

CARDBOARD ARCHITECTURE

House I and House II

"House I" and "House II" were first drafted in November 1969 and April 1970, respectively. They were redrafted and necessarily condensed for later publication.

In this edition the substance of the ideas remains the same as in the first publication. The only intention in the changes which have been made here has been to clarify their content.

At present most buildings are burdened by their very description as "museums" or "country houses" with a weight of cultural meaning which is here meant to be neutralized by the opposition of an equally loaded term. "Cardboard," usually a derogatory term in architectural discussion (as Baroque and Gothic were when first used), is used here deliberately as an ironic and preemptive symbol for my argument.

Cardboard is used to question the nature of our perception of reality and thus the meanings ascribed to reality. Thus it is not so much a metaphor describing the forms of the building but rather its intention. For example, models are often made of cardboard, so the term raises the question of the form in relation to the process of design: is this a building or is it a model?

Cardboard is used to shift the focus from our existing conception of form in an aesthetic and functional context to a consideration of form as a marking or notational system. The use of cardboard attempts to distinguish an aspect of these forms which are designed to act as a signal or a message and at the same time the representation of them as a message.

Cardboard is used to signify the result of the particular way of generating and transforming a series of primitive integer relationships into a more complex set of specific relationships which become the actual building. In this sense cardboard is used to denote the particular deployment of columns, walls, and beams as they define space in a series of thin planar, vertical layers. It is not so much a literal recognition of the actual surfaces as cardboard-like and thus insubstantial but rather is meant to signify the virtual or implied layering which is produced by the particular configuration.

In this context House I and House II are experiments which attempt to translate these concepts into a possible working method and into a physical environment.

House I

There is often an attempt made to rationalize architecture in terms of its program. In a paper given at the Royal Institute of British Architects in 1957, Sir John Summerson represented this position quite explicitly when he attempted to make a case for a theory of architecture with such a programmatic basis. In essence, Summerson said the source of unity in modern architecture is in the social sphere, in other words, in the architect's program. But it would seem that the situation is more complicated than Summerson allowed. For if the program is to sustain such an emphasis, it should be able to specify and distinguish what the facts of a particular situation are, and except for certain physical laws, facts in a programmatic sense are in reality a series of value judgements. Much of the oeuvre of modern architectural theory is involved in a basic dilemma precisely because it has refused to distinguish between problems of fact and problems of value, and, more specifically, because it has refused to recognize problems of form as predicated by anything except ideas of social and technological change or as a matter for stylistic and aesthetic speculation.

A museum as a program offers very little in the way of specific functional requirements which can act as either a suggestion for or limitation to a formal development. This might account for the fact that many of the best museums are ones that have been created in buildings originally designed for other purposes. Equally, since it is difficult to define a precise form from the functional requirements, the form of a museum is often realized as a very idealized shape. Since very little is imposed on the form of a museum by its function, its form may be used to help clarify part of the problem outlined above.

The making of form can, for instance, be considered as a problem of logical consistency, as a consequence of the logical structure inherent in any formal relationship. The making of form in this sense is more than the satisfaction of functional requirements and more than the creation of aesthetically pleasing objects, but rather the exposition of a set of formal relationships.

House I was an attempt to conceive of and understand the physical environment in a logically consistent manner, potentially independent of its function and its meaning. The thesis presented in House I, the Barenholtz Pavilion, is as follows: one way of producing an environment which can accept or give a more precise and richer meaning than at present is to understand the nature of the structure of form itself, as opposed to the relationship of form to function or of form to meaning.

House I posits one alternative to existing conceptions of spatial organization. Here there was an attempt, first, to find ways in which form and space could be structured so that they would produce a set of formal relationships which is the result of the inherent logic in the forms themselves, and, second, to control precisely the logical relationships of forms.

There were three steps in this process in House I. First, an attempt was made to make a distinction between those aspects of form which respond to programmatic and technological requirements and those aspects of form which relate to a logical structure. In order to make this distinction, an attempt was made to reduce or unload the existing meaning of the forms. Second, a formal structure was made from these marks in the actual environment. Third, this formal structure of marks was related to another formal structure of a

more abstract and fundamental nature. The purpose of this procedure was to provide an awareness of formal information latent in any environment that previously was unavailable to the individual.

One aspect of the first step was an attempt to reduce or unload the existing meaning of the forms dictated by function so that the forms could be seen as a series of primitive marks. This was attempted through a manipulation of the relationship of the color, texture, and shape of the built forms. White forms are used in House I to shift our visual perception and conception of such forms; from the perception of a real, tangible, white volumetric architecture to the conception of an abstract, colored planar space; from the polemic of the "white" of the 1920's to the neutrality of "cardboard." The white color and the flat texture are closer to an abstract plane than say a natural wood or a cut stone wall. Also the very fact that the white planes carry a specific meaning related to a known style (the International Style), makes them less likely to take on new meaning. It should even be easier to reduce their existing meaning, as will be seen below, when they are placed in a different context. To this end, color and material will be used in House I as "marking" devices. Traditionally, when white was used, window mullions and handrails were painted black, and planes of primary or pastel colors were introduced for aesthetic effect. In House I, white or black planes are used simply as opposites in a formal structure while grey or clear glass is considered as neutral.

A second aspect of the initial marking process involved the structural elements—the columns and beams. They appear initially to be rather conventional parts of a structural system. However, upon closer inspection this is found not to be the case. It is actually not possible to determine how the structure functions from looking at the columns and beams. All of the apparent structural apparatus—the exposed beams, the freestanding columns—are in fact non-structural. When this is understood, a first step has been taken to unload, albeit in a very primitive way, their structural meaning. While the apparent physical fact is the same whether they are load-bearing or not, their meaning has changed because they are in fact not load-bearing, and thus the intention implied in their use in a particular location must now be considered in a different way. Once one has understood that they are not structural one must ask what are they? Why are they where they are? Take them away, or change their shape, and what have you got?

It can also be asked, why go to all this trouble? If the columns are supposed to be non-structural, why not just cut them off at the top so that we know immediately by the fact that they do not continue to the ceiling that they are not columns but merely a notation for some other purpose? But cutting the columns short of the ceiling would in fact do the opposite of what is intended. It would give the column a further meaning by obviously calling attention to itself as a non-supporting column, whereas it is supposed to be merely one mark or a primitive element in a formal scheme.

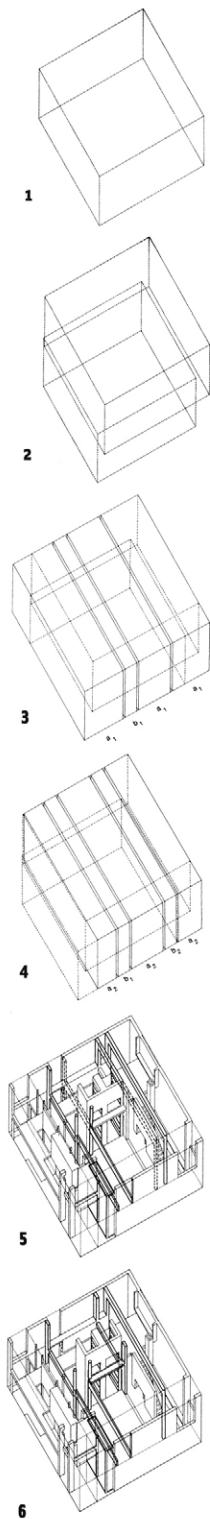
The second intention of this work called for taking these marks and deploying them in such a way so as to make a complete formal structure and to show that this structure was a primary consideration in the design of the whole building. To focus on this required a further shift in the primary conception of an environment; this time from a concern merely

for marking elements and their meaning to a concern for their relationship in a formal structure. To force this shift in House I, the formal structure was in a sense over-stressed or over-articulated so that it would become a dominant aspect of the building. One means to over-stress such a structure was to suggest two simultaneous structures which overlay and interact. These were based on a simple combination of two pairs of formal references: planes and volumes on the one hand, frontal and oblique relationships on the other.

The two formal structures are marked by the columns and beams. These are not deployed in a regular pattern such as a columnar grid, which in such a condition could be seen as a neutral referent, nor are they to be seen as the residue of such a grid, but rather they are intentionally placed in an apparently random order. This intention can be explained in the following way. In the first instance, the space is conceived of as a layering or plaiding (cross layering) of planes. The rectilinear columns and beams are placed so that they will read as a residue of these planes. Conversely, the round columns are used to mark the intersections of two planes, which might possibly be read as joined at this intersection, thus forming volumes if the columns were square. The round column prevents the possible interpretation of columns as residual "corners" of volumes. In the second instance, the three columns (a fourth is marked in the floor), because of their particular disposition, also mark a diagonal system. They can be interpreted in the following way. If both pairs of round columns and beams were seen to span the entire space (fig. 3.5) they would read, despite the roundness of the columns, as part of the frontal layering. By taking away two columns, a round one in the space and one attached to the wall (fig. 3.6) as well as the portions of the beams connecting to these columns, an implied diagonal is created.

Thus the intention was to use the columns and beams to mark two systems without giving preference to either. Together the counterpoint of these two formal systems, the frontal planar layering and the diagonal volumetric shift, overlaid and interacting with one another, make it more difficult to read a single coherent formal system directly from the physical fact. Rather they reinforce the intention that these marks, in order to be understood, first require disengagement of the two systems from one another, an activity which takes place in the mind.

Such a marking of formal relationships, in the actual environment, has usually been the extent of the architect's concern with formal systems. But the present work takes one further step. If we analyze the nature of meaning in any specific context we realize it has two aspects. The first is meaning, which is iconographic and symbolic and derives from the relation of the form to some reference which is external to it. For example, the particular juxtaposition of solids, columns, windows, and railings in Le Corbusier's Villa Savoye is intended as direct recall of the superstructure of the modern ocean liners, and with it all the implications of the sea: discovery, newness, and ultimately man's conquest of nature. But underlying that level of meaning there is another aspect, itself a potential source of information, which conditions any iconographic interpretation; it is derived from, and is in a sense inherent in, the structure of the form. For example, the same juxtaposition of solids, voids, and columns at Poissy gives us cues to entry, sequence of movement, the relationship of open to closed space, of the center to the perimeter, and so forth. This information



3.1-3.6 Peter Eisenman, House I, Mr. and Mrs. Bernard M. Barenholtz, Princeton, New Jersey, 1967-68. Transformational drawings.

can be said to be the product of the internal structure of form itself. While formal relationships can exist in an environment at a real, actual level, where an individual is aware of them through his senses—perception, hearing, touching—they can also exist at another level in which, though not seen, they can be known. This second level is inherent in any environment and is used by an individual whether or not he is aware of it. This second level conditions the way we perceive the first level by providing a structure for the visual cues which exist in the first level. And since it has the capacity to be known, we must be concerned with how this happens. If we mark both these levels in the environment they can be explicitly perceived and understood. This is the third aspect of the work—a shift in focus from an actual structure to an implied structure and to the relationship between the two.

This second level may be thought of as a range of abstract and more universal formal regularities that exist in any conception of physical space. These formal regularities are universal in the sense that such formal concepts as solid and void, centroidal and linear, planar and volumetric are primitive notions which cannot be reduced and which exist in a state of opposition in any spatial conception. This second level includes, in addition to a set of irreducible formal regularities, the transformations of these regularities necessary to produce a specific environment. Transformations may be described by such formal actions as shear, compression, and rotation to produce a new level of formal information in any specific physical environment. Again the marking is used to signal the interaction between these two levels. The physical environment can then be seen not only in its functional and iconographic dimensions but also in its formal one—as being generated from a series of abstract formal regularities that may be described as a deep structure. These transformations and regularities have no substantial existence but are merely a description of this second level of formal relationships, in other words, a possible model for an architectural deep structure.

One means of making the deep structure in a particular environment explicit is to force an individual to experience the environment as a notational system that has a recognizable relationship to a deep structure. This is attempted in House I in the following manner. First, the series of formal relationships that are marked in the actual space (the parallel layers and diagonal volumes) create a contrast between actual space and implied space. This contrast makes one initially aware of the presence of another level of formal structure. Second, the two sets of formal notations which are discernible (one reads as incomplete, the other asymmetrical) because one can conceive of a symmetrical and complete structure of formal regularities, are superimposed. These notations, which are variations of the formula ABABA, appear in the actual environment in the following way. The first of these corresponds to the formula $A_1B_1A_1A_1$ (fig. 3.3) and the second to the formula $A_2B_2A_1B_2A_2$ (fig. 3.4); the middle terms B_1A_1 being common to both. When they are overlaid on one another, the underlying structure is seen as compressed, but when they are slipped apart in the mind, it reveals itself to be a simple symmetrical structure.

The basis for creating this relationship of actual structure to deep structure is quite primitive. It depends on an initial shift along a diagonal to create two implied square volumes (figs. 3.1 and 3.2). One square may be seen as shifted out of the other or vice versa so that the notations both for the plaid frontal layering and for the diagonal volumes can be

seen as deriving from one, more basic, system. The diagonal is read as a resolution of the two directions in the plaid, or the plaid is read as the result of the diagonal shift. Thus the deep structure is revealed only through an embedded relationship between two formal structures in the actual environment. Although one may perceive these two structures in the actual environment, one is unable to perceive the deep structure because of its existence in the environment as an irregular Gestalt. These actual structures thus have a common relationship in a deep structure which is not perceptible but which can be understood after both structures have been perceived.

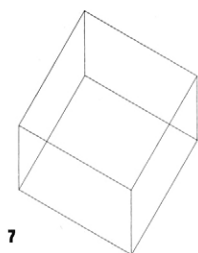
Any physical environment has this second or deep structural level, which not only has the capacity to convey information but does so continually at a less-than-conscious level. It exists without being consciously designed, and there is a conceptual capacity within each individual to receive this information. Marking the deep structure in the actual environment may bring it to a more conscious level. As was said above, there is no reason or meaning intended in the use of this particular formal strategy. The two overlaid systems are neither good nor bad in themselves. They are intended merely to exemplify the logic inherent in any formal structure, and the potential capacity of that logic to provide an area of new meaning.

In summary, three shifts were attempted in House I. Each concerned an attempt to separate the actual physical environment from its traditional relationship to function and meaning, to neutralize the influence of these on the viewer. The first concerned the marking of the elements of the actual environment; the second concerned the marking of the formal structure in the actual environment; the third concerned the marking of the relationship of this formal structure to a deep structure.

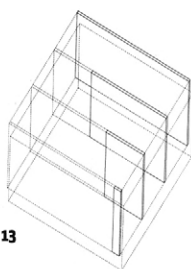
Such a conception of design attempts to change the primary intention of architectural form from the perception of space to understanding the relationship of marks in that space to what is called here a deep structure. The capacity to understand, as opposed to experience, this intention does not depend entirely on the observer's particular cultural background, his subjective perceptions, or his particular mood at any given time, all of which condition his usual experience of an actual environment, but rather it depends on his innate capacity to understand formal structures.

Such a position introduces, as a primary concern of architecture, the use of physical form as a marking to produce, as it were, a new mental image of an environment different from that which we are actually seeing. The deep structure, when it is combined with the perceptible physical reality, has the potential, if it is structured in a precise fashion, to make available a new level of information. The more this structure approximates a purely formal environment, the less traditional the meaning it possesses, and thus the closer it is to an environment that might be a vehicle for such new information.

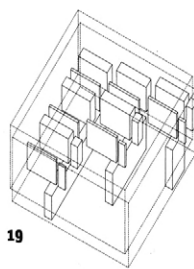
To do this, form must be first considered to be potentially separable from existing perception and conception, and second, it must be considered as capable of changing or raising the level of consciousness by proposing a critique of the existing situation in architecture.



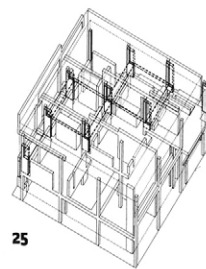
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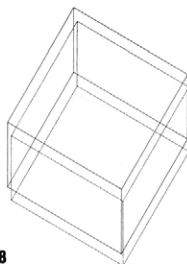
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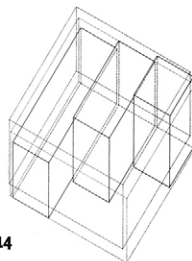
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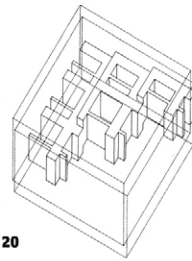
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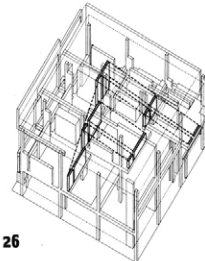
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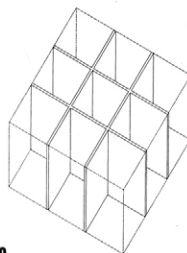
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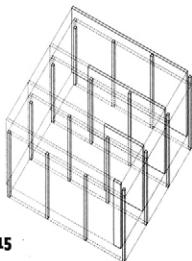
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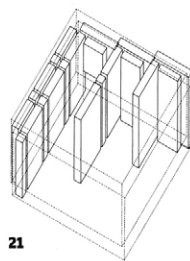
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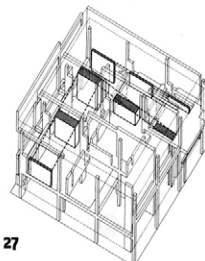
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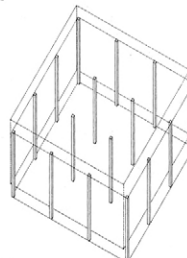
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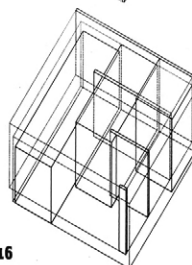
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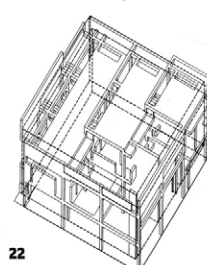
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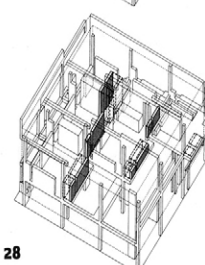
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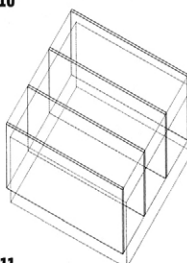
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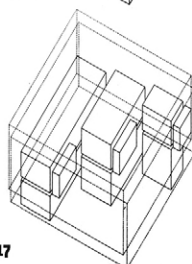
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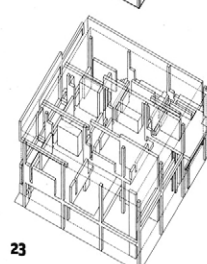
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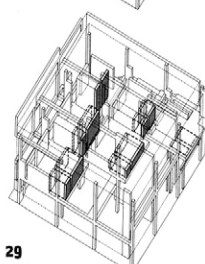
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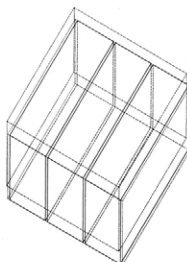
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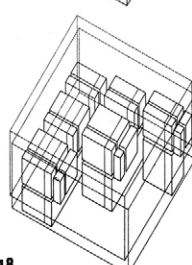
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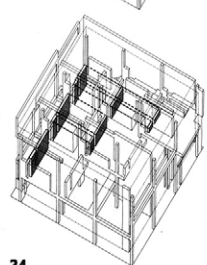
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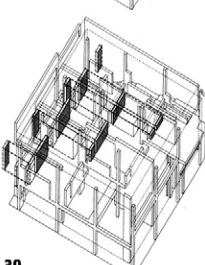
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3.7-3.30 Peter Eisenman, House II, Mr. and Mrs. Richard Falk, Hardwick, Vermont, 1969-70. Transformational drawings.

House II

In the past, even when limited by the constraints posed by available materials, architects sought to use structural elements in ways other than those dictated by purely functional requirements. Modern technology provided architecture with new means of conceiving of space. In a sense, space was no longer necessarily limited or defined by structure. It was possible to examine such elements as the column and wall as other than the resolution of functional problems. This was especially true with respect to the use of the load-bearing wall; the column became a primary structural element and, along with the non-load-bearing wall, a potentially innovative formal device.

House I was concerned with using columns and walls to mark a set of formal relationships. Continuing from this, House II is concerned with a systematic development of two ways in which information may be conceived of and derived from the interaction of formal relationships.

To articulate these ways of conceiving and producing formal information in House II, certain formal means were chosen, each involving an overloading of the object with formal references.

This development can be seen first from a set of analytic diagrams (figs. 3.7–3.21). These diagrams describe the development of a set of abstract formal propositions as a possible condition of an underlying structure and their initial transformation into a specific environment.

Any given coordinates of space can be described as linear, planar, or volumetric. The coordinates of a cubic space are described by its edge or its center; the edge composed of lines or planes, the center by a line or a volume. In this particular house the center condition is arbitrarily defined by a square volume. From this the original square is divided into nine squares. These squares are marked by a matrix of sixteen square columns. The first six diagrams present one set of conditions possible from this initial definition. The selection of the conditions, as opposed to any other condition of such a deep structure, is at this stage of work, arbitrary. Figure 3.8 shows the gridded nine square arrangement. Figures 3.9, 3.10, and 3.11 select and isolate three possible conditions of that gridding: as a matrix of sixteen columns, as a series of four planes, or as a series of three volumes seen as solids between the planes. It is to be noted that the planar and volumetric conditions are linear and directional in opposing axes. While there are obviously other combinations of planes and volumes, these chosen oppositions suggest one prior condition of an underlying structure which when transformed will produce a level of implied or virtual information in the actual space. Thus while the grid of nine squares can be seen as an underlying structure, the axial opposition of planes and volumes will be seen to create a transformation of this structure. The assumption here is that these initial spatial oppositions in some way permit the articulation of a virtual relationship between the actual environment and underlying structure. (How or why this happens is a subject for future work.)

The further diagrams concern the development of one possible transformation, from this underlying structure to an actual environment. There was a second transformation following from the initial deployment of lines, planes, and volumes, which was a dislocation in the form of a diagonal shift. (This can also be seen in the dotted outline of two bound-

ing volumes in figures 3.8–3.12). This shift created the potential for developing another set of oppositions in the actual environment by articulating two squares, one defined by the planes and the second defined by the matrix of columns. The particular location of columns, walls, and volumes produced by the diagonal shift creates two datum references. It is possible to read the shear walls as a neutral referent, especially when seen from the north, whereupon the columns can be read as the residue of these planes, transposed diagonally from them (fig. 3.15). Alternatively, the columns can be read as a neutral referent, especially when seen from the south, whereupon the shear walls may be read as having been shifted from the plane of the columns. The column grid also acts as a neutral referent for a second set of formal readings involving a diagonal cross-layering. One diagonal is articulated by the volumes of the upper level, which step up and back from left to right. This movement crosses at right angles the diagonal established by the shear walls, which repeat and reduce in length as they move along the diagonal from the full-length shear wall at the north. Because of this diagonal shift, the implied planes formed by the columns and beams cut through the volumes in such a way as to create a condition in space where the actual space can be read as layered. The layering produces an opposition between the actual geometry and an implied geometry; between real space which is negative or void and implied volume which is positive or solid. This can be seen in figures 3.17–3.21. This layering also produces a plaiding in both axes. Implied solid volumes can now be read on either side of the original column datum. The residual volumes are further articulated by the location of the roof skylights, which are placed directly over them in the north-south axis (fig. 3.22).

Other ways were explored to create a dialectic or an opposition between an actual relationship and an implied relationship in the environment using the column and the wall, and the wall and the volume. First, the columns, walls, and volumes were treated as equally weighted in terms of disposition and number, and second, they were seen as variants of one abstract planar system. In other words, through a formal device using the plane as a fulcrum, a dialectic was created between the real column, wall, and room volume, and that which is implied line, plane, and solid. In this context, a room volume is seen as an extension of the wall, while a column appears as a residue of the wall. The deliberate compression of the usually differentiated formal systems—the column system, the wall system, the window system—into an undifferentiated construct reinforced a condition where it was difficult for these conventional architectural elements to be considered individually as objects; they became merely parts of a total structure of relationships. The focus is thus transferred from the physical object itself to the understanding of its relationship to an underlying structure.

One way to make someone aware of these relationships is to control the direction of his movement in contrast with the direction of the architectural space. In House II, the columns on the ground level are extended to become implied planes which layer the ground-level space parallel to the volumes above. In the upper level the columns are extended at right angles to the volumes (fig. 3.23), thus layering the space perpendicular to the volumes. The intention of this extension of the columns to form implied planes on the

ground level is to define someone's movement perpendicular to the upper-level volumes; and on the upper level, since movement is now parallel and within the volumes, to define it by creating layers which run counter to the major axes of the movement.

The use of yet another formal strategy—bi-valency—can be seen in figures 3.22–3.30. Bi-valency is a formal condition where an element or a relationship between elements has two notations, marks, or weightings of relative equivalence. An important distinction must be made between perceptual and conceptual bi-valence. A perceptual bi-valence is one that resides in the object itself, such as the figure-ground ambiguity between solid and void, between window and wall, or some of the examples used in Gestalt psychology. A conceptual bi-valence is one which is in the relationship between elements rather than in the element itself. Thus it may not be perceived in the actual environment, but rather may be understood as a mental construct. In a conceptual bi-valence, there is not necessarily an ambiguity in the perception of an object. Rather it is through the particular placement, size, and number of elements that a relationship between elements may take on an ambiguous or bi-valent nature.

One way bi-valency can be developed is to give to a particular column or wall two notations of a similar character and emphasis so that the specific column or wall can never be held in the mind as a single element, but rather is in a state of tension between two conceptual relationships. Even though the perception of the column or wall may be constant, the particular juxtaposition of these elements may produce an oscillation between two equivalent mental constructs. This condition of possible bi-valent readings in the same element or relationship of elements provides an orientation in which the beholder is primarily concerned with the formal relationships and not the element itself.

This was demonstrated in House II through what might be best called the use of a structural redundancy. Because of our experience with the particular nature of wood construction, we know that a certain positioning of either load-bearing walls or a grid of columns produces in each case a reading of a complete structural system. If two such structural systems are coupled in such a way that both can be read as structural, there is an obvious redundancy which forces each system to be read in a new way. If one system is read as structural, then the other must be read as being something else, and vice versa. If the two have equal importance in terms of size, number, interval, and position, then both can be read at the same time as either structural or not. If either the column or wall systems can be read as non-structural at any time, they then can be seen perhaps as marks. In House II these marks have two purposes. First, because of their particular placement they produce a conceptual bi-valency between the elements themselves, and, second, they act as an implied reference to some underlying structure.

For example, figures 3.24 and 3.25 show a series of walls which act as a horizontal datum reference for readings along the volumes in a north-south direction and across the volumes in an east-west direction. In figures 3.20 and 3.21, a series of walls step down in the vertical dimension as they move sequentially across the volumes. When read with the walls in figures 3.24 and 3.25 they take on a bi-valent notation. The top edge of the walls in figures 3.24 and 3.25 are at the same height from ground level and can be given the nota-

tion AAA. The top edges of the walls in figures 3.26 and 3.27 step down and thus can be noted from right to left as ABC. Because of the fact that the bottom edge of the walls in figures 3.24 and 3.25 step up, both A conditions approach zero height. Thus while both A marks are similar, their interpretation is different, much as the difference in the value of hot and hot-cold and hot-warm-lukewarm.

Figures 3.28 and 3.29 show the same sequence of walls as in figure 3.26, again with two alternate readings. If the middle wall of figure 3.28 is read as a datum, then all other walls in the series are read as shifted from that datum. If the end wall is read as a datum (fig. 3.29), then all other walls are read as shifted. In the first case, the middle wall can be read as A and the two end walls read off the fulcrum as A₁ and A₂. In the second case, the end wall is read as A; then the other two are read as a sequence B and C. Figure 3.30 is merely another variation of this theme.

In both examples, one series of walls is acting as a datum for a second series of walls seen as shifted, and vice versa. By virtue of this, each wall is given a bi-valent weighting. In one sense there is a "dematerializing" of the object, not for aesthetic reasons but rather to focus on a set of formal notations.

The façades act in a similar capacity in that they record a number of notations simultaneously. The south façade is in a sense a paradigm of all views. The sets of internal oppositions which are different and re-enacted in each façade are most legible on the south façade. Since the building is conceived of as a progression from outside to inside there is no façade, in the sense of a plane or a surface of the building, which is used to mark the interior arrangements. In fact, in conception there is a series of layers moving from outside to inside. This is different from the reading of inside to outside, which is fundamental to a cubist aesthetic. Again, the original diagonal shift produces the condition where the façade becomes a series of parallel layers.

The essence of viewing these layers is as another set of contradictions, or bi-valent readings. For example, on the south the column grid is brought to the outside layer. The left-hand volume is pressed into the plane of columns, and because of the way it is articulated, causes both the volume and columns to be read as variants of a plane. The fact that the shear walls behind are placed in such a manner as to cause the middle and right volumes to appear to be punching through them serves to further reinforce the idea of compression of the left volume flattened against and caged within the outside layer. But further, the final shear wall to the right is the same width as the fascia of the south façade and is placed in such a way in relation to the articulation (the way it is cut on the right) of the fascia so as to force the most exterior plane to be seen as completing itself with this shear wall behind. This sets up a warping or distortion in the frontal plane. While the diagonal shift forces the two layers apart, now a pressure is created for the individual to read them as one.

Thus there is a mutation of the whole object, an expansion of the marking system from merely a numbers game to a statement of the potential of various elements to be infused with dual and implied readings through a series of transformations. Compression and elongation charge the space with both positive and negative readings which intensify

the individual's experience of the space and heighten his awareness of its relationship to a previously unconscious level of formal structure.

It must be pointed out that this unconscious level, while always potential in any environment, may not be available or may not be present at all. For example, there may be no graining or implied volume. A wall and a volume may be just that and no more. This depends on the design of the specific configuration and the marking in that configuration of its particular relationship to a deep structure from which the actual form is understood.

In conclusion there are three points which could be made. First, although the Renaissance and the Modern Movement were concerned with the implied aspects of architectural space, they were often so for purely aesthetic or polemical reasons rather than to investigate inherent formal principles. The suggestion in this work is that the relationship of the implied aspects of architectural space and their potential meaning need re-examination and perhaps redefinition.

The particular way that the formal structure is developed through a diagonal shift manifested in a structural redundancy is perhaps only one means to make such formal concepts as compression, elongation, and frontality become operative. It remains for future work to examine the nature of the general principles or architectonic rules underlying these relationships which might help define a broad range of formal structures and their transformations.

Second, while the diagrams which attempt to describe these relationships are analytic, nevertheless they are potentially an integral part of the design process. In addition, the diagrams act as a set of instructions; they attempt to make legible the relationships which an individual may not see. They provide what can be called a conceptual framework for this understanding.

Finally, it may be in the nature of architecture to present the relationship between what is actual in an environment and some form of deep structure. It may be a fundamental act in the making of architecture and beyond a mere formalism to take certain regularities which exist in a deep structure and present them systematically so that the user is aware of them.

If there is an inherent meaning implied or controlling any initial choice and subsequent transformation of a deep structure, it is a purely formal one. In House II there is a concern for space as the subject of logical discourse. Such a logical structure of space aims not to comment on the country house as a cultural symbol but to be neutral with respect to its existing social meanings.