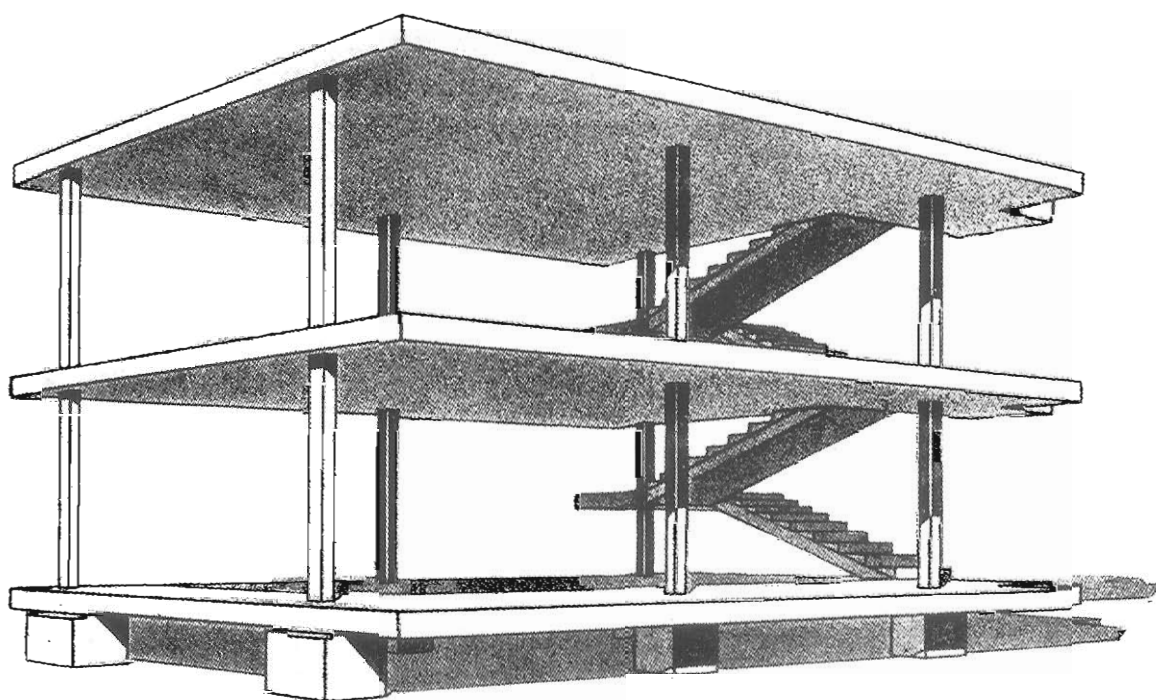


1 Dom-ino house prototype. Le
Corbusier. Perspective.



Peter Eisenman

The modes and identities of representation, so weighted down with their own material history, have ceased to express the order of being completely and openly.
Michel Foucault.

It can be argued that all changes in architecture can in some manner be traced to changes in culture. Certainly, the most tangible changes in architecture have been brought about by advancements in technology, the development of new conditions of use, and the change in significance of certain rituals and their domain of performance. Thus, it would seem that the nature and significance of the architectural object should reflect the gradual shift in man's consciousness that occurred between the mid-fifteenth century and the twentieth century, from a theocentric to an anthropocentric conception of the world.

Such changes in architecture are most abstractly recorded in spatial manipulations of plan and section, which become the physical manifestations of developing formal strategies made possible by new conceptions of notation and representation. While more superficial stylistic changes are easily grafted onto the facade like applied icons, such changes in elevation are never so fundamental as changes in plan and section; plan and section have been, since the development of orthogonal projection, the repositories of the animating principles that define architecture in the classical Western sense. They are the primary notational devices that reflect both changing concepts of use and meaning and the technical capacity to produce such changes. One has only to compare a plan of Palladio (fig. 6) to one of Bramante (fig. 11), or one of Scamozzi (fig. 12) to one of Palladio, to see in the movement from the external expression of the cruciform to its envelopment in a platonic square or rectangle and finally the cruciform's complete dissolution, evolving spatial conceptions of an anthropocentric society.

The record of the later history of Western architecture, from the early nineteenth century to the present, also documents the changes which have occurred in man's conception of his object-world as they come to be reflected in his architecture. For example, if one examines the differ-

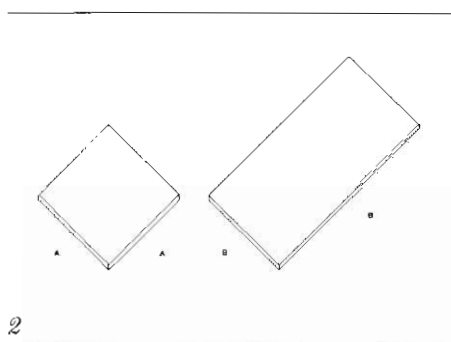
ence in conception between two buildings like Charles Garnier's Paris Opera House and Le Corbusier's Maison Dom-ino—admittedly of widely different use and significance but nevertheless typical—one witnesses an alteration of space so fundamental as to announce historical rupture. The abandonment of the plaid grid of the opera house for the free plan of Dom-ino, possibly one of the most critical changes ever in the continuous cycle of changes, appears to herald a decisive cultural phenomenon: the birth of a Modernist sensibility that is to parallel and even supersede classical Western thought.

Modernism is a state of mind. It describes the change that took place sometime in the nineteenth century in man's attitude toward his physical world and its artifacts—esthetic, cultural, social, economic, philosophical, and scientific. It can be interpreted as a critique of the formerly humanist, anthropocentric attitude, which viewed man as an all-powerful, all-rational being at the center of his physical world.

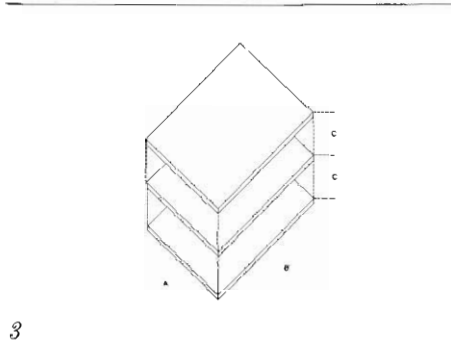
In arts other than architecture, where Modernism has signaled a profound change, it is fairly easy to distinguish a condition of objecthood and sign which can be labeled "Modernist." In each case, this condition is characterized above all by the object's tendency to be self-referential. Thus the change from narrative to non-narrative prose or from tonal to dodecaphonic music reflects in its historical evolution a change in the *conception* of the relation of man and his object world, a relation where the writer or composer is no longer necessarily interposed between the object and the reader or listener. Man is seen to be in both a more direct and also more relativistic condition vis-à-vis his object world—the "peer" of rather than the determiner of his works. Modernist prose and music incorporated not only this new relation of the object/maker, but also of the object's signification, that is, how the object reveals its condition of being and its manner of coming into being, how these are recorded and the inherent condition of such notations. Since the object of prose, music, painting, and sculpture is no longer merely a narrative record and mimetic representation of man's condition, it becomes more fundamentally concerned with its own ob-

6 Villa Foscari (*La Malcontenta*),
Malcontenta de Mira. Andrea
 Palladio, 1560.

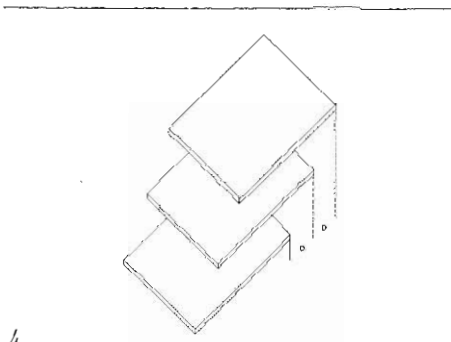
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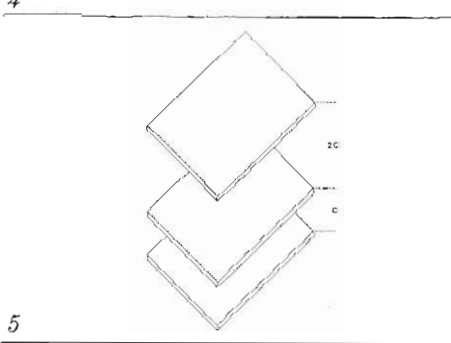
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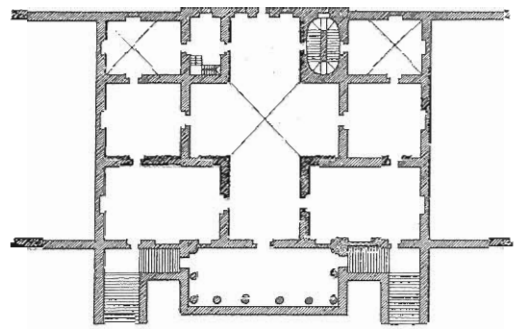
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jecthood, with an existence outside of (if parallel to) its inescapable origination by, and traditional representation of, man. This new conception of the object world naturally opens a potential for uncovering entirely new modes of existence within the object world itself.

But what is curious about most interpretations of modern architecture, and in particular those of Le Corbusier—supposedly the most modern (i.e., abstract, painterly) of all the modern architects—is that they do not view their subject in very modern terms. In fact, far from establishing the tenets of a Modernism in architecture, they seem intent on seeing modern architecture as a continuation of the Renaissance tradition. For example, up to now the most significant critical and theoretical writings on Le Corbusier have been by Colin Rowe. However, one has only to look at the titles of some of his texts to see that their thrust is decidedly anti-Modernist. In fact, of his five major texts dealing with Le Corbusier three of them contain key words in their titles which link Le Corbusier with Renaissance thought—"Mathematics of the Ideal Villa," "Mannerism and Modern Architecture," "The Architecture of Utopia"—and all of them develop an attitude toward space which has its origins in the sixteenth century. From a reading of these texts, there is little question that while Rowe exhibits a consistent respect for Le Corbusier he simultaneously sustains only a fragile tolerance for modern architecture and for that matter much of what can be called Modernist thought. And since Colin Rowe has provided one of the few critical matrices for analyzing modern architecture, it may be well to ask how much of his thinking has conditioned our received view of Le Corbusier, and thus even much of second generation modern architecture; and conversely, how much of his thinking is in fact a product of modern architecture itself, which it can be argued is not necessarily modern or Modernist, but rather a phenomenon of late humanism; and finally, how much the free plan, supposedly the 'canonical' spatial diagram of modern architecture, is merely a manifestation of a late Enlightenment view of man, and how much the free facade is merely an icon of Le Corbusier's technological genius.



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Once these questions are admitted, then it can be argued that Rowe's ideas have in fact obscured the one aspect of Le Corbusier's work that makes it truly Modernist: that is, its aspect as a self-referential sign, its existence as *an architecture about architecture*. In the interpretation of modern architecture put forward by Rowe and others, while the style preference changed and new descriptive metaphors were used, the conception of what architecture was and what it could be remained relatively constant. Architecture remained conceived by man, representing man and his condition. It assumed physical structure and shelter to be absolute conditions of architecture, and when it considered signification it was in terms of a meaning which was *extrinsic* to architecture itself; that is, to ideas which related architecture to man, rather than to intrinsic ideas which explained architecture itself. It continued to rely on the traditional drawing modes of plan, section, and elevation to conceptualize its values. But if, as Sausure has suggested of language, words tend to divide a conceptual spectrum in arbitrary and specific ways, similarly the continuing representation and conceptualization of architecture in plan, section, and elevation can be said to have determined and probably also obscured many aspects of architecture.

As a plan and a section diagram, Dom-ino seems a rather simple and straightforward statement. Perhaps for this very reason—its apparently extreme clarity—it is often taken as an icon and a structural paradigm, an example of the potential of the then new technology, a prototypical unit expressing ideas of mass production, repetition, and so on. The famous perspective drawing is cited by Rowe as the initial didactic statement of the spatial concepts of the Modern Movement (fig. 1). He argues that here in the concentrated energy of a few simple gestures are contained implications which for the next twenty-five years are to condition the development of modern architecture. But it is only within the context of a Renaissance conception of space, rather than a Modernist one, that the Maison Dom-ino can be considered a canonical spatial diagram. For in a Modernist context the Paris Opera House and the Maison Dom-ino appear merely as successive variations of the same phenomenon: historical change mirrored

in unchanging modes of representation. 'Modern' in Rowe's context seems merely to indicate the new style of supposed abstraction and the symbology of the machine rather than to signal changes apparent in the notations of plan and section which might suggest a fundamental change between man and object. Thus, if we see Maison Dom-ino through the eyes of Rowe as the canonical free plan diagram, a certain category of conceptions about architecture is made available to us, but within this category only a limited concept of change can be discerned.

Moreover, while the canonical spatial diagram of Dom-ino is often alluded to as if its invocation was sufficient to support its supposed lucidity, it has never been formally analyzed in any systematic way. The general acceptance of Rowe's thesis suggests that the recognition of an obvious and compelling truth, which in turn suggests that in the diagram itself there must exist, in the few elements and their precise size, shape, number, and location, a level of communication that goes beyond the mere fact of their existence. While this communication has been described in one way by Rowe, it is also possible to read the particular configuration of the diagram in terms of an *other* condition of representation, an *other* significance, an *other* realm, which exists simultaneously with the accepted interpretations. It is precisely the simplicity and clarity of the diagram taken together with the fact of its impact in the history of modern architecture that leads us to look for this 'otherness', which might be defined as a Modernist context for Dom-ino.

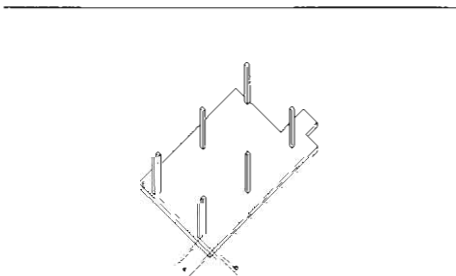
Thus, looking now at Maison Dom-ino with a different lens, proposing a different conceptual spectrum, it is possible to see in the precise selection, size, number, and location of the elements in the Dom-ino diagram the incipient presence of the self-referential sign. Such a sign notion as initiated in the Maison Dom-ino may begin to define not only a Modernist condition of architecture, but beyond that, insofar as this notion of sign is different from that which is classically thought to be architectural, to define certain minimal conditions for any architecture. Our analysis must begin with the basic elements—the three horizontal slabs, six box-like footings, six linear columns, and

one staircase in a primitive geometric configuration. First, it can be assumed that in any such diagram of architectural elements, the columns and slabs and their positioning have something to do with holding things up—probably also with some primitive intention to shelter, enclose, and divide, but fundamentally with obeying the laws of statics and physics. This much can be taken for granted. Thus, the configuration is initially seen as the result of necessity rather than any other intention; the columns and slabs are not read as signs, but merely as “integers” of construction.

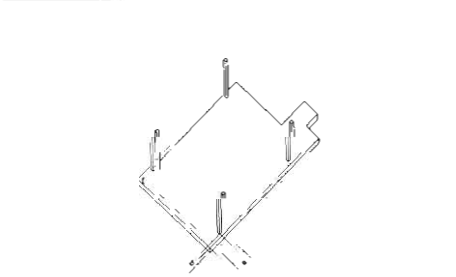
Yet a floor slab or a door, a window or a wall may be necessary conditions for building or function but they are not sufficient in themselves to define ‘architecture’. Because while all buildings have doors, windows, walls, and floors all buildings are not necessarily architecture. Equally all of these elements, as physical entities, necessarily have three spatial dimensions, but these, no matter how pleasing their proportions, which may be recorded and understood geometrically, are not necessarily architecture.

If architecture is not geometry, it must in some way be differentiated from it. In order to distinguish any one class of objects from any other, it must be possible not only to signal the difference of that class from all others (a negative signal) but to signal or identify the presence of the particular class itself (a positive signal). While all Ford Motor cars, as a class, may say something about movement, vehicles, etc., any single motor car is not necessarily the sign of another nor of the general category of motor cars. Similarly, any column, wall, or beam, while it may be saying something about structure and statics, is not *per se* a sign either of itself or of any general category which could be considered architecture. It is merely a column, wall, or beam.

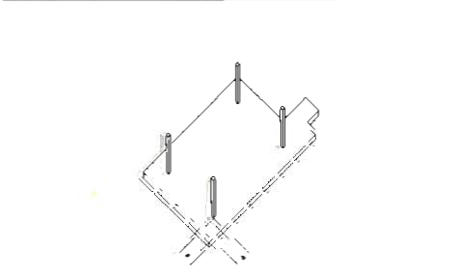
The dimensions of any rectilinear plane, whether floor, wall, or column, can be designated simply by two notations: A A or A B; that is, either the two perpendicular sides are equal or they are unequal (fig. 2). However, if the dimensions of a plane are A B, and this dimension is *marked*, that is, *designated in some way as different*,



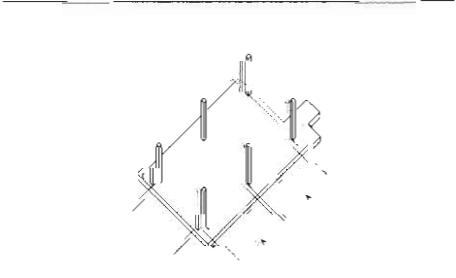
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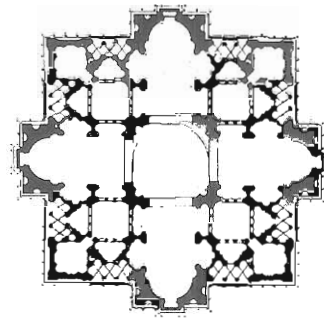
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then this marking can be considered to be a sign of that condition. The presence of an intentional sign may be the most important quality which distinguishes architecture from geometry, distinguishes an intention to be something more than a notation of a physical presence from the facts of literal existence. The three horizontal slabs of the Maison Dom-ino have an A B relationship of end to side. Initially, we do not know if this A B relationship is intentional, since such a relationship in any non-square plane is always literally there, so we begin to look for its marking as a sign. We also notice that the particular relationship of the three slabs suggests a geometric condition which can be defined by a set of proportional relationships. Of course, any number of arbitrary proportional relationships which still respect the laws of gravity can be made from these particular elements. For example (fig. 3), the three horizontal elements can be placed one over another with their corners in line so that they are equidistant from one another. They can also be placed so that while they remain equidistant from one another vertically and the two sides remain in alignment the planes step away from one edge at equal intervals (fig. 4). Alternatively, still leaving edges aligned, the interval between horizontals can be changed so that they are no longer equidistant but rather in a proportional ratio (fig. 5). These examples are merely three of many simple variants of a regular ordered geometry, but of course an almost infinite number of such alternatives could be posed. Each can be described by a different set of proportional systems and placement rules. These in turn can be explained by a simple rationale or strategy, and plans and sections can be drawn for them.

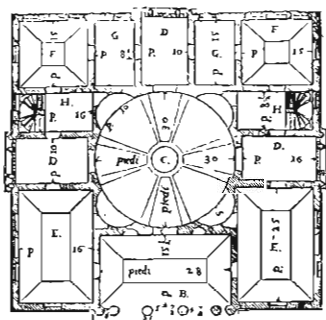
But are any or all of these variations anything more than geometry? And even in terms of their use as floor levels and the necessity to enclose them so as to provide shelter, are they anything more than a set of geometric relationships plus this use, which together in some way approximate what we have always thought architecture to be? And if we answer in the affirmative that they do constitute architecture, then do all such variations of these elements when combined with their uses constitute architecture? And if it immediately appears clear that not all of the examples qualify, then how do we begin to distinguish

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between those that do and those that do not? Or if none of the variations are considered architecture, how do we begin to identify at what point these primitive configurations become architecture and when in this process they become a canonical spatial diagram of modern architecture? Beyond this, what, if anything, might make them a Modernist as opposed to a classical architecture?

Clearly each diagram is potentially a framework for architecture, but no more or no less than any other three dimensional configuration. In fact, a highly simple geometric scheme is perhaps less likely to transcend its existence as mere geometry than a more complex one since it is more difficult to change it—to add or to subtract any element—without changing its description and its rationale (that is, without transforming it into some other geometric structure); the elements tend to be the manifestations of a closed system which allows for no alternation or interpretation except for more or less minor changes in their size and shape. Thus, in cases where a simple geometry exists as a basic diagram, the 'architecture' seems to be reduced to the decorative grafting of some aesthetic skin or the insertion of a particular use into the given geometry. Likewise, if we reverse the proposition and begin with some program of use or a site context which logically suggests a simple order, the question of whether the diagram is any more or any less architecture would remain exactly the same.

But let us return now to the original Dom-ino elements and their precise configuration in the Dom-ino diagram. If we analyze this configuration we begin to see that the elements together with their precise size and location exhibit an articulate level of intentionality. This cannot be seen in the configuration of the slab alone, but only in the relationship of slab to columns. Once more, one has to imagine a range of possible or reasonable column locations and a set of alternative shapes—round, square, or rectangular. The fact that the three pairs of columns are set back at an equal distance from the long sides while on the ends they coincide with the edge of the slab provides the clue to the fact that they are more than simple geometrical notations (fig. 7). First, because the columns are also in



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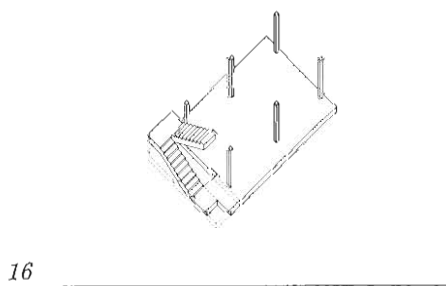
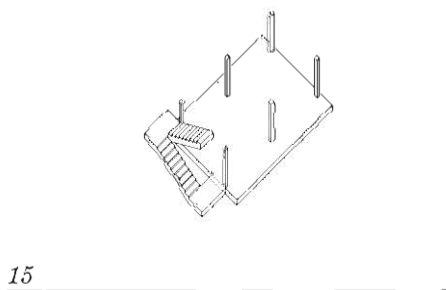
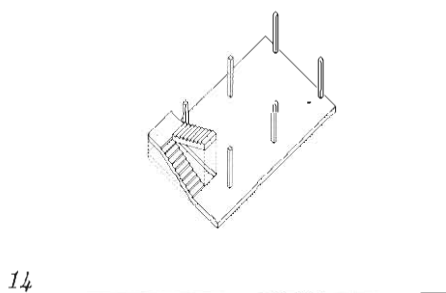
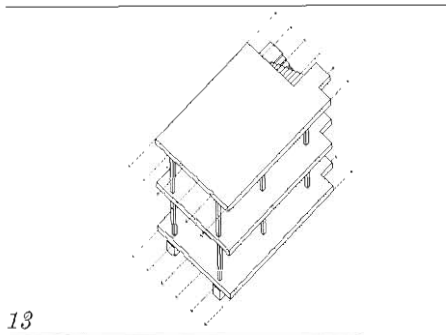
an A B relationship to the edge of the slab they can be seen to reinforce the difference between side A and side B of the slab itself. Second, while in themselves A and B are only a notation, a proportional difference—the literal fact that the slab is not a square—it can also be seen that the envisioned function—house—is not the determiner of the proportional relationship since most functions can be accommodated in any simple shape. For example, a house can just as easily be accommodated in a square as in a rectangle. Third, an equivalent A B distinction, if that had been the only proportion, could have been made by setting the two pairs of end columns back from the side and the side columns flush with the front and back of the slab (fig. 8). Again, the columns could have been set back equally, the same distance on the ends as on the side (fig. 9). In this case, it would have been only the unequal sides which would have marked the A B distinction; all the columns would have been seen in an equal A A relationship to the edge. Finally, the length B could have been marked as a function of the width A by inserting another pair of columns (fig. 10), providing two equal increments of width A. All—and of course any number of others—would have worked equally well from the point of view of structure, function, and geometry.

But again, since only one of these possibilities is in fact the case, we must assume an intentionality in the particular configuration with respect to all other permutations, and insist that the precise location of the columns with respect to the slab reveals the presence of an intention to treat the column-slab relationship as a sign and the precise location of the columns as a mark of that intention. The idea of marking and the presence of the column as a mark as opposed to a mere division or structural element are understood through the general linguistic concept of *redundancy*. Thus, when the column locations act to reinforce the original geometric A B relationship which in itself is so clear as not to need reinforcement, one interprets this as an intention to underscore a condition of being, that is as a significant redundancy. While A and B are literally present, there is also an intention to have A and B become something other than their actual presence. The redundancy of the mark thereby signals that there is

something present other than either the geometry or the function of the column and slab.

There is then an unintentional, or literal, reading of column and slab which posits A and B as unequal sides of the slab, and then an intentional reinforcement through the location of the columns, which makes A and B take on an additional presence. Thus, the fact itself—the slab—plus the spatial marking—the location of the columns—suggest an idea about sides A and B which is an idea only about itself, a self-referential statement. This then may be a primitive though truly Modernist phenomenon, one that speaks about its mere existence and its own condition of being.

A second aspect of the Dom-ino diagram which can be called self-referential is the horizontal datum. The notion of a datum in the traditional architectural sense is not Modernist but an attitude to the vertical plane which seems to have originated in the sixteenth century. A datum was something which existed by virtue of its dominant configuration or location, and acted to inform and direct the observer's experience of the object. This can be understood if we look at Le Corbusier's villa at Garches, where the strong condition of frontality derives from the sixteenth century. It is true that its peripheral as opposed to centric composition—its conceptual "density" at the edges—seems to define it as "modern," but peripheral composition also existed in the sixteenth century, although the idea was lost in the centralizing tendencies of the Beaux-Arts. But again, the modernity, if it may be called that, exists only in the sense of the structure or composition of the image and not in a changed condition of object-viewer in relation to both the sign and the object. Garches can be said to be Modernist only when the front facade is considered as a frontal datum, as the collapsed energy of the other three sides being projected on the single plane. For in these terms it is a self-referential datum. It fixes a new object-man relationship, that is, man is no longer required to walk around the building to understand the object. Rather conception is from a single static position. It differs from the classical conception of frontality and datum in the sense that while the Renais-



sance datum fixes a preferred viewpoint of man to object, it does not imply the collapse of the other three viewpoints into a single position.

Dom-ino places primary emphasis on the horizontal as opposed to the vertical datum. Setting the column grid back from the edge of the horizontal plane provides a dominantly sandwich-like character to the space. And, it is the location of the columns on the front, back, and sides which reveals the self-referential nature of the datum. In the equality of the setback there is the suggestion of symmetry and stasis, i.e., that the long sides are complete and will not grow (fig. 13). At the same time, the location of the columns flush on the ends marks an opposition to the setback columns on the sides, and further suggests that the ends of the slab have been cut off, implying the possibility, or former condition, of horizontal extension of the slab on the long axis. Horizontal extension is an idea about horizontality, in fact about "horizon." And since extension is implied in only one direction of the horizontal axis, the differentiation of extension and stasis themselves is what is being marked. Thus, the horizontal plane becomes a datum carrying the idea of both an infinite *extension* of space in longitudinal vectors and the denial of the same proposition in lateral vectors. Moreover, since its reference is only to horizontality, to spatial extension or compression which are intrinsically architectural ideas, it differs from both the concept of datum of Garches and the traditional datum of classical Western space. For in both of these, datum is primarily concerned with relating and structuring the perception of a viewer to an object. Datum provided the viewer with a physical reference to understand both the narrative of his movement to, around, and in an object as well as his static position at certain points along that movement. In both cases datum structured the experience of man. In this sense it speaks outside of itself and can be seen as extra-referential. The horizontal datum of Dom-ino speaks only of its own physical condition. It is a sign of that condition and nothing more. In this sense it is self-referential. It exists as a mark of its own condition and is only known through its own marking. This conception of datum at Dom-ino also begins to alter the conception and definition of architecture.

FALSE HISTORY

This brings us to the next element of the Dom-ino diagram, the staircase. Since Le Corbusier himself shows it in subsequent drawings as the element by which the units clip together, it is always assumed that its particular location derives from this intention. However, again attempting a different kind of interpretation, it is possible to find in the particular location of the staircase with respect to the slab a third self-referential notation. There are three interpretations of this relationship. First, the slab can be read as extending to the outer edge of the staircase (fig. 14); in this case, the void in the corner is read as a cut-out in the slab. Second, the slab can be read as terminating at the inner edge of the staircase; in this case, a small square piece can be read as added to the slab (fig. 15). Third, the slab can be read as extending to the mid-point of the stair; the stair being seen as half inside and half outside the slab (fig. 16). In this case both cut-outs—subtraction, and addition—can be read simultaneously. While the actual location of the staircase in relation to the slab establishes a series of vertical layers perpendicular to the long axis, it also establishes a sign notation which calls attention to the actual addition and subtraction. These, like extension and stasis, involve both the actual object and the ideas about architecture itself. There is also the counter proposition inherent in the placement of the staircase; one which expresses the integrity or wholeness of the horizontal plane. For one must leave one plane in order to go up, re-entering the next plane from outside rather than puncturing its surface from within. Thus, the location of the staircase produces two propositions which are in opposition but together refer only to the nature of the horizontal surface itself (fig. 17).

Finally, one must consider the six square base elements in relation to the first horizontal slab. Certainly their size, shape, and location suggest something more than support because, as one can easily see, other configurations could have provided equivalent support. For example, the slab could have been set on the ground (fig. 18), so the mere gesture to raise it and place it on a base makes a first, although conventional, distinction between ground and slab; but second, the particular way that the slab is raised on what seem to be traditional construction footings,

which equally could have been buried, suggests another intention for them. The most obvious gesture would have been to continue the columns through the lower slab as *pilotis* (fig. 19). But in this case there would have been no distinction between the way the vertical element meets the top and bottom of the slab. It is precisely because the columns do not continue through the slab and instead become block-like elements that the notation is self-referential. It marks not only the literal difference—that which exists between the top and bottom surfaces of the slab in structural terms—but it also marks the bottom slab as something other than the two upper slabs. This marking indicates that the shape, size, and location of the footings are something more than structural. They function, but at the same time they *overcome* their function, an idea which begins to suggest another primitive condition for an architecture.

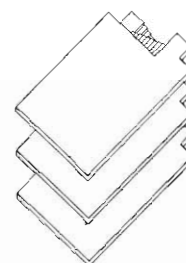
For if architecture can be distinguished from geometry on the terms we have suggested, what distinguishes it from being sculpture? We know that sculpture too is more than simply geometry in three dimensions, it is more than a physical representation of some mathematical concept. It may, like architecture, contain geometrical orders and be explained in certain cases by them (although unlike architecture, since sculpture is not necessarily intended to be walked on and in, it does not demand surfaces which in their flatness and horizontality are determined by the laws of gravity, and hence by some form of rectilinear geometry). Sculpture then seems to contain all of what has so far been said to be the sufficient conditions of architecture without any of its necessary conditions: like architecture, it is concerned with objecthood—with physicality and spatiality, and it is also concerned with the characteristics of sign which distinguish it from geometry. But while the two have a similar relationship to geometry, what distinguishes them from each other is their relationship to use. Sculpture does not have walls, except in a metaphorical sense. It is this difference which defines a necessary condition for architecture distinct from sculpture.

'Planeness' is a quality of all planes and thus all walls. It

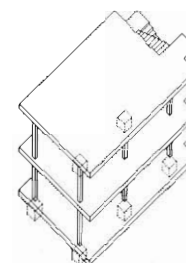
involves dimension, physicality, and extension; it signals division and contiguity. But 'planeness', as opposed to 'wallness', is not a sufficient or distinguishing condition of architecture because sculpture has 'planeness' too; moreover, it does not intrinsically imply shelter, support, and enclosure, aspects of function which we have said constitute the minimum traditional necessary conditions of architecture. 'Planeness', then, is not a necessary or sufficient condition of architecture. 'Wallness', on the other hand, contains those qualities which supply the necessary distinction between architecture and sculpture; but, by definition once again, these are merely necessary but not sufficient conditions of architecture since while they distinguish architecture from sculpture, they fail to distinguish it from mere building. As has been seen, to distinguish architecture from building requires an intentional act—a sign which suggests that a wall is doing something more than literally sheltering, supporting, enclosing; it must embody a significance which projects and sustains the idea of 'wallness' beyond mere use, function, or extrinsic allusion. Thus its paradoxical nature: the sign must overcome use and extrinsic significance to be admitted as architecture; but on the other hand, without use, function, and the existence of extrinsic meaning there would be no conditions which would require such an intentional act of overcoming.

In sum, a collection of planes and lines as projected in geometry or as materialized in sculpture can never be architecture precisely because they do not have inherent conditions of use and significance which must be overcome and subsumed. That same collection of planes and lines once they are also invested with 'wallness' and 'beamness' may become architecture when there is the presence of an additional intention to mark the 'wallness' and 'beamness' as architecture. The marking itself, the intentional recording of a condition beyond use, geometry, and extrinsic meaning, reveals that the 'sufficient' component of architecture is not merely the adding together of everything else, but rather exists as a separate, parallel, and potentially intrinsic condition of any space.

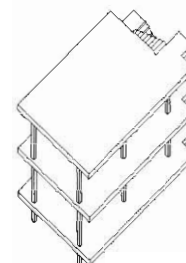
Thus, architecture is both substance and act. The sign is



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a record of an intervention—an event and an act which goes beyond the presence of elements which are merely necessary conditions. Architecture can be proposed as an ordering of conditions drawn from the universe of form together with the act of designating conditions of geometry, use, and significance as a new class of objects.

In this sense the Maison Dom-ino is a sign system which refers to this most primitive condition of architecture, which distinguishes it from geometry, or from geometry plus use and meaning. But more importantly in this context, the Maison Dom-ino can be seen to reflect a Modernist or self-referential condition of sign, and thus a true and seminal break from the four hundred year old tradition of Western humanist architecture.

Figure Credits

- 1 © S.P.A.D.E.M., Paris/V.A.G.A., New York, 1980.
- 1 From *Oeuvre Complète 1910-1929* (Zurich: Editions Girsberger, 1935).
- 2-5, 7-10, 13-19 Courtesy the author. Drawings by Jay Johnson.
- 6 From Andrea Palladio, *The Four Books of Architecture* (New York: Dover Publications, 1965).
- 11 From *Harvard Architecture Review*, 1, Spring 1980.
- 12 Courtesy the author.