with architectural education and criticisms of it relate to what about architectural practice and the teaching of it can be generalizable and what is local (Habracken:1983), particular, situated, autochthonous, or culture specific: the methodology of design? the process of design? the substantive information that architects carry? the perception of architecture? the meaning of architecture? the symbolics of architecture? the building techniques? the clients of architecture? the people who receive and use the buildings? The stress, so far, seems to have been on a positivist, realist, nomothetic perspective of architecture stressing only

generalizable aspects. This paper presents an alternate viewpoint.

- 5 Books on methodology by anthropologists (Pelto & Pelto:1983) and by sociologists (Johnson:1975) give detailed accounts of gaining entry, recording, observing, taking notes, participating, on questions of ethics, etc. Most leave the pure disciplinarian in mind as the reader and stress accuracy and purity rather than greater validity. A few often-neglected elements of applied research are being mentioned here.
- 6 Different arrangements have been proposed by others. Consulting relationships of architects with social scientists have been proposed (Deasy:1970). However, given the philosophical distinctions among social scientists, a consulting relationship has to be carefully worked out since social scientists may be unable to meet or answer the architect's questions or demands for certain kinds of information. A good consulting relationship, such as that of Deasy (arch.)—Laswell (soc.) and perhaps Warfield (arch.)—Lathrap (anthro.), can be quite fruitful. Care should be exercised that neither the social scientist nor the architect takes a condescending attitude towards the other (as in Broady:1966 or in the Howard Roark model of Ayn Rand in her novel, *The Fountainhead*). Team relationship (Caudill:1971) can also be fruitful if team members attempt to understand each other. Cultural saturation (Warfield:1983) can also be a useful process if site visits are not practicable. Personal and firsthand investigations by architects have always been found to be useful (Deasy:1970; Caudill:1971) and here the process is elaborated.
- 7 The essential differences of the philosophical assumptions are along an objective—subjective (Burrell & Morgan:1979) dimension regarding ontology, epistemology, methodology, and human nature. Assumptions concerning the nature of reality or the phenomena under investigation, i.e., ontology, can be one of realism—the view that objects of sense perception or cognition exist independently of the mind and the individual, or of nominalism—the view that universal essences independent of the mind or the individual experiencing it do not exist. Assumptions about the grounds of knowledge about the phenomenon and how one might acquire and convey it, i.e., epistemology, can be one of positivism—the view that knowledge is independent of the observer, hard, real, objectively verifiable, and transmittable, or of anti-positivism, which takes the view that knowledge is based in the observer/participant and of a unique and personal nature.

Assumptions regarding human nature and its environment can be one of determinism, i.e., humans respond mechanistically, and even in a deterministic fashion to their environment, or of voluntarism, which assumes that humans have a free will, are creative, and purposively affect the situation. Methodology can be nomothetic and look for laws, universal or general principles which govern reality, or be idiographic and provide explanation and understanding of what is unique and particular about a phenomenon. For cultural responsiveness, the unique elements become more important, we feel (Mazumdar:1984d:3-5; Burrell & Morgan:1979:1-9; Seamon:1983 & 1984).

- 8 Perhaps further elaboration of standards for good architecture can be made based on technical criteria, on the numbers and kinds of criteria taken into account, on the percentage of users satisfied, along the numbers of criteria a set of users was satisfied, on the level of satisfaction of different sets of users, on level comfort, on level of cultural satisfaction, etc. Should architects set for themselves an error margin, to defend themselves against criticism, knowing that social scientists are satisfied with error margins of 5%, 10%, and even 20%?
- 9 Architects have not understood the culture-architecture relationship and have used their own values, points out Warfield(1983), who proposes a "cultural saturation" approach that involves a partial investigation according to our categorization. It involves obtaining understanding while staying within the currently used paradigm.
- 10 The problem is exacerbated by fundamental differences in the nature of the fields. While social science disciplines are largely nonpragmatist and theory-oriented, architecture is a pragmatist field with a strong practical and application orientation. While the former are largely analysis-oriented and take analysis and theory building as their major goals, the latter's major goals are synthesis, production, and action. Hence, while for social scientists to find and describe the concept of territoriality through study of human behavior may be considered a major contribution, to an architect it is the building of buildings. While it is considered professionally acceptable for social scientists to directly criticize and cite other authors, to professionals, such as architects, such direct criticism may not be acceptable; and while citation may be a way for progress for the social sciences, for pragmatic fields, such as architecture, citation is considered unimportant and may even be difficult to implement.

II A few analogies may be useful. Consider a hypothetical situation where everyone, including architects, were (legally) required to have their homes and offices designed by architects other than themselves. If the client architect had to pay for the building and was not permitted to provide any program stating family and professional values, norms, preferences, and desires, which of the approaches would the client architect like to have the designer follow? As a designer, how would you design? Would you design for a generalized individual; or would you attempt to learn about the values of the culture, the client, the user? Would you carry the belief that a design worked out logically *had* to be acceptable because it would be superior by any set of standards; or would you realize that, even in this, your own standards were being brought into play? Would you rather be like the fox and the stork of the fable?

# Mediterranean Indigenous Architecture Revisited

James P. Warfield

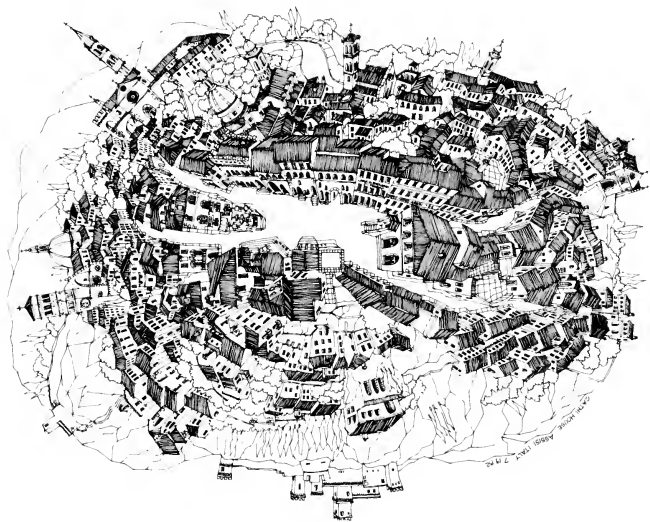
But if it is only a small town or fortification, it will be better not for the streets to run straight to the gates, but to have them wind about like the course of a river. Besides appearing so much longer, they will add to the idea of greatness of the town. They will likewise conduce very much to beauty and convenience. Moreover, this winding of the streets will make the passenger at every step discover a new structure. . . . There will be no house but what, in some part of the day, will enjoy some sun, nor will they be without gentle breezes. (Alberti)

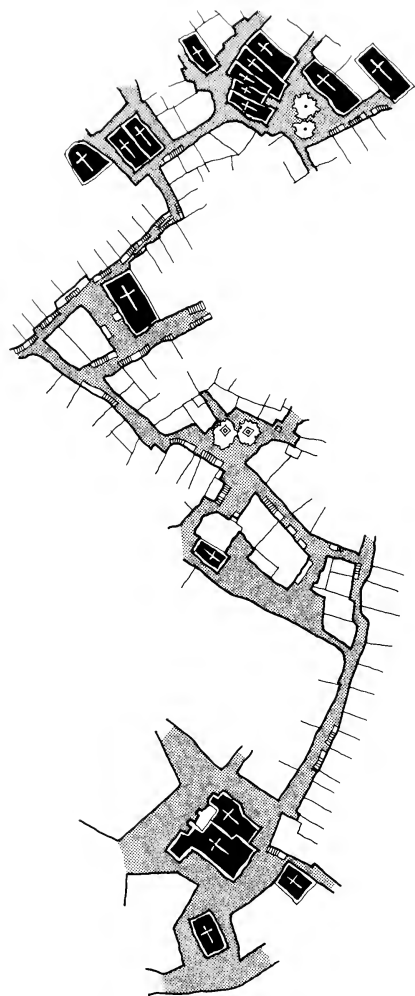
Of all the recurring topics of the fascination explored by 20th century architects for reference or inspiration, none is more enigmatic than the hill towns of the Mediterranean. In an architectural epoch which began with the viewpoint that architecture is a "machine for living" and has advanced to an age of computer technology, space age materials, and critical path planning, what continues to draw architects to study these tightly clustered, irregularly planned, spontaneously developed anachronisms? Is it romanticism? Perhaps for some, but not many. Architects are, by and large, by nature realists, rational thinkers, and problem solvers. Even one of the most manneristic architects of our profession, Paul Rudolph, describes romanticism as "fuzzy thinking." Yet, not unlike the Primitivists Picasso, Gauguin, Nolde, Matisse, and others, who drew inspiration from the indigenous art of Africa and Oceania, so numerous stalwarts of 20th century architecture unabashedly cite the Mediterranean vernacular as critical in the shaping of their personal philosophies of architecture. Le Corbusier's travels as a young man in Southern Europe led him to studies of elemental geometric form and to a philosophy of purism which would impact a generation. In the simple geometric forms rendered in white and defined by intense natural light, he found "ordered chaos in the agglomeration of parts." Similarly after traveling among the Greek

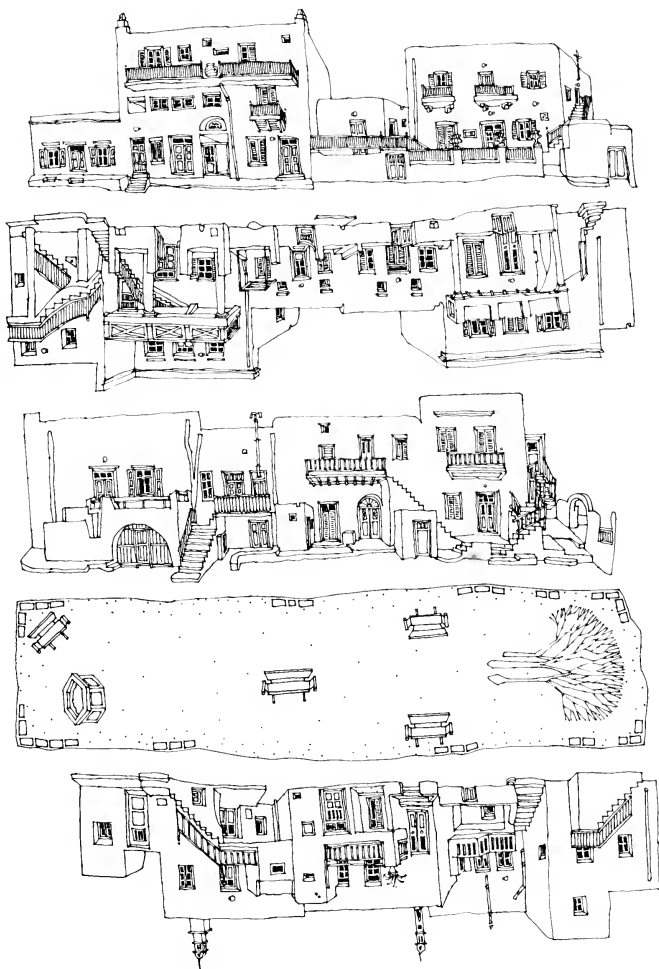
islands, Edward Larabee Barnes expressed the principle of architectural continuity by use of fewer materials and the elimination of expressed articulation, "emphasis upon what is alike rather than different." Nor has the Mediterranean vernacular been ignored as a theme of architectural exhibits and literature. In 1964, architectural critic Bernard Rudofsky in his exhibit "Architecture without Architects" shook the foundations of accepted architectural thought by utilizing the Mediterranean hill towns, among other examples, to challenge directions in architectural education in general and in the teaching of architectural history specifically. Later that decade, architect Myron Goldfinger published *Villages in the Sun*, a standard which dutifully distills the principles of design utilized in Mediterranean community architecture into understandably usable terms for modern design.

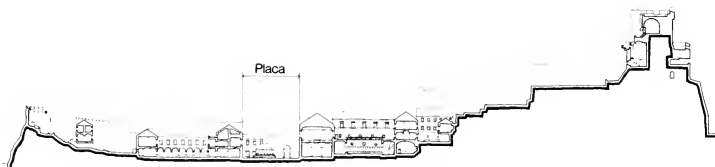
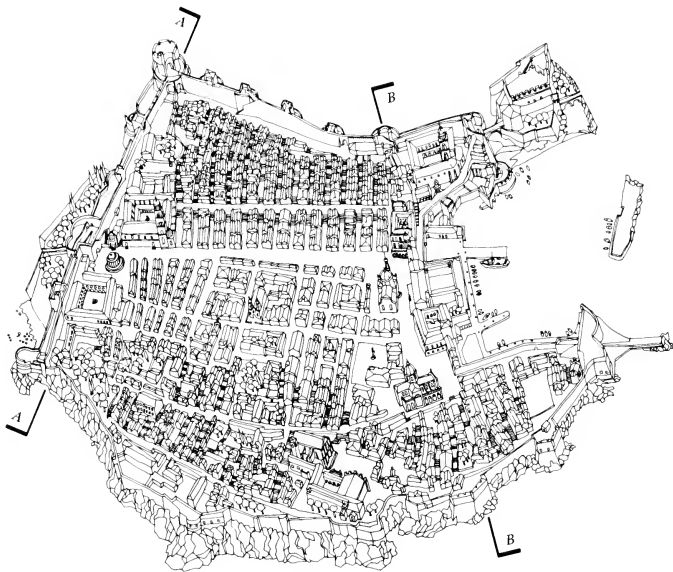
So why, one might ask, would yet another exhibit of Mediterranean hill towns be warranted, let alone compelling? The exhibit "Mediterranean Indigenous Architecture" is both. Last semester this exhibit prepared by two young San Francisco architects, Steven and Cathi House, was featured in the Temple Buell Gallery of the School of Architecture of the University of Illinois at Urbana-Champaign. Prepared from material developed from travel in four Mediterranean countries—Greece, Spain, Italy, and Yugoslavia—this exhibit of architectural drawings and photographs offers a clear and often fresh view of what has become a timeless, even "classic" topic.

Much of the exhibit's appeal derives from the appropriate variety of drawing and photographic techniques employed by the Houses, a variety which is in turn tightly formatted and presented in a cohesive, holistic manner. The drawings are exploratory, each prepared from a carefully selected viewpoint and for a specific purpose. They are successful not only as works of art, but more so for the information and interpretation they provide. Cathi House's one









Section AA

Dubrovnik



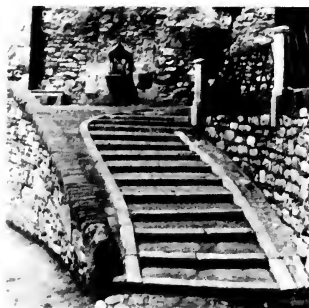


Section BB

Dubrovnik



*Mykonos*



*Assisi*



*Gubbio*

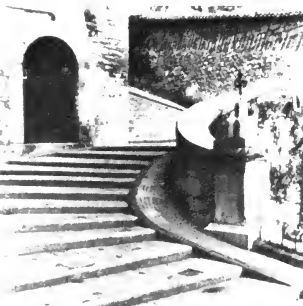
*Mykonos*



*Assisi*



*Gubbio*





## Santorini

point aerial of Assisi, for example, communicates the magic appeal of many Mediterranean hill towns by appropriately emphasizing the openness of the piazza. The piazza is accurately portrayed in her drawing as the major negative space of the city—a tightly defined, uniquely described plaza resulting from the implosion of the negative space which flows from the narrow winding constrained streets and alleys leading into it. By selecting a viewpoint which conceals all but a few of the other negative spaces within the city, Cathi House has produced an interpretive drawing which emphasizes the significance of the piazza by articulating not the piazza space itself, but the dense building forms tightly girded by Assisi's defensive wall. This same spatial concept is communicated at the neighborhood park and street scale in the Houses' drawings of Mykonos.

The free style of the Assisi and Mykonos drawings sharply contrasts that employed by Cathi and Steven House in their collaborative graphic interpretation of Dubrovnik. The presentation of this city is accomplished through a series of finely drafted architectural drawings, plans, and sections, which allow the viewer to understand the scale and fabric of the city and to discover the network of streets and public spaces that are its lifeline. As with the

previously cited examples, the Dubrovnik drawings are a celebration of the *architecture* of the Mediterranean region, an aspect of culture frozen in time, and it is this clear focus that allows the variety of examples, scales, and presentation techniques to work.

If the drawings of Dubrovnik demonstrate the Houses' abilities to produce exact and accurate graphic records for objective interpretation, the panorama of Santorini offers yet another dimension of their work. Drawn as much with the heart as with the hand, this is a whimsy, even romantic, personal view of one of the Mediterranean's most visually charming architectural monuments. Saccharin street scenes of the Greek islands have long been the predominant subject of awed student travelers and tourist artists alike. While some of the Houses' drawings occasionally lean to that genre, they more often transcend the superficiality of that drawing type. They do so by depicting in their Mediterranean examples those qualities of humaneness in architecture that have been the hallmark of a search by many architects since the upheavals of the late 1960s. As with her drawing of Assisi, Cathi House selected a unique viewpoint in order to present the agglomeration of buildings on Santorini as a comprehensible



whole—and to communicate a concept undoubtedly shared and understood by Le Corbusier, Barnes, and countless other architects of generations past. Her interpretation of Santorini is at once a caricature of the Greek vernacular and a testimonial to the spirit of the builders responsible for one of the western world's remarkable indigenous building complexes.

For those among us who feel that the sketch is the most highly interpretative, or perhaps only acceptable medium by which to study architecture, the photos of Steven and Cathi House may provide pause. Their architectural photographs at every scale from the entire city of Trogir to stairway details on Mykonos are evidence that the shutter may be mightier than the pen. In the hands of the Houses, the lens, as the pen, is an exploratory instrument to be utilized to seek out and record new viewpoints. In three panels of the exhibit, the Houses contrast the public stairways of three locations with clarity through creative editing. The stairways of Gubbio and Assisi in Italy and Mykonos in Greece are presented as architectural sculpture to be viewed and experienced. Each carefully selected photo is a profound study of detail and creative expression in solving a most fundamental architectural problem.

In the final analysis, it is perhaps because indigenous Mediterranean architecture exemplifies those qualities that are valued in any architecture (or at least those which achieve the objectives considered essential by 20th century standards) that architects choose to study it. The Mediterranean towns are compact and concisely stated; their concept is clear. They utilize a consistent architectural vocabulary that accounts for great unity within complexity. Their structure and construction are honest, based upon straightforward decisions and local materials. They exhibit a richness of detail and expression, products of craftsmen who understood both the rules of their crafts and the principles of their culture and traditions. Finally, they reflect a humaneness so greatly sought yet seldom achieved in architecture today. That Steven and Cathi House have been able to capture all this to even a small degree is a considerable accomplishment. Their drawings and photographs trigger memories for those who have traveled the Mediterranean and offer no little insight for even those who have not. "Mediterranean Indigenous Architecture" is a meaningful record and a thoughtful interpretation of a classic theme rendered by two talented individuals with an appreciation for and an understanding of a truly important architecture.

# Gottfried Semper: Architecture and the Primitive Hut

Harry Francis  
Mallgrave

Let us look at man in his primitive state without any aid or guidance other than his natural instincts. . . . He wants to make himself a dwelling that protects but does not bury him. Some fallen branches in the forest are the right material for his purpose; he chooses four of the strongest, raises them upright and arranges them in a square; across their top he lays four other branches; on these he hoists from two sides yet another row of branches which, inclining towards each other, meet at their highest point. He then covers this kind of roof with leaves so closely packed that neither sun nor rain can penetrate. Thus, man is housed. (M.-A. Laugier, *Essay on Architecture*, 1753, Herrmann trans.)

Amid the pomp and glitter on display at the London Great Exhibition of 1851 there stood a model of an indian's hut from the Caribbean island of Trinidad, equipped with life-sized figures and household utensils. In plan the hut was a simple rectangle raised on a terrace and divided into two rooms, one of which contained a small circular hearth. The timber-and-spar roof was supported on bamboo posts, tied together with coconut hemp, and filled in with palm leaves. The walls were formed of suspended wicker mats, diagonally plaited with contrasting colors. To the lay English visitor to the exhibition, the hut served no doubt as an exotic and perhaps amusing reminder of the reach of Her Britannic Majesty's colonial arms. However, to a German political refugee then residing in London, the "Caribb Cottage" provided a remarkable ethnographic demonstration of the architectural theory he had developed over the past three years. The architect-in-exile, the former professor at the Dresden Academy and designer of that city's famed Opera and Art Gallery, was Gottfried Semper.

The primitive hut had long served as a point of speculation among architects.<sup>1</sup> Vitruvius records the

classical fascination with its appearance, and by the middle of the 18th century, this fascination had grown to a near obsession.<sup>2</sup> The Abbe Marc-Antoine Laugier opened his *Essay on Architecture* with the stark passage quoted above, then went on to characterize the hut not, as previously, as an indicator of man's constructive progress, but as a notational paradigm underlying architecture itself: the model of what is *essential* to this art.

The timing of Laugier's speculative foray into the past—falling as it did between Jean-Jacques Rousseau's two *Discourses* to the Dijon Academy—was hardly coincidental.<sup>3</sup> "Primitive man" for these founders of the Enlightenment possessed something of an aura, a demeanor of nobility. Unsullied by social custom and vagrant thinking, he behaved naturally, truthfully; likewise, his architecture must be truthful. Thus the tree branches he assembled betoken columns, entablature, and pediments, and only these elements, as a consequence, can contribute to the *beauty* of an edifice. Laugier admitted walls, doors, and windows to architecture only under the suspect heading of *license*; all else he relegated to the specious category of *caprice*.

Laugier was certainly the most popular critic in France in the decade of the 1750s, however to the generation that matured in the late 1760s and 1770s—that urbane generation which fell into a swoon over the Parisian townhouses of Claude-Nicholas Ledoux—his strictures came to be considered perhaps too licit. It was not until the eve of the French Revolution, in fact, that another theorist, the young sculptor Antoine-Chrysostome Quatremere de Quincy, attempted to reconcile Laugier's primitive-hut reforms with the more voluble currents of French Neoclassicism.<sup>4</sup> Once again, the "nustic cabin" assumed center stage.

Quatremere de Quincy bemoaned in general the



1. Frontispiece to Laugier's 2nd edition of *Essai sur l'Architecture* (1755).

devaluation of meaning within the traditional language of architecture, and he sought to deprecate this trend by reaffirming the descent of architecture's elocutionary role from the hut. Quatremere preferred to speak of the hut as a "type" rather than as a "model"; the former signified for him an idea or logical process, rather than a real of imitative structure.<sup>5</sup> Architecture, he reasoned, also had two other types: the cave and the tent, which corresponded in early times to the modes of life of hunters and shepherds. However, the architectural possibilities of both fell short of the cabin.

The cave (the type for Egyptian and Indian architecture) was finite in formal development, massive and continuous in spatial definition. The tent (the type for Chinese architecture) lacked solidity, permanence, and even the appearance of reality. By contrast, the rustic cabin was founded in carpentry, thus it joined solidity with variety, proffered a profuse combination of parts, and lent itself to ornamental exploitation. As proto-monumental form, it developed logical projections and moldings, a rational distribution of paneling, a structural relation of parts, and a variety and unity of effects. In short, these conditions precluded this type from devolving into wanton decoration, so that "one must affirm that only the school of carpentry is able to make architecture a rational art."<sup>6</sup>

Given this rational basis, however, the hut for Quatremere de Quincy remained only proto-monumental (Latin *Monumentum*, from *monere*, to remind), because it lacked permanence. Hence, for architecture to come into existence as an art, it was necessary for this type to transpose itself materially from wood to stone. Moreover (and this is where Quatremere enlarges upon Laugier's scheme), it is this specific transposition, this *fiction* of stone imitating wooden forms that allows architecture to win its essential meaning. In other words, architecture becomes an

art when it transcends its former material limitations and engages the spectator in its allegorical play on itself, thereby revealing itself through its own metaphor:

In effect, it will take little to recognize that the essence of architecture and the most satisfactory way it pleases us is in raising this pleasant fiction, this ingenious mask, which, in association with the other arts, permits it to appear under their theater, and furnishes it with an occasion to rival them as well.<sup>7</sup>

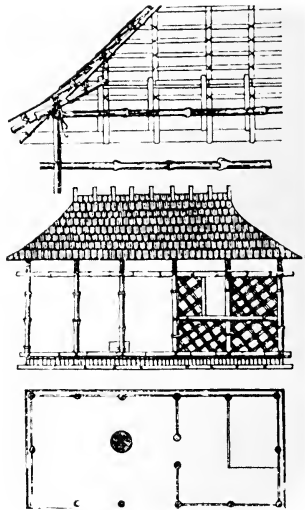
By the more positivistic and utilitarian standards of the late 19th and early 20th centuries, Quatremere de Quincy's "ingenious mask" would come to be judged either as frivolous, or as a shameful advocacy of material dishonesty. Such judgments, however, did belie the subtlety of his analysis. The ideal he held in view was the trabecated logic of the Greek pentelic temple, and in extracting what he believed to be its fictive character (its material and logical deceit) he felt he had exposed as well what was fundamental to all art. Even Quatremere's adversaries of the next generation, those who were bent on dismantling his neoclassical edifice, were not unsympathetic to such a view of art. In 1860 Gottfried Semper could reiterate this artistic conception, even state it more forcefully:

I think that camouflages and masks are as old as human civilization and that the pleasure of both is identical with the pleasure created for man by sculptors, painters, architects, poets, musicians, dramatists, in short by artists. Every work of art and artistic genius presupposes a certain carnival frame of mind, or to express myself in contemporary terms: the haze of carnival candles is the true atmosphere of art. The denial of reality, or the material, is necessary, if the form should emerge as a meaningful symbol and as an autonomous creation of man.<sup>8</sup>

Although Semper's architectural theory also centered on the problem of the "primitive hut," the anthropological and archaeological developments of the preceding decades provided him with an entirely different vantage point. Semper's thinking on the hut, in fact, unfolded in two stages: first, the hut as an *ethnological fact* still seen in the dwellings of the so-called primitive societies of the world and delineating man's early industrial or artistic exercises; second, the hut as an *ornamental analogue*, rendering transparent man's ornamental instinct and giving rise to monumental form.

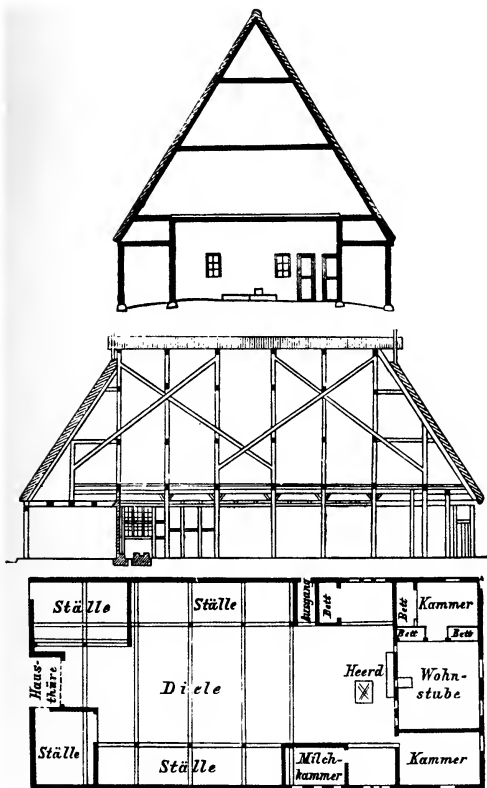
The anthropological premises for Semper's ideas

were gained from his reading of Gustav Klemm's *Allgemeine Cultur-Geschichte der Menschheit* (General Cultural History of Mankind).<sup>9</sup> The first of Klemm's ten volumes appeared in Dresden in 1843, and his discursive portrayals of the "primitive" cultures of Asia, Africa, the Americas, and the South Pacific provided Semper with a wealth of ethnographic data upon which to draw.<sup>10</sup> In Klemm's general theory, he divided cultures into three stages, with man progressing from patriarchal and tribal federations to secular or religious autocratic systems (this stage giving rise to culture), to a third stage of increasing individual freedom, a freedom that started in Persia and Greece and more recently finds its fulfillment in Europe.<sup>11</sup>



2. A Caribbean hut displayed at the Great Exhibition of 1851 and cited by Semper on several occasions as indicating the prototypical industrial motives: ceramic hearth set on terrace, bamboo posts and spar roof, wocen mat-walls. (G. Semper, *Der Stil*, Vol. II, p. 276)





3. Saxon roof-house. (C. Semper, *Kleine Schriften*, p. 371)

In the second half of the 1840s, Semper's lectures at the Dresden Academy veered from his descriptive summaries of building types in early societies and began to reflect upon the *prehistorical* abode—specifically, the “original forms” (*Urformen*) or *motives* underlying the primordial dwelling.<sup>12</sup> Initially he defined the “vertical enclosure” and the “roof” as fundamental architectural concepts; in a lecture given in 1848, he identified the former “the first element of antique architecture” among the southern people, and as the “original seed” of theme for the dwelling, the temple and the city.<sup>13</sup> The enclosure acquired its phenomenological value because it created a “new spatiality” (an inner world separated and protected from the outer), and also because it surrounded the *hearth*: the spiritual centerpoint of the dwelling.

As Semper's theory took shape in 1849-50, the “crackling flame” was the social embryo around which primitive man gathered after the chase for food and rest.<sup>14</sup> In response to climatic and environmental threats against this flame (rather than to his own need for safety and comfort), he began to erect the elementary building elements: *mats* woven with leaves, bast, or animal parts, timber scaffolds for *roofs*, earthen or masonry mounds for *terraces*. Thus the ideas of walling, roofing, and terracing joined hearth-gathering as the four intentional elements of form-making, constituting *essential* architectural thinking. As civilizations began to develop, these motives for Semper became hermeneutic devices through which a given culture could be read.

Semper interpreted the tall roof-houses of Saxony, Holstein, and Schleswig, for example, as northern descendants of the prototypical hut, formed by timbers originally covering an excavation in the soil. Over time these dwellings came to be placed on foundations or basements, and of the four elements the roof achieved thematic dominance: “They became little worlds for themselves, excluding all what does not belong to the family, with the only exception of the friendly daylight, passing through holes left in the walls. The family and the beasts take equal part of the protecting roof.”<sup>15</sup>

However, these northern huts for Semper, like Quatremere de Quincy, did not achieve architectural monumentality. Architecture as an art came into being in the south, in the deserts and river valleys of Palestine, Egypt, and Mesopotamia. The theme for southern architecture was the idea of walling, what Semper called the “courtyard style.” This style attained its purest expression in the processional yards of the Egyptian temple complexes (formerly open or covered with canvas, Semper believed, later roofed), such as at Karnac and Luxor. However, it

4. The excavation of the Assyrian bas-reliefs. (H. Layard, *Nineveh and its Remains*, Vol. II)



was within the Mesopotamian valley that this theme found its richest expression.

The unearthing of the Assyrian cities of Nineveh, Nimrud, and Khorsabad in the 1840s profoundly affected Semper's theory.<sup>66</sup> This civilization had been known previously only through the effulgent descriptions of Herodotus, Diodorus Siculus, and the Old Testament, and the actual excavation of the colossal winged bulls and lions, of the delicately chiseled alabaster wall-panels, evoked a level of excitement in Europe equal to the discovery of Herculaneum and Pompeii a century earlier. According to the Biblical chronology, Assyria joined Egypt and Israel as the third cradle of civilization: that whose artistic splendor and accomplishment presaged the development of Persian and Greek art.<sup>67</sup>

Semper read each of his fundamental motives into his reconstruction of Assyrian architecture. The original Semitic inhabitants of this region had constructed a series of canals and terraces in order to irrigate the land, then they were conquered by invaders from the mountainous north who assimilated the culture.<sup>68</sup> The result architecturally was a mixture of primary motives dominated by the terrace and the wall: the former culminating in the stepped pyramids, the latter developing as a series of periboli, the inner ring of which defined the aulic and religious precincts of their cities. The roof, the motive acquired from the hut-dwelling invaders, preserved itself only symbolically as the gabled sanctuary set atop the ziggurat. In front of this deity's house was placed the sacrificial altar, the transmutation of the social flame.

The crucial aspect of Semper's theory which he drew from the Assyrian findings was the notion of *Bekleidung*, literally "coating" or "dressing." In his theory, the original spatial dividers for the dwelling were woven mats or wickerworks, as in the hut from Trinidad; in Assyrian architecture this industrial process had succeeded to the accomplished level of their famed oriental tapestries, hung vertically over crude masonry wall-props, as well as serving as carpets. Later these tapestries became replaced by more magnificent and durable wall surrogates, such as panels of wood, metal, and alabaster. In each case, the dressing preserved the visual image of the original material as a residue—the dressing served as the spatial and architectural essence of the wall and rendered the wall-props themselves secondary in meaning. From this, Semper drew a far-reaching conclusion:

The artists who created the painted or sculptured decoration on wood, stucco, stone,

5. The Assyrian tapestry-theme chiseled in an alabaster slab. (P.E. Botta, *Monument de Nive*, Atlas, plate 12)



or metal, following a tradition that they were hardly conscious of, imitated the colorful embroideries of the age-old carpet-walls. The whole system of oriental polychromy and consequently also the art of painting and of bas-reliefs arose from the looms and vats of the industrious Assyrians or from the discoveries of prehistoric people who preceded them.<sup>19</sup>

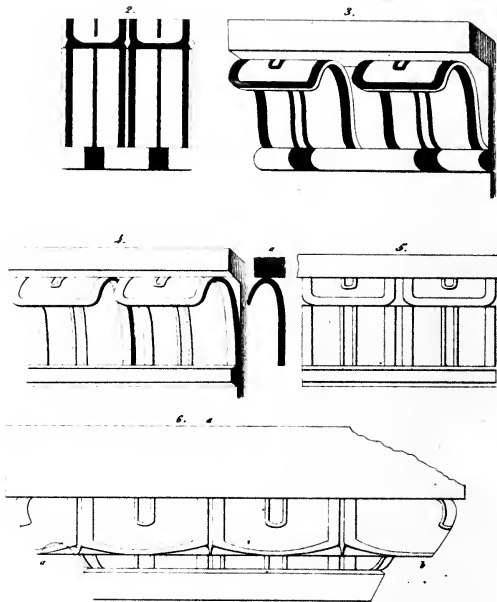
Such a thesis, the derivation of the fine arts from the more primitive art of textile-making, was destined to come under attack later in the century when the first neolithic cave paintings and figurines were discovered; however, Semper's ideas on polychromy and *Bekleidung* did not stop here. In a later book, he embarked on a 296-page excursus on his "dressing" theme, a process which for him was consummated in the resplendent polychrome productions of 5th-century Greece.<sup>20</sup> Here the *painted* color he believed had coated the Hellenic temples not only constituted an artistic advance over the Assyrian tapestry-panels in the "emancipation of form from materials and from naked need," but it defined as well the crux of the artistic act:

Following this tendency, the Hellenic building principle vindicated and especially nurtured color as the subtlest, most bodiless coating. It was the most perfect means to do away with reality. While it dressed the material it was itself immaterial. It also corresponded to the former freer tendencies of Hellenic art.<sup>21</sup>

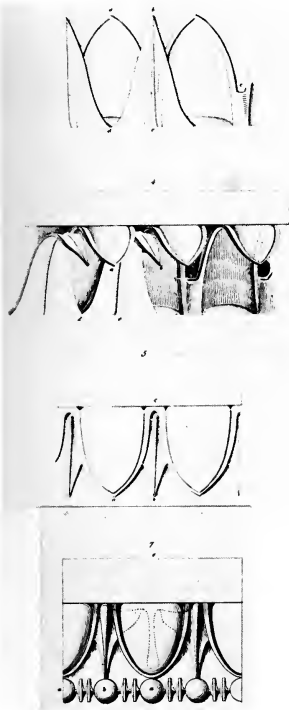
Although the idea of coating continued to dominate Semper's architectural theory, his thinking in the 1850s did expand in other ways. The importance he earlier attached to the primitive hut as an ethnological fact gave way, in part, to an investigation of its mystic-poetic meaning—that is, to its *symbolic* value, especially within early hieratic societies.

In a lecture given in London in 1854, Semper reflected upon the "plastical life" of ancient monuments, how each work related its own history, its reason for existence, the function of its various parts, and their relation to each other and to the whole:

Their tales were made in a language consisting of certain characteristic types, performed on the surfaces of the naked schematical forms of the building. And this symbolical language was found already almost entirely prepared for this purpose by the other branches of industry, which, it must be known, had reached to a high degree of practical and even of artistic perfection long before the building of monuments was thought of.<sup>22</sup>



6. Row of leaves slightly burdened and forming the profile of a Doric cyma. (C. Botticher, *Die Tektonik der Hellenen*, Atlas, plate I)



7. Two rows of leaves forming an egg-and-dart motif on the Doric echinus. (C. Botticher, *Die Tektonik der Hellenen*, Atlas, plate II)

Semper went on in this lecture to expound upon the development of the Greek cyma and echinus, both formed, he believed, by the earlier application of a band of leaves onto the structure.<sup>23</sup> When the band was located in the upper part of the entablature or in the cyma, the individual leaves assumed a complex curve signifying "upright-standing and free-finishing." When located in the lower part of the order, the leaves took on a more severe curvature. A double band of leaves folded under an extreme load, as in a Doric echinus, folded completely over itself and formed the egg-and-dart motif. This symbolic type later became imitated in stone, yet "the leaves are the real schemes for the idea, the molding is only the plastical *ébauche* (profile) of the former, which never failed to be represented on the molding, either painted or sculptured and then painted."<sup>24</sup>

In the following year, Semper expanded his conception and promised his publisher a work that would embrace "the entire world of form."<sup>25</sup> At the heart of his new formulation was his grouping of architecture not with painting and sculpture as plastic arts, but with dance and music as "tectonic arts"—tectonic in the sense that these arts are *decorative* in the formal manipulation of their elements. These arts are also "cosmic": derived from the Greek word *cosmos*, meaning "world order and ornament." In tectonic creation, man reveals his instinct to decorate *lawfully*; moreover, "the harmony of the tectonic creation of art with the general laws of nature is ornament, and where man ornaments, in those objects he clearly gives prominence, more or less consciously, to natural lawfulness."<sup>26</sup>

Semper was obviously employing the term "ornament" in its broadest sense, as the most general imprint of the mind of man upon form. Yet he also used the word in its more restrictive meaning, as the specific imposition of value upon form: "when I decorate, be it something in part or in whole, alive or dead, I impart it with a certain individual existence; with decoration I make it the centerpoint of relationships among forms and give it value. The object becomes individualized, and in a certain poetic sense is raised to the level of a person."<sup>27</sup>

This theme of ornament is what pervades Semper's main, but incomplete, work of 1860-63, *Der Stil in den technischen und tektonischen Künsten oder praktische Ästhetik* (Style in the Technical and Tectonic Arts or Practical Aesthetics).<sup>28</sup> These two lengthy volumes were structured according to the industrial categories of textiles (walling), ceramics (hearth-making), wood framing (roofing), and masonry (terracing); but Semper's aim was to reduce these processes to more fundamental artistic activities from which higher style laws may be seen.



8. *The wreath, a primal artistic creation. (G. Semper, Der Stil, Vol. I, p. 14)*



9. *The wall as "dressing". Eidgenössische Technische Hochschule, Zurich. (Designed 1855 by Semper)*



10. *The wall and mask "dressed". Burgtheater, Vienna (Designed 1873 by Semper, executed by Hasenauer)*

Matting and wickerworks, for instance, arose from the basic urge to intertwine pliable, stringy, or tensile materials, hence the wreath and the knot (decorative and lawful) step forth as primal artistic essays. Thus architecture's *radical* meaning is grounded in the primitive beat of an oar, in the knotting of a daisy chain, in the joining of hands in a circular dance.

Yet, the book *Der Stil* was, and remains, an excessively opaque work to read and interpret; and Semper's theory, as I suggested earlier, came under hostile scrutiny by art historians at the end of the 19th century.<sup>29</sup> Still, Semper found his architectural advocates—notably, Hendrik Berlage, Bernard Maybeck, John Root, Otto Wagner, and Adolf Loos.<sup>30</sup>

The case with Loos is especially intriguing. Often touted as a hardheaded modernist and arch-opponent of all ornament, Loos in 1895 wrote an article in which he not only reaffirmed the "coating" or cladding thesis of Semper, but also its underlying premise: that the creation of ornament or "cladding is older even than structure."<sup>31</sup>

For a true modernist, such an acknowledgment would be as emotional as confessing to a murder; and with regard to Loos, I suspect we are guilty of our own "Papuan" crime of reading him selectively. Lewis Mumford once noted that it is an axiom of history that every generation revolts against its fathers and makes peace with its grandfathers, however I am not sure we are capable any longer of fulfilling the second half of this formula. If Semper and his near hallucinatory effort to delve from the wall dressing the residual fibers of its formal development appears enigmatic to us, then Loos' infatuation with chromatic marble dressings lavish and often juxtaposed with bare stucco walls seems only slightly less so.

It appears that the haze of our carnival candles has turned limpid in our harsh daylight, and that our discarded camouflages and masks have grown musty in our attics. Even the more effusive of our post-modern productions speak demurely—at least by the frolicsome standards of Semper and Loos.

## Mallgrave

### Footnotes

<sup>1</sup> The major work addressing this theme is Joseph Rykwert's *On Adam's House in Paradise*, New York, 1972.

<sup>2</sup> See Vitruvius, Book II, Chapter I.

- 3 Laugier's *Essay* has been translated by Wolfgang Herrmann and published by Hennessey & Ingalls, Los Angeles, 1977. Rousseau's two essays are entitled "Discourse on the Sciences and Arts" (1750) and "Discourse on the Origin and Foundations of Inequality among Men" (1755). In the first, Rousseau asserts that progress in the sciences and arts both corrupts and enfeebles the soul of man—originally pure; in the second essay, Rousseau posits that all forms of inequality, especially political and economic, arise with man's socialization and were unknown in his natural state.
- 4 A.C. Quatremere de Quincy, *De l'Architecture Egyptienne, considerée dans son origine, ses principes et son gout, et comparée sous les memes rapports a l'Architecture Grecque*, Paris, 1785.
- 5 See also Quatremere's articles "Cabane" in *Encyclopedie Methodique. Architecture* (Paris, 1788) and "Type" in *Dictionnaire historique d'architecture* (Paris, 1832).
- 6 *De l'Architecture Egyptienne*, p.24.
- 7 *Ibid.*, p.242.
- 8 G. Semper, *Der Stil in den technischen und tektonischen Künsten oder praktische Aesthetik*, Frankfurt a.M., 1860-63, vol. 1, p.231 n.2.
- 9 Both Klemm and Semper were living in Dresden during the 1830s and 1840s. Klemm was the royal librarian at the Saxon Court. Klemm and Semper undoubtedly had points of contact during these years, although any connection between the two men probably was not intimate. See my "Gustav Klemm and Gottfried Semper: The Meeting of Ethnological and Architectural Theory", in a forthcoming issue of *RES*.
- 10 I am using the term "primitive" in this article in its customary 19th-century usage.
- 11 See G. Klemm, *Cultur-Geschichte*, vol. 1, pp.22-23.
- 12 Semper's lecture course at the Academy in 1840/41 consisted of an eleven-fold divisioning of buildings, commencing with the Greek dwelling. See MSS.24-28, ETH-Zurich (Semper Archives).
- 13 MS.31 and MS.33, ETH-Zurich.
- 14 Semper's lengthy and unfinished manuscript of 1849-50, *Vergleichende Baulehre*, has been recently published in part by Wolfgang Herrmann. See his English translation in *Gottfried Semper: In Search of Architecture* (Cambridge, Mass. and London: 1984), pp.189-218. The basics of Semper's theory was formed by 1849, and nearly all of his London material derives from the earlier manuscript.
- 15 MS. 138, fol.3, ETH-Zurich. This lecture was translated into German for *Gottfried Semper Kleine Schriften* (Berlin and Stuttgart, 1884), pp.369-382.
- 16 The Assyrian-Babylonian centers of civilization, cultures which were not clearly distinguished in the 19th century, possess an extremely complex history, dating back to the fifth millennium. The last Assyrian empire dated from the mid-14th century B.C. until the total collapse of the empire in the 7th century, culminating with the fall and destruction of Nineveh in 606 B.C. In 1842 the French consul at Mosul, Paul Emile Botta, uncovered the gypsum slabs at Khorsabad, which he believed to be the city of Nineveh. The Englishman Henry Layard followed a few years later with the excavations at Nimrud—a site which he believed to be Nineveh. Layard found the famed city on a second trip to the area in 1849-50. Most of Botta's and Layard's booty was carted back to the Louvre and British Museum, where it remains today.
- 17 The most prominent anthropologist of this period was Henry Prichard. In his *Natural History of Man* (1843), he, working within the Biblical account, argued for three cradles of civilization: the *Semitic* or Syro-Arabian nation, the *Japetic* or Indo-European stock, and the land of *Ham* or Egypt. The Semitic/Syrian shepherds promoted a way of life that culminated in "the splendour and luxury of Nineveh and Babylon."
- 18 The racial make-up of this region is a problem that still haunts modern scholarship. See T. Jacobsen, "The Assumed Conflict of Sumerians and Semites in Early Mesopotamian History," *Journal of the American Oriental Society*, 59, 1939, pp.485-95.
- 19 See W. Herrmann, *Gottfried Semper: In Search of Architecture*, p.206.
- 20 Since the early 1830s, Semper was convinced that the temples of high Greek architecture were fully painted. See his reconstruction of the Parthenon in *Gottfried Semper Zeichnerischer Nachlass an der ETH Zurich* (Basel and Stuttgart: 1974), MS.215-1-2 and MS.215-1-3.



- 21 G. Semper, *Der Stil*, vol. I, p. 445.
- 22 MS.142, fol.6, ETH-Zurich.
- 23 Semper borrowed his analysis in this passage from the first volume of Carl Botticher's *Die Tektonik der Hellenen* (1842).
- 24 MS.142, fol.13, ETH-Zurich.
- 25 Letter to Eduard Vieweg in August 1855, see W. Herrmann, "Zur Entstehung des Stil" in *Gottfried Semper im Exil* (Basel and Stuttgart: 1977), p.97.
- 26 MS.179, fol.1, ETH-Zurich. See also Herrmann's translation of part of this manuscript, "The Attributes of Formal Beauty", in *Gottfried Semper: In Search of Architecture*, pp.219-244.
- 27 MS.283, fols.19-20, ETH-Zurich.
- 28 The first two volumes of *Der Stil* appeared in Frankfurt in 1860-63. Semper's final volume, which was to apply his theory to contemporary architecture, never appeared.
- 29 The discovery of the paleolithic cave paintings, beginning in 1879, disproved Semper's contention that painting derived from the earlier textile industry. The first historian to comment on this was Alois Riegl, who in his "Introduction" to *Stilfragen* (1893) censured the assertions of the "Semperians"—a qualification he made from the actual theory of Semper. Other historians have not been so perceptive. Lionelli Venturi in *History of Art Criticism* labeled Semper as one who "considers utilitarian character as the only aim of art": a view, unfortunately, which pervades most 20th-century commentary on Semper.
- 30 Otto Wagner paid tribute to Semper in *Moderne Architektur* (1895), although he stressed the "constructive" aspects of Semper's theory. Hendrik Berlage, who had studied at the ETH in Zurich, talked of Semper and Viollet-le Duc as the preminent 19th-century theoreticians in *Gedanken uber Stil in der Baukunst* (1905). Bernard Maybeck began a translation of *Der Stil*, and John Root translated Semper's essay, "Ueber Baustil," as a serial piece for the *Inland Architect* in 1889-90.
- 31 Loos's essay, "The Principle of Cladding" has recently been translated, *Spoken into the Void* (Cambridge, Mass. and London: 1982), pp.66-69, although the translators seem unaware that the essay is directed to Semper's theory. Loos in this

essay makes the distinction between architects who design a room for which a "cladding" is subsequently chosen and the "artist, the architect" who conceives both the cladding and form of the space.

# A Critical Afterthought: Design as Problem Solving

There is an increasing trend to consider design as being synonymous with problem solving. This trend is based on an unquestioning belief in so-called rational procedures and implicitly assumes that a close approximation to scientific methods assures the best possible design solution and that a rigorous application of techniques derived from the sciences could, finally, turn the profession into a modern discipline. It appears necessary to clarify the difference between scientific and design activity.

In general, the sciences can be defined as a system of descriptive propositions about some aspect of nature. The distinction between the social sciences and the natural sciences rests on the fact that the former focuses on the highest organization of nature for its description. Each of the social sciences concentrates on only one differentiating aspect of the total human behavior complex; i.e., all social sciences study the same general subject matter but each from a different angle. Therefore, there are as many social sciences as major viewpoints of social reality.

The descriptive propositions of every science aim at generalization. Scientists are thus uninterested in unique events. Their goal is to find beneath diversity a uniformity that can be classified in a descriptive manner. Various classes are then combined to form broader categories, leading eventually to scientific laws which, in turn, can be connected to others to provide even greater generalization of higher abstraction. It is through such interlocking that a social science creates a system of interrelated propositions which constitutes its body of theory. This process is normally referred to as the construction of theoretical models of the social world. Closer approximation to reality is a continuous effort. The function of research is to test the accuracy of those models and to increase the correlations between these descriptive formulas and social phenomena.

In their efforts to develop theory, the social scientists

do not see its applicability as a main priority. Their concern is with theoretical significance instead of with the maxims of utility. Knowledge for its own sake is the basic principle of scientific investigation, and this is referred to as pure research. There are social scientists, however, who are less interested in this kind of research but who are more interested in the possibility of applying pure knowledge to problem solving. It is the applied research performed by these scientists that provides social science theory with utilitarian characteristics. This difference in emphasis between pure and applied research is responsible for the opinion that two distinct kinds of social science exist: theoretical, or pure social science, on the one hand and applied social science on the other. This belief in an applied social science as being different from a pure social science stimulates the belief that designers can also be applied social scientists or use their activity as a model.

It is admitted that scientists within the same discipline work in different settings and have different immediate objectives, but there is no denying the fact that they all share common ground—both in their methods and in their ultimate results. With regard to methods, both types of scientific inquiry comprise logical and technical operations that are communicable, repeatable, and verifiable. The logical process in applied research is, therefore, also concerned with generalization about classes—that is, with classes of problems rather than unique problems. The only difference in this case, as compared to pure research, may be a narrower definition of the classes. The second point is that applied research is just as theory-related as pure research. In the case of applying scientific theory to problem solving, the validity of the theory will be tested. In other words, if the propositions are accurate, it should be possible to extrapolate from them in order to classify problems and design alternative solutions. If the application of the theory should provide these alternatives, the theory would be validated. Thus, while the im-

mediate purpose of applied research is utilitarian, its ultimate result is to improve and build social science theory. The conclusion, therefore, is that while it is correct that one may distinguish between pure and applied social research, it is erroneous to speak of a pure social science as distinct from an applied social science. A specific, social science discipline must be considered as an entity, and both types of research add to its body of knowledge.

The main objective of the social sciences is the accurate description of the social world, that is, the expansion of theoretical knowledge. By contrast, design's primary objective is to form the human environment in a meaningful way, and to this end all knowledge is subordinated—there is no desire to strive for knowledge for its own sake. While the body of knowledge of a social science discipline consists of laws concerning behavior, the knowledge utilized in design is based on experience, reflection, and intuition. It is not an *absolute* necessity for the designer to establish theoretical links between his designs and their implications and between both and a larger body of knowledge. For the scientists, nothing is completely understood until its relationship to a system of interrelated propositions has been ascertained.

Creativity and the will to expression are the essential characteristics of design activity; therefore, symbolic significance is the aim of design, whereas theoretical significance is the objective of scientific investigation. Admittedly, creativity does occur in scientific enterprises, but, strictly speaking, it is in violation of scientific procedure: the operations must be communicable, repeatable, and verifiable. Creative activity is, at best, communicable, but certainly not verifiable, and repetition diminishes, trivializes, and, ultimately, negates the creative act. Subject-object division is a stringent requirement in scientific activity. Design, on the other hand, attempts to further interaction between the subject and the object to

establish union and harmony between the two. Actually, an inseparable relationship of the two realms is a necessary pre-condition for design—people and places are seen as integral components. The social sciences are interested in the physical manifestations of behavior in its observable parts; architectural inquiry, in the more inward responses to the built environment. Dwelling, according to Heidegger, is a symbiosis between man and environment.

Design activity is, by and large, an individualistic effort; but it is also deeply embedded in social thought and action and, above all, in a shared value system. Design reflects on and expresses the *Zeitgeist*. Even when it opposes the *Zeitgeist*, when it cuts against its grain, it confirms its existence; perhaps, at such times more so than during periods of passive reflection. Similarly, the values on which design is based, or rather with which it operates, can be quite distinct from the value system of its context; nevertheless, they are generated through reaction to this context. Part of the efforts employed in scientific activity are used to exclude influences of the *Zeitgeist* on scientific deliberations and relegate values, feelings, and emotions to the realm of the private or subjective. Value-free conduct is the declared rule for scientists. Also, a specific scientific discipline focuses only on one differentiating aspect in the totality of human behavior—for example, on man's economic behavior. Contrary to that, design must take a holistic approach, foregoing the temptation to choose a few quantifiable dimensions of man for its inquiry.

There is no doubt that certain parts of design activity can be termed problem solving. Yet for the most part, design problems do not have the characteristics of scientific problems, and there are several reasons for this. For any scientific problem, an extensive formulation with all the information necessary for understanding the problem can be provided. In the case of a design problem, the information required

for understanding the problem depends on the idea of solving it. There are no definitive criteria in design for knowing precisely when a solution has been found. No immediate and ultimate tests are available for a design solution as is the case with a scientific solution. Most important of all, however, is the fact that every design problem is essentially unique; that is, despite similarities between a current and previous problem, important differences inevitably exist. There are no classes of problems in the sense that solutions could be applied which fit every instance in a class. It is a principle of science that solutions to problems are only hypotheses that are open for refutation. As a result, scientific operations concentrate on possible refutations. The more a hypothesis withstands various attempts of refutation, the more plausible is its confirmation. In contrast, the approach in design is constructive in the sense that refutations of solutions are not the aim. The objective is to find a convincing or, at least, a workable solution for the problem at hand. Also, one can say that the nature of design problems is such that they quite often defy precise definition.

Finally, there is one more important difference between architectural and scientific activity. Scientific theory is defined through its method. In architectural inquiry, theory is determined by its subject matter; also, the use of quite diverse, or opposing, methods is justifiable, even necessary. The situation in architecture resembles that of literature; theory in the latter case is also not established through its methods, but by its subject. The similarities do not end here. Interpretation and criticism are the main objectives of both theories. Hence, the investigations in architecture and literature are largely of a qualitative nature, whereas scientific inquiry allows only quantitative aspects to be considered. It should be noted, though, that the more literary and architectural theory concentrate on the formal properties of their subject matter, the more they reach the hard ground of scientific inquiry, and the more they begin to correspond to scientific theory.

To summarize, the primary objective of scientific activity is to increase abstract knowledge, whereas the goal of design activity is to find answers to unique and concrete situations, to transcend the realm of problem-solving through symbolic and meaning-endowing efforts, and to give expression to the will to form life.

*Postscript:* It should be pointed out that even if there were enough reasons to support the notion that scientific activity ought to serve as a model for design, recent epistemological developments and results in quantum physics have shattered the positivist foundation of the sciences, including their rationality concept. The so-called rational procedures of the positivist sciences have been declared illusory.

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