A Journal for Ideas and
Criticism in Architecture

Published for The Institute
for Architecture and Urban Studies

By The MIT Press

Fall 1976/6

# OPPOSITIONS

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# Post-Functionalism

The critical establishment within architecture has told us that we have entered the era of "post-modernism." The tone with which this news is delivered is invariably one of relief, similar to that which accompanies the advice that one is no longer an adolescent. Two indices of this supposed change are the quite different manifestations of the "Architettura Razionale" exhibition at the Milan Triennale of 1973, and the "Ecole Des Beaux Arts" exhibition at The Museum of Modern Art in 1975. The former, going on the assumption that modern architecture was an outmoded functionalism, declared that architecture can be generated only through a return to itself as an autonomous or pure discipline. The latter, seeing modern architecture as an obsessional formalism, made itself into an implicit statement that the future lies paradoxically in the past, within the peculiar response to function that characterized the nineteenth century's eclectic command of historical styles.

What is interesting is not the mutually exclusive character of these two diagnoses and hence of their solutions, but rather the fact that ***both*** of these views enclose the very project of architecture within the ***same*** definition: one by which the terms continue to be function (or program) and form (or type). In so doing, an attitude toward architecture is maintained that differs in no significant way from the 500-year-old tradition of humanism.

The various theories of architecture which properly can be called "humanist" are characterized by a dialectical opposition: an oscillation between a concern for internal accommodation—the program and the way it is materialized—and a concern for articulation of ideal themes in form—for example, as manifested in the configurational significance of the plan. These concerns were understood as two poles of a single, continuous experience. Within pre-industrial, humanist practice, a balance between them could be maintained because both type and function were invested with idealist views of man's relationship to his object world. In a comparison first suggested by Colin Rowe, of a French Parisian ***hôtel*** and an English country house, both buildings from the early nineteenth century, one sees this opposition manifested in the interplay between a concern for expression of an ideal type and a concern for programmatic statement, although the concerns in each case are differently weighted. The French ***hôtel*** displays rooms of an elaborate sequence and a spatial variety born of internal necessity, masked by a rigorous, well-proportioned external façade. The English country house has a formal internal arrangement of rooms which gives way to a picturesque external massing of elements. The former bows to program on the interior and type on the façade; the latter reverses these considerations.

With the rise of industrialization, this balance seems to have been fundamentally disrupted. In that it had of necessity to come to terms with problems of a more complex functional nature, particularly with respect to the accommodation of a mass client, architecture became increasingly a social or programmatic art. And as the functions became more complex, the ability to manifest the pure type-form eroded. One has only to compare William Kent's competition entry for the Houses of Parliament, where the form of a Palladian Villa does not sustain the intricate program, with Charles Barry's solution where the type-form defers to program and where one sees an early example of what was to become known as the *promenade architecturale*. Thus, in the nineteenth century, and continuing on into the twentieth, as the program grew in complexity, the type-form became diminished as a realizable concern, and the balance thought to be fundamental to all theory was weakened. (Perhaps only Le Corbusier in recent history has successfully combined an ideal grid with the architectural promenade as an embodiment of the original interaction.)

This shift in balance has produced a situation whereby, for the past fifty years, architects have understood design as the product of some oversimplified form-follows-function formula. This situation even persisted during the years immediately following World War II, when one might have expected it would be radically altered. And as late as the end of the 1960s, it was still thought that the polemics and theories of the early Modern Movement could sustain architecture. The major thesis of this attitude was articulated in what could be called the English Revisionist Functionalism of Reyner Banham, Cedric Price, and Archigram. This neo-functionalist attitude, with its idealization of technology, was invested with the same ethical positivism and aesthetic neutrality of the prewar polemic. However, the continued substitution of moral criteria for those of a more formal nature produced a situation which now can be seen to have created a functionalist predicament, precisely because the primary theoretical justification given to formal arrangements was a *moral* imperative that is no longer operative within contemporary experience. This sense of displaced positivism characterizes certain current perceptions of the failure of humanism within a broader cultural context.

There is also another, more complex, aspect to this predicament. Not only can functionalism indeed be recognized as a species of positivism, but like positivism, it now can be seen to issue from within the terms of an idealist view of reality. For functionalism, no matter what its pretense, continued the idealist ambition of creating architecture as a kind of ethically constituted form-giving. But because it clothed this idealist ambition in the radically stripped forms of technological production, it has seemed to represent a break with the pre-industrial past. But, in fact, functionalism is really no more than a late phase of humanism, rather than an alternative to it. And in this sense, it cannot continue to be taken as a direct manifestation of that which has been called "the modernist sensibility."

Both the Triennale and the Beaux Arts exhibitions suggest, however, that the problem is thought to be somewhere else—not so much with functionalism *per se*, as with the nature of this so-called modernist sensibility. Hence, the implied revival of neo-classicism and Beaux Arts academicism as replacements for a continuing, if poorly understood, modernism. It is true that sometime in the nineteenth century, there was

indeed a crucial shift within Western consciousness: one which can be characterized as a shift from humanism to modernism. But, for the most part, architecture, in its dogged adherence to the principles of function, did not participate in or understand the fundamental aspects of that change. It is the potential difference in the nature of modernist and humanist theory that seems to have gone unnoticed by those people who today speak of eclecticism, post-modernism, or neo-functionalism. And they have failed to notice it precisely because they conceive of modernism as merely a stylistic manifestation of functionalism, and functionalism itself as a basic theoretical proposition in architecture. In fact, the idea of modernism has driven a wedge into these attitudes. It has revealed that the dialectic form and function is culturally based.

In brief, the modernist sensibility has to do with a changed mental attitude toward the artifacts of the physical world. This change has not only been manifested aesthetically, but also socially, philosophically, and technologically—in sum, it has been manifested in a new cultural attitude. This shift away from the dominant attitudes of humanism, that were pervasive in Western societies for some four hundred years, took place at various times in the nineteenth century in such disparate disciplines as mathematics, music, painting, literature, film, and photography. It is displayed in the non-objective abstract painting of Malevich and Mondrian; in the non-narrative, atemporal writing of Joyce and Apollinaire; the atonal and polytonal compositions of Schönberg and Webern; in the non-narrative films of Richter and Eggeling.

Abstraction, atonality, and atemporality, however, are merely stylistic manifestations of modernism, not its essential nature. Although this is not the place to elaborate a theory of modernism, or indeed to represent those aspects of such a theory which have already found their way into the literature of the other humanist disciplines, it can simply be said that the symptoms to which one has just pointed suggest a displacement of man away from the center of his world. He is no longer viewed as an *originating agent*. Objects are seen as ideas independent of man. In this context, man is a discursive function among complex and already-formed systems of language, which he witnesses but does not constitute. As Levi-Strauss has said, "Language, an unreflecting totalization, is human reason which has its reason and of which man knows nothing." It is this condition of displacement which gives rise to design in which authorship can no longer either account for a linear development which has a 'beginning' and an 'end'—hence the rise of the atemporal—or account for the invention of form—hence the abstract as a mediation between pre-existent sign systems.

Modernism, as a sensibility based on the fundamental displacement of man, represents what Michel Foucault would specify as a new *épistème*. Deriving from a non-humanistic attitude toward the relationship of an individual to his physical environment, it breaks with the historical past, both with the ways of viewing man as subject and, as we have said, with the ethical positivism of form and function. Thus, it cannot be related to functionalism. It is probably for this reason that modernism has not up to now been elaborated in architecture.

But there is clearly a present need for a theoretical investigation of the

basic implications of modernism (as opposed to modern style) in architecture. In his editorial "Neo-Functionalism," in *Oppositions* 5, Mario Gandelsonas acknowledges such a need. However, he says merely that the "complex contradictions" inherent in functionalism—such as neo-realism and neo-rationalism—make a form of neo-functionalism necessary to any new theoretical dialectic. This proposition continues to refuse to recognize that the form/function opposition is not necessarily inherent to any architectural theory and so fails to recognize the crucial difference between modernism and humanism. In contrast, what is being called post-functionalism begins as an attitude which recognizes modernism as a new and distinct sensibility. It can best be understood in architecture in terms of a theoretical base that is concerned with what might be called a modernist *dialectic*, as opposed to the old humanist (i.e., functionalist) opposition of form and function.

This new theoretical base changes the humanist balance of form/function to a dialectical relationship within the evolution of form itself. The dialectic can best be described as the potential co-existence within any form of two non-corroborating and non-sequential tendencies. One tendency is to presume architectural form to be a recognizable transformation from some pre-existent geometric or platonic solid. In this case, form is usually understood through a series of registrations designed to recall a more simple geometric condition. This tendency is certainly a relic of humanist theory. However, to this is added a second tendency that sees architectural form in an atemporal, decompositional mode, as something simplified from some pre-existent set of non-specific spatial entities. Here, form is understood as a series of fragments—signs without meaning dependent upon, and without reference to, a more basic condition. The former tendency, when taken by itself, is a reductivist attitude and assumes some primary unity as both an ethical and an aesthetic basis for all creation. The latter, by itself, assumes a basic condition of fragmentation and multiplicity from which the resultant form is a state of simplification. Both tendencies, however, when taken together, constitute the essence of this new, modern dialectic. They begin to define the inherent nature of the object in and of itself and its capacity to be represented. They begin to suggest that the theoretical assumptions of functionalism are in fact cultural rather than universal.

Post-functionalism, thus, is a term of absence. In its negation of functionalism it suggests certain positive theoretical alternatives—existing fragments of thought which, when examined, might serve as a framework for the development of a larger theoretical structure—but it does not, in and of itself, propose to supply a label for such a new consciousness in architecture which I believe is potentially upon us.

Peter Eisenman

In February 1971, I was asked by the Yale University Press to be a reader for its projected publication of the Yale Mathematics Building Competition. Following is my letter to the Press.

*Gentlemen: A publication on the Yale Mathematics Building competition should be undertaken by the Yale University Press.*
*The competition in itself is, and will become, an important event in the history of American architecture.*
*If it is possible to say that there is a precedent for such a competition publication, then the Chicago Tribune Tower competition would be a useful model. There, all entries were documented with a full page photograph. All photographs were of the same required drawing.*
*In the proposed publication for the Yale Mathematics building, this is not the case. Certain entries are included, and others are excluded, without any explanation as to how the selection was made.*
*This leads one to the possible conclusion that schemes were included or excluded for some very purposeful yet undisclosed reason. But for future historians, the record will be of little value.*
*If all the schemes are eventually included, then they should be presented in a neutral framework so that serious analytical work will be possible at some future date.*
*As for the essays, there is obviously an attempt to raise the level of importance of the competition by their inclusion. This is admirable. Further, there is an attempt to save these contributions from seeming to be mere homage to the winning scheme, and to establish them as a record of the critical controversy, as, for example, in the inclusion of Colin Rowe's essay. While this essay in itself is a commendable piece, it takes on a brilliance when compared to the other rather less precise contributions. But it is possible to point to other essays, such as the Venturis' and Charles Moore's, where they have been somewhat more articulate in elaborating their views. One suspects that their essays suffer from being caught being polemical in a supposedly neutral context. In this sense, the presence of Mr. Rowe's article can almost be seen as a smokescreen for what amounts to the exposition of a very particular architectural position. It would seem that while the competition itself and its resulting influence might amount to a statement of such a position, the record of the competition itself should not. Competition documents should be for the recording of history, not the making of future history.*
*If the Yale University Press wants to publish a book on the positions advocated by Messrs. Venturi, Moore, Scully, Lyndon, and Stern, that is one thing. If it proposes to publish a competition document, that is quite another matter; for inherent in such an intention is the assumption of neutrality.*
*In conclusion, it is my opinion that the Yale University Press should endeavor to produce a competition record. If such a record is to include critical essays written at the time, then the Press should attempt to include at least one, and perhaps two more essays, presented in a carefully reasoned manner, so as to amplify the real and important critical division, which exists regarding the Venturi position. Alternatively, it should have no essays at all. Respectfully submitted, Peter D. Eisenman.*



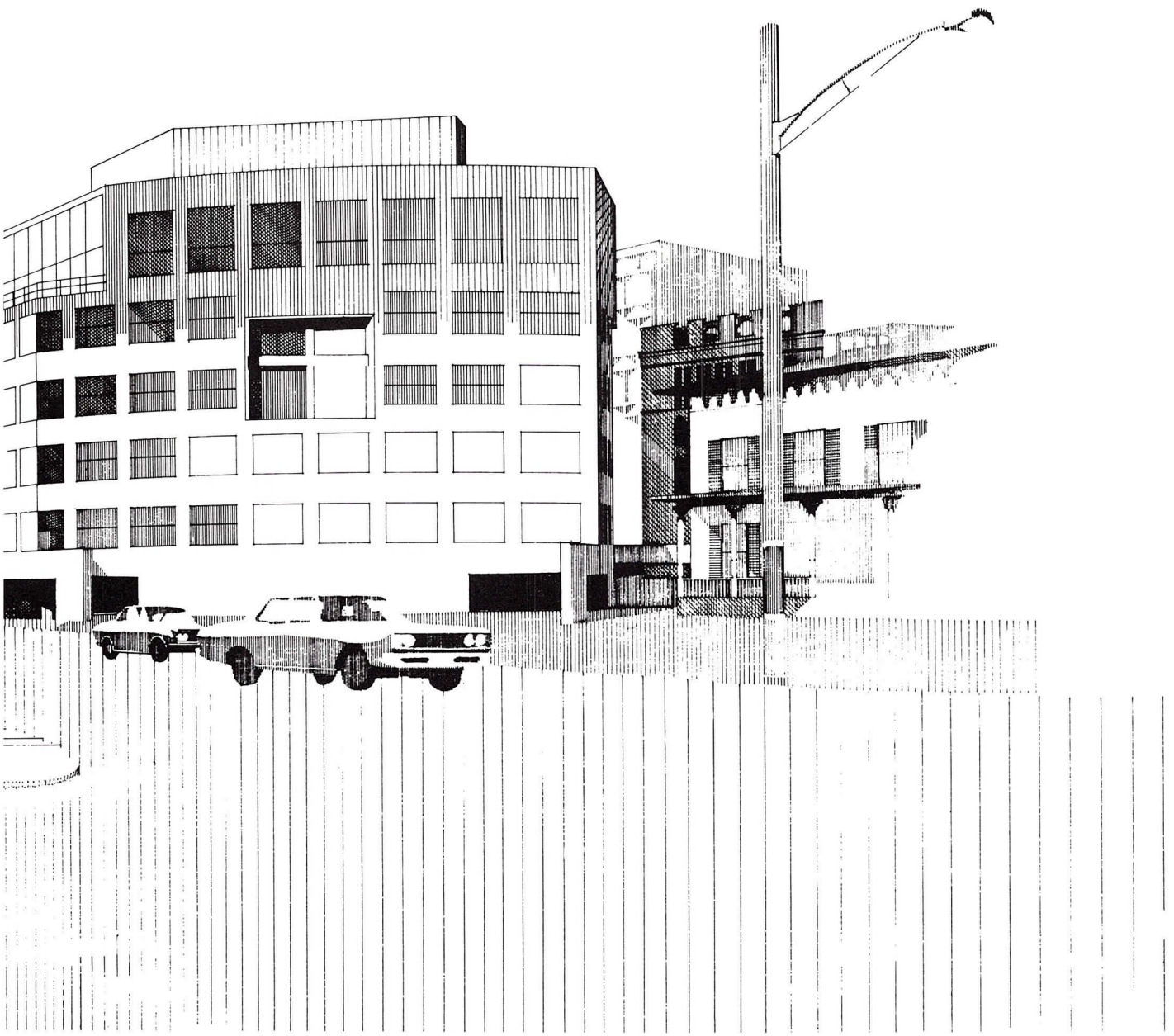
Some four years after this letter was written, a rather slim volume on the competition has appeared. While it no longer is an homage to one particular style or position, it still remains a rather incomplete account of the competition. It records only twenty-some entries from the first stage. But more importantly it is shorn of three of its essays—those by Colin Rowe, Charles Moore, and Robert Venturi. While one approves the attempt to produce an objective record, the suppression of these three relevant essays, that seem to engage the issues of the competition better than the projects, is an affront to the architectural world, no matter what persuasion. The piece by Robert Venturi and Denise Scott Brown has been published in their book *Learning From Las Vegas* (see pp. 150–155), 1972. The Colin Rowe essay and the Charles Moore response, both revised and originally written in 1970, are published here for the first time. Vincent Scully's essay was written for this publication. PDE

2

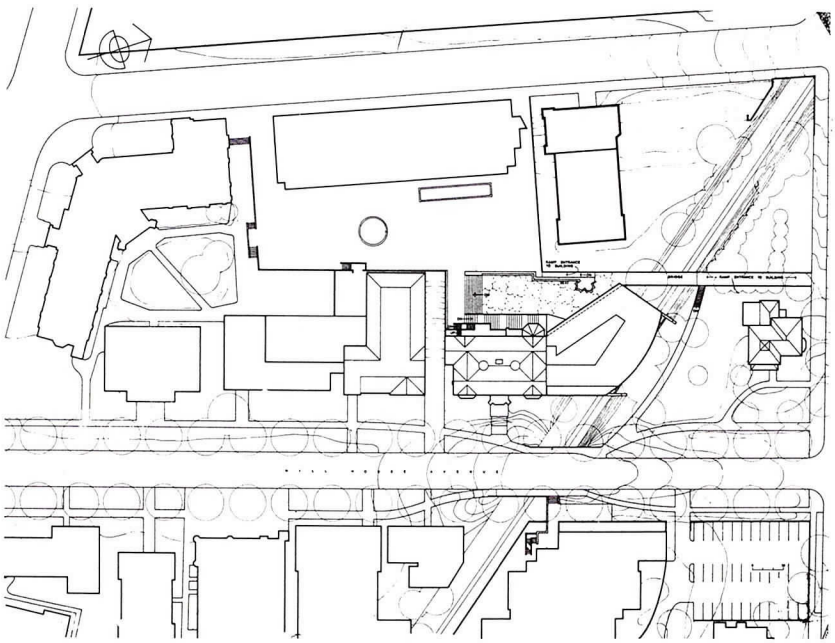
*1.*

*1. Yale Mathematics Building Competition, New Haven, Conn. Venturi and Rauch, architects, 1970. Perspective.*

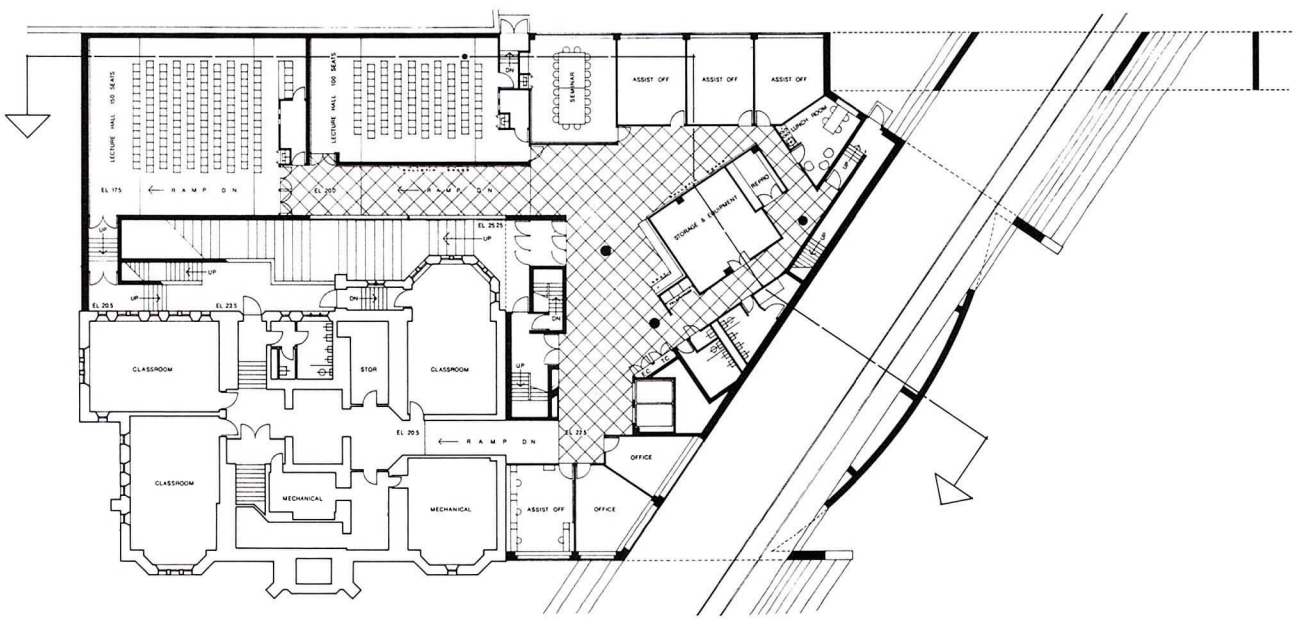




*2. Yale Mathematics Building Competition, New Haven, Conn. Venturi and Rauch, architects, 1970. Site plan.*

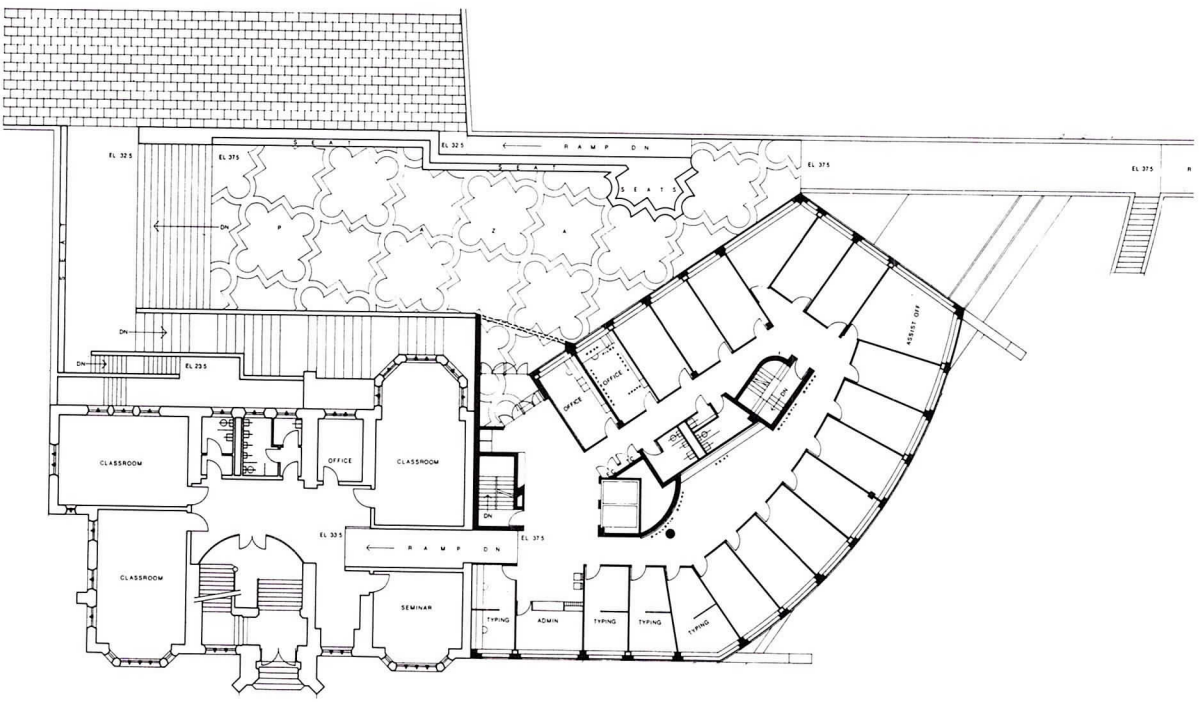


*3. Basement plan.*



*4. First floor plan.*

*5. Second floor plan.*

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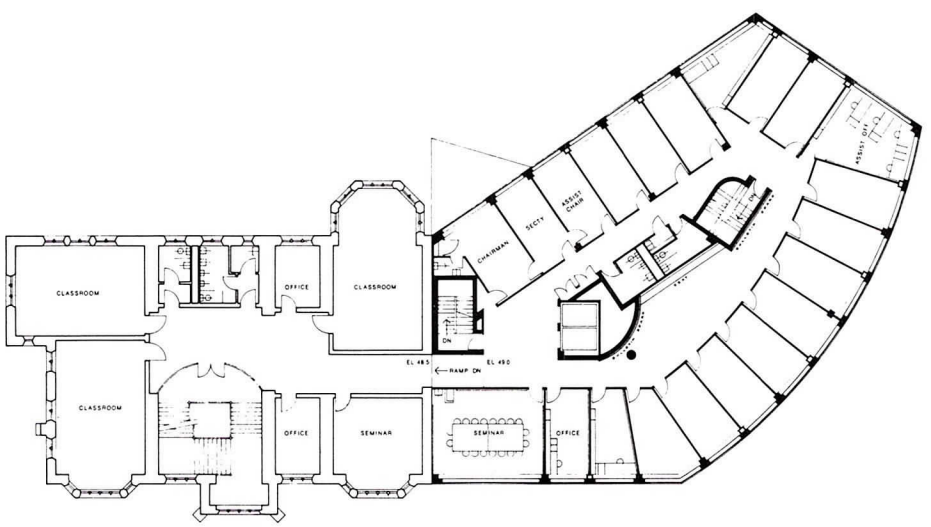


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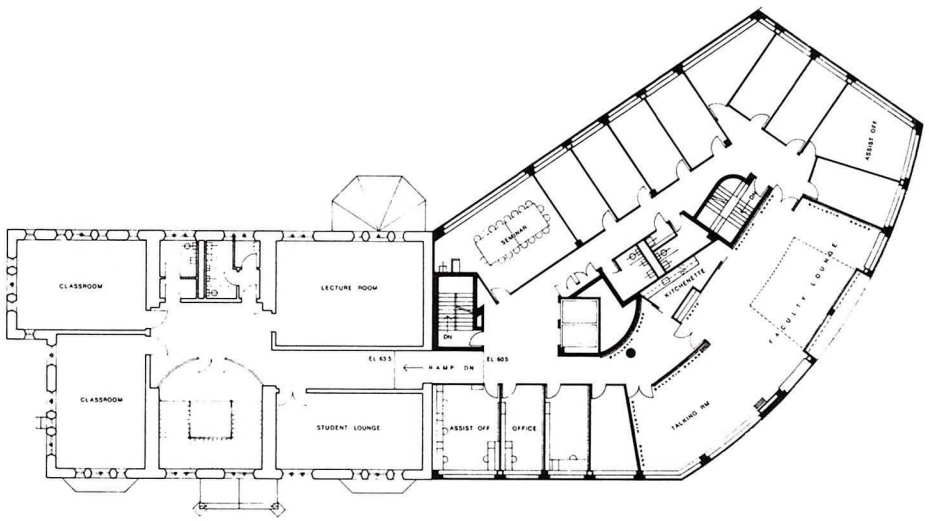
*6. Yale Mathematics Building Competition, New Haven, Conn. Venturi and Rauch, architects, 1970. Third floor plan.*

*7. Fourth floor plan.*

6

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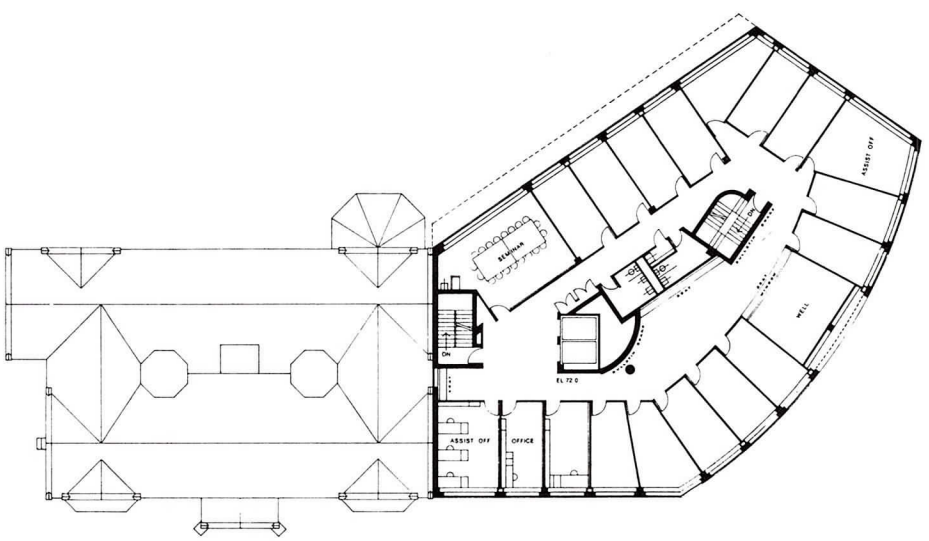
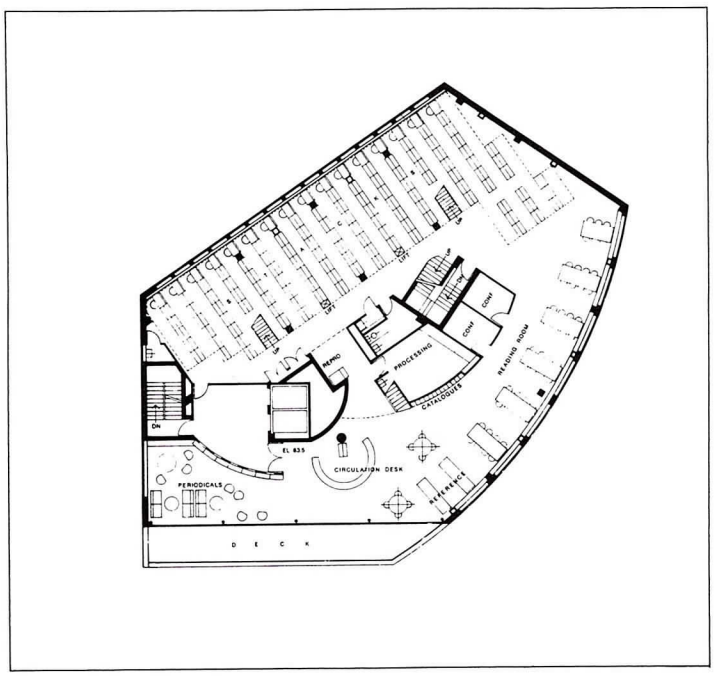



*7.*

*8. Fifth floor library plan.*

*9. Library mezzanine plan.*

*10. Section.*

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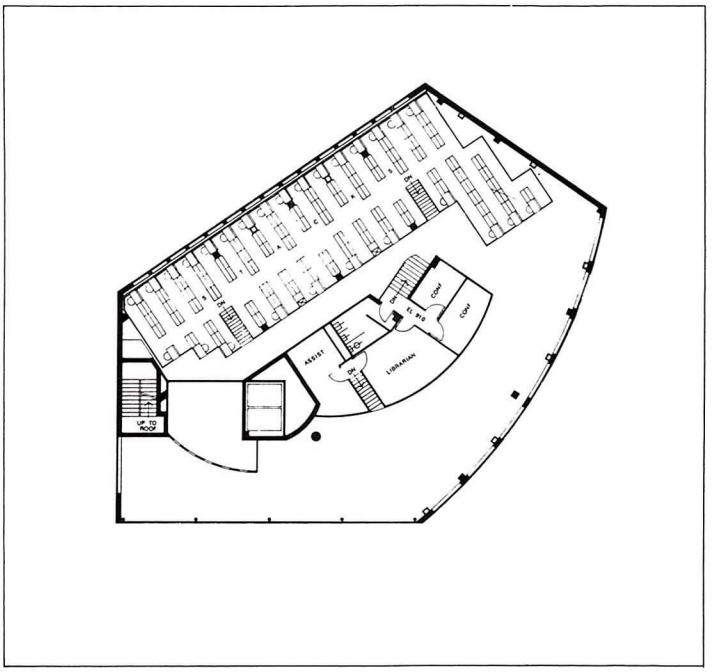


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10.

*11. Yale Mathematics Building Competition, New Haven, Conn. Venturi and Rauch, architects, 1970. East elevation.*

*12. Northeast elevation.*



*11.*

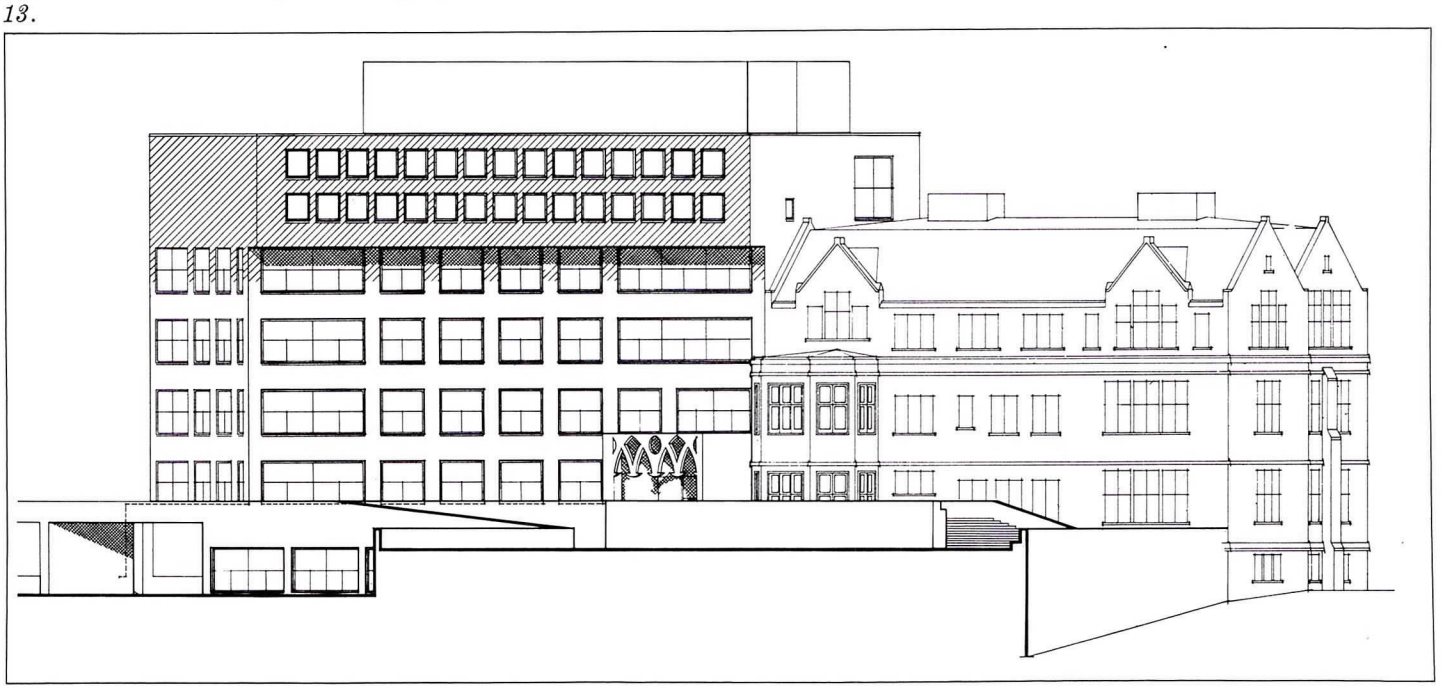
*12.*

*13. Northwest elevation.*

*14. Southwest elevation.*



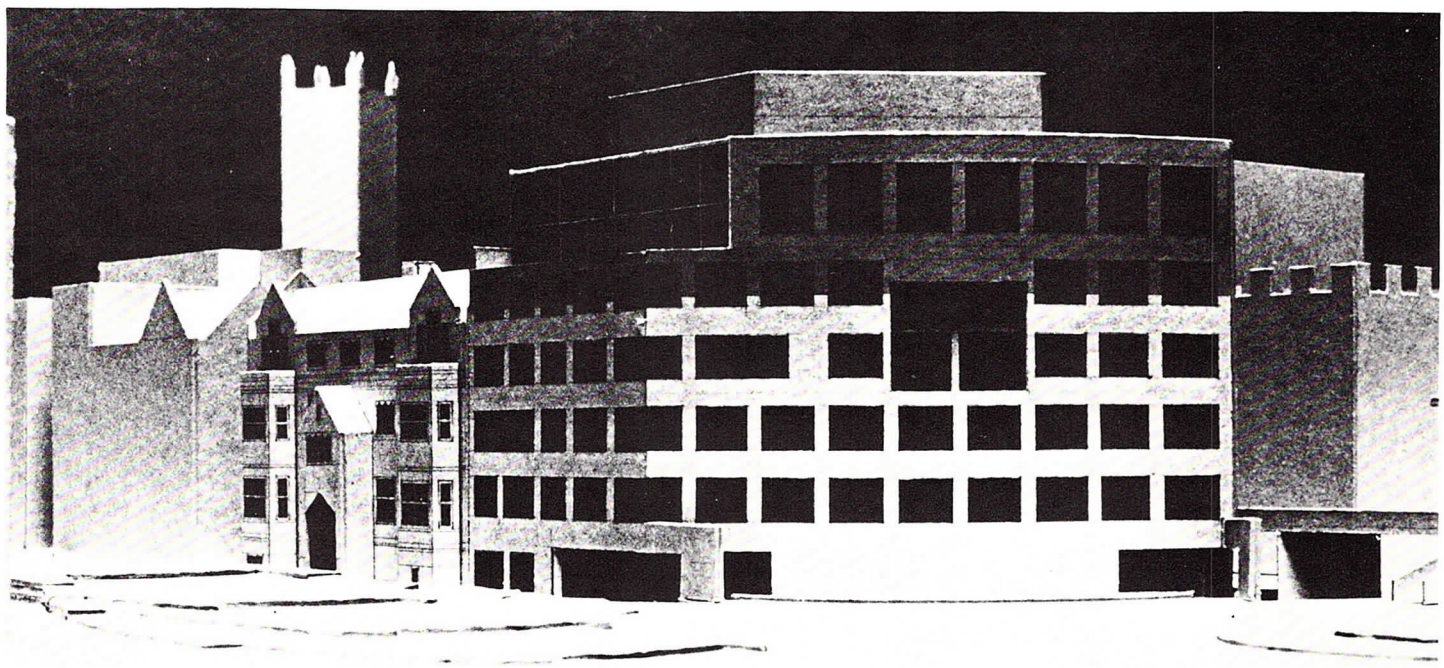
*13.*



*14.*

*15, 16. Yale Mathematics Building Competition, New Haven, Conn. Venturi and Rauch, architects, 1970. Model.*





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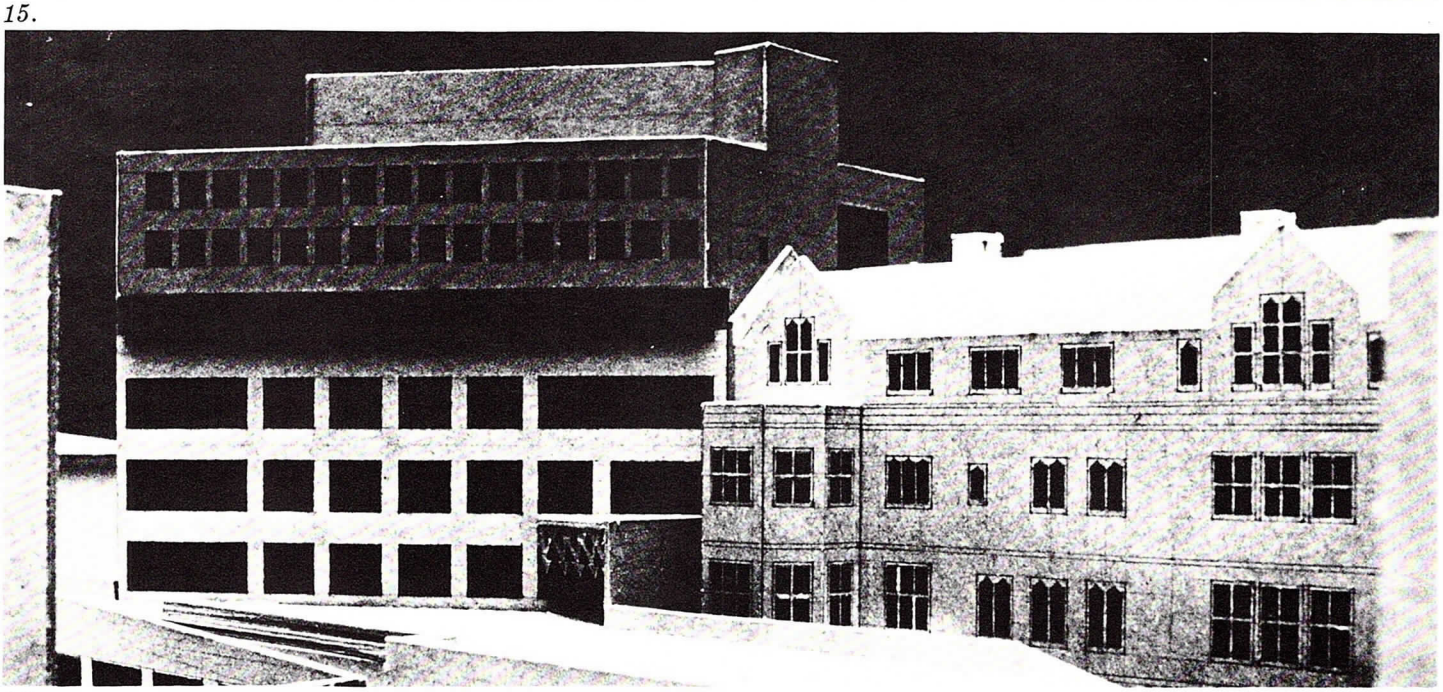

*16.*

# Robert Venturi and the Yale Mathematics Building

Colin Rowe

*Colin Rowe is a Professor at Cornell University, Ithaca, New York.*

Robert Venturi continues to be the victim of what seems to be a campaign to enlarge him beyond what he really is—a thoughtful, attractive, and, so far, insufficiently considered figure. This seems a pity. For Venturi has integrity, talent, and an interesting point of view. He has written a book which discloses him to be something of a mandarin; he has designed a number of buildings which suggest something equally élitist; and, because he admires paradox, he also professes a feeling for the commonplace.

Thus, for the Yale Mathematics Building, he has made a project of which he says that "the image is ordinary" and "the substance is ordinary," and though there should be nothing wrong or remarkable about that, still, if a genuine commonplace is indeed to arise in Hillhouse Avenue, then what should there really be to talk about? And why should criticism be solicited? Because, surely, if the Mathematics Building is to be what it is said to be, then it will be no more than the equivalent of any old Main Street job; and though, as such, it might afford casual gratification (native genius in anonymous architecture?), presumably it could, quite well, be left unprovided with critical notice.

The answer is, of course, that the Mathematics Building is not what it is said to be. For, in the context of Venturi's project, is it not evident that the word "ordinary" belongs not so much to the public realm as to a quasi-private language? That it implies values which are not so much commonplace as they are arcane? That being "ordinary" is the low-key advertisement of a point of view which implies not so much a passive condition as a polemical one? That, while to be "ordinary" is to seem to be ordinary, it is, also, to be difficult, to be cryptic, to be cute?

This said, it would be agreeable if we could approach Venturi's project without more verbal ado; but, unfortunately, we cannot. For the direct approach seems to be blocked—by words which intervene to disallow any immediate, analytical contact.

These are, primarily, words concerning Venturi's reputation. "He has so far enjoyed little popular success and incurred surprising professional resentment"; however, he is "one of the few American architects whose work seems to approach tragic stature in the tradition of Furness, Sullivan, Wright, and Kahn"; moreover, he is "an Italian architect of the great tradition"; and, if Le Corbusier's Carpenter Center has been "in all ways more understood, apparently, by Venturi than by any other architect in America," then also, though his *Complexity and Contradiction in Architecture* is as "graceless and inarticulate as only the new can be," it too is "probably the most important writing on the making of architecture since Le Corbusier's *Vers Une Architecture* of 1923."[1]



These are among specimens of the critical hyperbolics with which Venturi's name is now enmeshed. Apparently a niche has already been prepared in the architectural hall of fame; and, since the image has arrived, it now only awaits installation. Venturi has, after all, not only the most elaborate recent pedigree—Sullivan, Wright, Le Corbusier, *et al*—but we know that we only have to search a bit and we shall find both Aalto and Lutyens acting as sponsors; while we are well aware that, if we prolong our investigations, a whole host of more remote but equally important figures—Vanbrugh, Vittone, Soane, and almost any architect of the last four centuries who has displayed moderate sophistication—may safely be conscripted to decorate the lower branches of the genealogical tree.

This is to exaggerate an only too prevalent critical tone which, by claiming too much, can only incite disbelief. Simply, we feel that the credentials are being forced; and, even when the stereotypes of aggressive art history become qualified by 'gentle' information as to Venturi's ironical insights, his modest feeling for compromise and 'accommodation', his 'inclusiveness', and that unerring commonsense such as few others possess, still our skepticism is not allayed. We continue to wish to expel at least some of the clouds of critical incense which fog the air.

For in spite of the insobriety of his admirers which inhibits approach to his buildings and virtually defeats all possibility of a logical handling of his ideas, Venturi must be recognized as somebody with something to say; and, as Alan Colquhoun has pointed out, if his *Complexity and Con-*

*The Editors do not wish to enter a debate over the paternity of the winning scheme for the Yale Mathematics Building competition, therefore it should be noted that this project was designed by the firm of Venturi and Rauch, with the assistance of W. G. Clark, Steven Izenour, and Denise Scott Brown.*



*tradiction in Architecture* is something less than consistent, there are many aspects of his general theoretical position which ought to command a very easy assent.[2]

Thus, Venturi finds it hard to accept the dated *naïveté* of that body of ideas which still circulates as modern architecture's apologetic; and, though he does not say as much, one suspects that he would be just as prone to condemn the Bauhaus ideal of a *total architecture* as being something dangerously Wagnerian. That is, while he is appalled by simplistic explanations and aspirations, rather than any "survival through design" (with all the real brutality *that* implies), he would prefer to insist upon the usefulness of a dichotomy between "high" and "low" culture, between "fine" and "crude" art, and upon the complete normality of a two-way commerce between the "polite" and the "vulgar."

Having no faith in the efficacy of any single, universal, world transforming principle, Whitehead's observation that there is no reason to suppose order more fundamental than chaos would seem to approximate his point of view; and this feeling for the empirical multiplicity of any given situation rather for any cosmic vision of a millennium also carries over into what seems to be anxiety to emancipate architecture from the grip of historicism—meaning not from *the styles* but from the very Germanic supposition that history, irrespective of persons, is an irresistible force, that obedience to it is a moral imperative, that to deny the *zeitgeist* is to invite catastrophe, and that the architect's most elevated role is to act as no more than the agent of necessity, as midwife for the delivery of historically significant form.

In *Complexity and Contradiction in Architecture*, Venturi only hints at a criticism of these ideas, but such criticism may still be recognized as distinctly implicit in his eclectic choice of illustrations. Mostly of Mannerist, Baroque, and Edwardian provenance, these are presented without apology; and there should be no more than this unabashed advertisement of his taste required to indicate his conviction that we are not entirely the victims of ineluctable historical process, that we are equipped with, at least, *some* freedom of choice. All this is what his illustrations seem to say. They are exemplary, and he infers that there is no embargo upon their employment as models.

But it is, at this stage, that Venturi seems to become a little evasive. He has—and perhaps not quite consciously—been concerned with de-mythologizing modern architecture; and, in the process, he has arrived at drastic, if not unique, conclusions. Neither the apocalypse-utopia nor the *zeitgeist* myth is he able to accept; while it may be surmised that for the dependent myths, both the scientific and the ethico-technological ones, he also feels very considerable reservations. This leaves us with the problem that, though one cannot object to Venturi's skepticism, one might agree with him all the more readily if he were to have provided any indication of an awareness of the seminal role played by myth in the development of any architectural approach, strategy, or style. For, if it is myth—in collaboration or conflict with social and technological conditions—which is the ultimate architectural determinant, Venturi scarcely subjects this issue to examination; and, certainly, he never stipulates that the forms he admires came about through the activity of just such fantasies as he seems prone to reject.

Such scrutiny, it could be claimed, lies outside the scope of *Complexity and Contradiction in Architecture*; but, by its absence, evaluation of Venturi becomes more difficult and we are finally left wondering what, in this area, he does think or believe. Does he, for instance, conceive of a world in which myth has gone away and in which reason is, at last, ideally free? Or does he, desperately, hope that Main Street and Las Vegas can provide an adequate base for a continuing mythic structure? Or does he, with even more justified desperation, assume that, in a world where all myths can be uncovered, wit—with its allusiveness and integrity—can operate as the skeptical equivalent of belief?

His buildings would suggest that something like the last question frames his ultimate position; contrariwise, his Las Vegas study implies that the second question does profoundly interest him, while one can only suppose that the first question he would find to be a merely rhetorical device.

And so Venturi shuttles between an esoteric ideal—the

game of the learned reference and the calculated footnote—and a would-be exoteric and populist one. Hence his preoccupation with ambiguity, whether of meaning or form. Honky-tonk and Caserta, Frank Furness and Hawksmoor, Parisian *hôtels particuliers* and the Capella Sforza, small town America and McKim, Mead and White, anything which can be ironically considered or is itself ironical has been absorbed if not always digested, and Venturi has then felt amazingly free to play with these discrete items as though they were the ingredients of a *collage*. We paste on allusion to the Villa Aldobrandini; we make clear, *to the happy few*, our infatuation with the William Low House at Bristol, Rhode Island; we make commentary upon Stupinigi, Pavlovsk, Howard Johnson's or Route 66; and then we syncopate the mix.

Given the arguments of reasoned disbelief, this procedure via *collage* and innuendo is, in principle, not to be faulted, but, if it is a procedure which can produce the most enviable results and also a genuinely Twentieth-Century discovery, the idea of the ironical juxtaposition of things taken out of context has, in general, been profoundly antipathetic to the conscience of the so-called Modern Movement; and, even though Le Corbusier was himself a great master of the architectural *collage*, the general bias of the contemporary architect's "morality" has contrived to inhibit the use of any technique so obvious and so rewarding.

But, if Le Corbusier, with what William Jordy has called "his witty and collisive intelligence,"[3] could bring into headlong confrontation the most diversely significant images and metaphors, this is something of which he rarely talked and which, though it was fundamental to him, he made no attempt to rationalize. Instead, what Le Corbusier talked about were "the great primary forms," the *ville radieuse*, and other equally grand abstractions; and what he attempted to rationalize were such normative facts as the column-grid. In other words, *publicly*, he upheld a structure which he could then, *privately*, proceed to contradict. For contradiction does imply something valuable and known in that which is contradicted; and, just as Le Corbusier's complexities are located in simplicity, so his contradictions assert a situation conceived to be public.[4]

Now, with Venturi, this does not appear to be the case; and, because it may seem a little ludicrous, *overtly*, to set up a situation in order, *covertly*, to shoot it down (Le Corbusier's pretended Platonic structures which are then riddled with whole salvoes of pretended empirical detail), Venturi's position may be more logical than that of Le Corbusier. Though perhaps logic, like morals, presumes always a question of geographical (and temporal) location.

For, in spite of a logic which one may wish to attribute to Venturi, he seems never to specify (except verbally?) the simple scene within which he wishes to be complex, nor any received order which he wishes to contradict, and thus, while one may understand, and share, his anxiety to criticize certain myths, one can scarcely understand, or share, the supposition that such criticism leads where it appears to lead. Thus, apart from a taste for ambiguity in itself, which may be sponsored and guaranteed by the best authorities, and may be understood, just what *is* it that Venturi is trying to contradict? The received myths of modern architecture? The doctrine of Walter Gropius? But then *who* is not trying to contradict *just* these? It is not easy to do so, and thus, and even after Venturi has dilated, things are still left insubstantial and not promising. For the delights of Las Vegas are principally delightful because they violate the sanctions of "good taste," and pseudo-Mannerist exercises are the pleasure that they are because their erudition can be communicated to the connoisseur. But neither taste nor connoisseurship are possessed of any very public substance; and it may for this reason that what have here been called Venturi's *collages* have appeared, in their frameworks, to be too researched and, in their ingredients, to be too fragile to admit of any very deep satisfaction. They have seemed clever and decorative, evocative and nostalgic, the entertaining *scherzi* of someone definitely informed rather than anything profound. Not, really, quite *collages*, not quite Dada, insufficiently "mod," or "pop," or "op," sometimes engaging but always insufficiently witty, they are a little pedantic; and, though one may enjoy them up to a point, they are apt to leave us with the knowledge that, so far, Synthetic Cubism has provided a far more solid collection of images for *collage (objets à réactions poétiques)* than anything that art history and the various

cults of Americana have been able to supply.[5]

Possibly this is a dismal conclusion, but it should not be allowed to obscure a further observation as to what seems to be Venturi's position. One alludes to an apparent Americanism, to a seeming desire to make, not so much architecture, as to make American architecture. Whether this is good or bad, who is to say? But it may, probably, be assumed that Le Corbusier never set out to be French; that, though his images are indisputably local, he conceived of both them and his procedures as being universal in their meaning and application; and it may be, as a result, that his local images thus became imbued with the most poignant generality. They were related, not to the world as it is, but to the world as he supposed it should be. For, whatever his passion for empirical detail might have been, Le Corbusier still proposed the issue of utopia versus empirical life; while, by contrast, Venturi may be seen as appealing to "life" itself, to "ordinary" life, the life of the art historian, the Mafioso hick, or the owners of the ranchburger around the corner, all being assumed to be equally significant.

And, if the notion of the 'ordinary' ('people' as found *without* overt utopian idealization) begins thus to acquire some specific meaning, we might now also notice how the world of Venturi's images is without homogeneity, how it seems to be rifted, how there here seems to be signified a world of ancient culture—aristocratic and primarily European—which is juxtaposed alongside a world of imminent culture, an incipient modern world which is, primarily, American.

This cleavage, I think, should be evident to anyone who is not hopelessly prejudiced either in favor of Venturi or against him; and it would seem to be important. For it allows Venturi the best of all worlds; he can be, simultaneously, the Jamesian American in Europe, indisputably more refined (and less Marxian) than any European could ever be, and a Whitmanesque type in the United States. He may be privately esoteric and can publicly extol the democratic virtues. He can enjoy all the comforts of connoisseurship and may still have at his disposition the myth of America's incompleteness and potentiality, that myth of America's youth that Oscar Wilde called its oldest tradition.

With this notice of a probably harmless nationalism, which may not be entirely irrelevant to a consideration of the Mathematics Building, we may now approach New Haven and Hillhouse Avenue; and, in doing so, we may wonder how it is that, in the last twenty years, the quality of the Yale campus has become so dissipated, and why it is that, after this time, Yale's more spuriously eclectic buildings should now seem to be so much more authentic and convincing than those which have deliberately set out to be so. The two questions are interconnected and the first is more easy to answer than the second.

"Not Gothic but Modern for our Colleges" was the somewhat retarded title of an essay published by Walter Gropius in 1949, which could still win a prize in 1951;[6] and, if by that time, the practical results of a new approach were already to be seen in the Harvard Graduate Center, it was probably the Massachusetts Institute of Technology that immediately pushed furthest the idea of a university campus as a kind of picture gallery for the exhibition of works by modern architects believed to be distinguished. And the policy proved irresistible. For was it not patently progressive? *Is not modern architecture the outward and visible sign of progress? And do we even have to look at it to know this? And, after all, have we not been told?* . . . so that, as one unconnected gesture followed another and as academic communities, from coast to coast, proceeded to erode their environment, they could always do so with the pleasingly liberal conviction that they were definitely not left behind, that they were *au courant* and completely abreast of the march of history.

It must all have been immensely reassuring and some of the more unhappy illustrations of this policy are to be found standing around the Yale campus as the icons of a new world that never came about. It is not desirable and should not be necessary to itemize these horrors. For, officially, Yale is still "proud of its modern monuments"; and, in any case, everyone has his own list. Instead, it is enough to say that the Yale campus is scarcely the "open air museum of modern architecture" that is proclaimed, but rather that it is a theater of the architectural pseudo-event—not so much a museum as a version of Madame Tussaud's, a waxworks

exhibition displaying important simulacra of the good, it being assumed that, for practical purposes, these must be quite just as good.

One fake performance after the other, and all in the ostensible name of honesty, have constituted a horribly protracted joke, but while Yale, like other institutions, seems to have been unaware of this and journalism has consistently acclaimed it, apparently somebody has, finally, intimated that it has all been more than enough and, therefore, it is now again the value, not of individual buildings, but of the campus as an entity that is beginning to be asserted.

To speak of the "strong existing" and "the superbly integrated fabric unifying the central part of the campus" is, at New Haven, no exaggeration; and the Yale courtyards and quadrangles of the years around 1930 will increasingly come to be regarded as one of the greater urbanistic achievements of that period. Stylistically, indeed, they are far from avant-garde; but are they, for that reason, any less historically significant? Few great urbanistic achievements ever are avant-garde, and the acknowledged achievements of the years around 1930 (mostly in the area of European housing) may now seem to be less useful, so far as we are concerned, than the example of the Yale campus. But, if the Yale campus, in its classic phase, is now to be pushed forward as paradigmatic, there is still something dubious we might feel about this operation. In the first case, because it may seem a little inbred; and, in the second, because, just as one policy was pressed too far in the spirit of innocent optimism, one may feel that another is now about to be too cynically and pessimistically pursued.

None of this denies the concern that has prompted the Yale Mathematics Building competition. Indeed, one can imagine only too well the manoeuvres necessary to put over this idea of deference for the existing. One can almost smell the lobbyings, the arguments, the rebuffs, the sophistries, the drinks poured; and, in the end, one can sense a bureaucratic resignation: *Well, and why not make of the Mathematics Building a test case, something which will certainly be new but which will still recognize "the superbly integrated" and the "strong existing" fabric? And why, for that matter, should the Mathematics Building not be the subject of a competition?*



These, then, might seem to be the anterior circumstances of the competition: a good idea which was insufficiently presented, inadequately received, and then deployed neither in a proper place nor at a reasonable scale; and, in the results, one can sense the conditions of the compromise: deference for the existing, perhaps more than should be required, and excess of accommodation which makes the possibility of such deference largely illusory.

From what has been published, so far as can be judged, it seems certain that, out of the five finalists, Venturi's project was the most deserving. Yet what can be said about it? That it displays a certain bald authority? That because it does not set out to seduce, it succeeds in doing so? That it promises to be the best building at Yale since about 1952? That it is certainly far better than Venturi claims it to be?

To answer all these questions in the affirmative is, probably, to be only fair; but it is also to abandon the strict sequence of logical discussion. We have, so far, inspected Venturi and inspected Yale—the two contexts to which the building must ultimately relate. A product of Venturi's mind and temperament, it is also a response to a specific situation in New Haven; and, in so far as it is possible to make this separation, it will be convenient to review the proposed building from these two standpoints.

So it is an "ordinary" building. So "ordinary" indeed that it is almost supposed to be *not there*. But the problem of the bulk of the building (and this must surely be a fault of the program) made it a little difficult for it to wither away like the state after the Marxist millennium. However much wished or willed, and whatever the ideal of the unobtrusive, it could just not be made to go away. It was indefeasible and, therefore, the argument that something so large could become neutral simply had to be propounded. But a dependency (the extension to the Mathematics Building) cannot very well become all that much larger than that upon which it depends (Leet-Oliver); and one may observe Venturi struggling with this problem. He has altered the color of the

brick in the upper floors, he has combined extensive references to Alvar Aalto with, maybe, more distant memories of the Palazzo Massimo, he more than hints at an old style New York City ziggurat; but, with all this, the problem of bulk he has not been able to reduce—simply because it was not to be reduced.

But with so much (or so little) observed, it is comparatively easy to travel to the back of the building and to notice that, although problems of bulk are painful on the Hillhouse Avenue exposures, they become little short of agonizing when we survey the confrontation of old and new at the rear; and, if much may be written off to irony, if it may be claimed that this abruptness of juxtaposition, however amateur it may appear, was willed, then, where lurks around that willful framing plan, when there has been all that care about Gothic paving patterns, when we observe a pseudo-Gothic entrance screen arbitrarily arranged at a self-consciously clumsy angle, it might be best to withdraw attention from these obvious and easily discernible failures and to ascribe their apparent irresolution to the program. It might be best to concentrate attention not upon the details of Venturi's building, but upon the whole.

As regards the whole, we are, again, faced with the problem of its being "ordinary," a condition which Venturi's personality and the details of the competition both, alike, act to deny; and, here, the ideal of the "ordinary" has led to a manifestation that is supposed to be the equivalent of Main Street but which is not that equivalent because it assumes towards Main Street a sentimental attitude. It has led to a building that, in its refusal to communicate, in its determination not to reveal, in its assumption of the primitive and the banal, in its supposed innocence and its very great formalism, in the profession it makes of being addressed to the 'average' man, is, externally, supremely affirmative of the pathos, the unassuming beauty, and the hopelessness of a matter-of-fact pragmatism. It has led to a building that both celebrates and calls into question a Rotarian ethos; and that, in its supposed rejection of quality, becomes almost ostentatious.

It has also led to a building that assumes the Puritan disguise—external reticence as camouflage for private luxury—and that, because of its enigmatic and deceptive exterior, can afford, inside, to elaborate the scenographic richness of an entirely other tradition. The public face is deadpan; the private world is chic. We rest upon our privileges and dissimulate their existence, which is all a little like Park Avenue—externally, "facts" (Connecticut know-how?) and, internally, subjective performance (Ralph Waldo Emerson for purposes of decor and public relations?).

And certainly Venturi, inside, insists upon everything other than factuality. But, if his circulations are to be enjoyed, if they are more spatially playful—in a European sense—than anything which has lately been witnessed in the United States, if they assert a primary dependence upon Le Corbusier and a subsidiary reliance upon Aalto, there could be quality of interior decoration about them which might not be entirely pleasing. A *coup de théâtre* they certainly are, but it might not be wondered whether this effect has not been secured at the expense of an undue lesion between inside and outside; and, though this lesion could be thought of as something deliberately intended to disturb, though Le Corbusier practiced similar lesions, it could possibly be argued that Venturi's exterior and interior are, maybe, just a little too disrelated.

But, theatricality apart, in spite (or because) of his refusal to assume a grand image, with Venturi, we are still dealing with an aboriginally American building. We look at it. It is not to be rationalized with ease or without introspection. It is—if we like—quite mundane; and it is also—if we like—quite respectable. It has many virtues; but, this being said, the obligation now remains to relate Venturi's proposal to the Yale campus.

So we have what is alleged to be an important attempt to make "art" out of vernacular material, and we have something which is further alleged to be the rigorous solution of exacting functional problems. But we also have something which claims to be a significant contribution to the expressed idea of Yale as a spatially integrated campus, a campus in which, once again, buildings and their context

will become components of equal value. And it is here that it is very hard not to repress a doubt.

Of course, once again, we may be in the presence of a defect of the program. The program proposed deference to an existing building, but seems barely to have envisaged deference towards a potential space. And thus, the oblique archway of Strathcona Hall, leading into an area that *might* have become something but that now threatens to be *never* anything, could plausibly have been expected to receive some equally public gesture from the Mathematics Building. This need not have been excessive—perhaps something in the form of a comparable opening leading through to Hillhouse Avenue. But nothing of this sort has been envisaged or provided; and, as a result, having been admitted to a court via the rhetoric of the Strathcona archway, we are compelled to make our egress through a variety of back alleys. And, most notably, we are compelled to move between the rear of the Sheffield Laboratory and the end of the Mathematics Building, to proceed alongside the kitchen entrances of the Dana House to arrive ultimately in Trumbull Street—an architectural promenade which, while it may be rough and tough, should scarcely be regarded as any instance of spatial integration and which, certainly, is no experience that any one of even far less than average sensibility would, willingly, wish to undergo.

This is to observe an urbanistic failure and to notice what should be regarded as the most glaring defect of Venturi's proposal. For the courtyard now becomes a back space, not the useful link between Woolsey Hall and Hillhouse Avenue, which ought to have been its destiny, but, instead, something condemned to existence as a stagnant cul-de-sac. Thus, while the Mathematics Building may very well defer to the Cotswold pastiche of Leet-Oliver and the public façade of Hillhouse Avenue, it cannot seriously be considered as deferring to the spatial themes of Yale.

And it is here again that we return to the problems of the building's bulk with which we have already observed Venturi struggling. That is, simply by its sheer size, the building cannot ever be a mere addition to Leet-Oliver; but, instead, because of its size, it must inevitably function as one of the more important ingredients of the whole block lying between Prospect Street and Hillhouse Avenue. Also, because of its size, however neutral it may aspire to be, the building cannot ever behave as not more than a passive infill; essentially, its obvious life must be that of assertiveness rather than diffidence.

Perhaps the about-face from the object-like establishment architecture of the sixties, now decried as monumental, has been all too abrupt. Or, possibly, the rapidly prevailing idea of building as not so much "object" but "texture"; has been interpreted all too completely; but, in any case, it could be suggested that Venturi has produced a building which, while it has been conceived as texture, operates as object, and that, however much he may wish to intellectualize his contribution away, he has made something more prominently assertive than most other buildings which have deliberately set out to be so.

It is thus we may have the feeling, after protracted contemplation of Venturi's project, that we are in the presence of a distended balloon, that something is about to burst; and, though this may not be an unpleasing sensation, because it is so engrossing it may be doubted whether it is appropriate. Maybe the project demands too much of our participation. We wish to puncture the balloon (to introduce an opening?), to relieve the tension, and to allow texture, once more, to become texture and object, object. What we wish is to relax a too artificial posture which, perhaps, the program has imposed and which prevents the building from collaborating as it should in the real community of Yale's older buildings.

If only the building could become more itself and less of a stylish cultural act, if, instead of setting out to be "ordinary," it had attempted to be *easy* . . . ; but these are values which, again, perhaps the program acted to inhibit. The program was fashionable and could scarcely do other than elicit, to some degree, irrationally self-conscious behavior. It presumed a modesty that, if pressed too far, could only be indiscreet, a discretion that could only become immodest, and, in this bashfulness of good taste, it left, apparently unexamined, the problem which we have al-

ready touched upon—*How can a dependency become so much bigger than that upon which it depends?*

A willingness to consider which was minor and which was major, which should be subsidiary and which not, what is tail and what is dog, would have helped this competition enormously, and, in a genuinely Main Street situation, this issue would probably have been sensibly discriminated in terms of the real volumetrics. Leet-Oliver would have been downgraded as the primary element, its extension would have been upgraded and, by these means, a good deal of strain and artificiality would have been avoided and the buildings might then have been assured of a far more congenial co-existence.

By these means, too, the real spatial themes of Yale, so well understood and elaborated by John Russell Pope, might have been awarded infinitely greater respect. For, in its classic phase, the Yale campus is a place of courts, implying walls, and of entrances to courts, implying archways; and, if there is about it a distinct flavor of hysteria, it is one of hysteria checked by very great reserve. It is an extreme situation; but one which succeeds admirably, in appearing not to be so. Instead, it excellently succeeds in insinuating the ideas of ease and geniality. There is texture. There are objects. But we are not made aware of either violent contrast or extreme cerebrality. Instead, whatever happens is able to occur as no more than the inflection of a single wall. There are entrance gateways and there are pavilions, things assertive in themselves, but only as things emerging from a wall to contradict, and thereby, to emphasize, reassert, and participate in its functions.

It is all a triumph of common sense, knowledge, passion, reasonable dissimulation, and money; and we must therefore ask why it is that, given common sense, knowledge, passion, and a willingness to dissimulate (Venturi), and given money (Yale), something comparable but a little different could not have been achieved.

And what is the reason why not? Or do we have to scrutinize our undue intellectuality and sense of social guilt which, both alike, prevent us from being "ordinary" or even very easy? Presumably we do, and, therefore, because we are irrepressibly concerned with rediscovering innocence, with the Garden of Eden, with the noble savage and his primitive hut, we might recognize that our reductionist fantasies impede our logical capacity. For in New Haven, an acceptable archetype is almost completely given; and, therefore, one may well ask for what reason the attitudes of knowing dissent, why the sophistication, and why—when modesty is declared—the inability to accept the existing message?

For the attempt to bring Main Street to Yale (however charming) is, iconographically, just as exotic as, in the last twenty years, has been formally exotic the importation of free standing, so-called modern building. Neither one is, or was, necessary. One *may* admire Main Street for one body of reasons, and one *could* admire the City Beautiful (of which the Campus Beautiful is an offshoot) for another. But, if we are to be truly "inclusivist," we are not compelled to make any choice, and we should know that both are available to us. We can feel for the brashness, the infelicity, the integrity, the alleged innocence of Main Street, but we can also feel for the decorum, and the, almost, genuine social concern of the City Beautiful; and, in this consideration, we may also recognize that Main Street is not more real because it is more ugly.

But ugliness, of course, seems to us always to be more "real" and "beauty" to be always so much more false; and, therefore, although what we inherently require is something astringent and well argued, we are constantly misguided; which is to continue for too long, for perhaps it should be enough to say: (1) that the proposed building is not, like so many recent Yale buildings, an embarrassing public relations' performance; (2) that, though it will certainly not be what it is supposed to be, it will surely be satisfactory; and (3) that, though it will not, in any way contribute to the greater themes which inform the Yale campus, its existence might still lead to the gradual reestablishment of these themes.

And, apart from all this, it might be suggested that the cul of ambiguity *could* become an excuse for irresolution, tha

the cult of the "ordinary" *might* become an alibi for non-performance. *Am I being fastidious or am I being careless?* One sees already where the question leads. Blatant failures can become explained as ironies and total lack of distinction may become exonerated by asserting the ideal of the average. We are here in the presence of something which professes to be active but, in reality, is more passive than it knows; and, if Venturi is in no danger of becoming the dupe of his own apologetics, there is the eminent, and imminent, threat of others becoming so.

Finally, it could be added that, because the Mathematics Building has quashed establishment architecture as we have known it—which is a very great credit to Venturi; there are few recent buildings (or projected buildings) that a serious critic could discuss with less equivocation than has here been displayed. To be worthy of criticism a building must possess qualities.

1. Presented as a specimen of pro-Venturi literature, the preceding quotations are from Vincent Scully's introduction to Robert Venturi, *Complexity and Contradiction in Architecture* (New York: The Museum of Modern Art, 1966). 19
2. See Alan Colquhoun, "Typology and Design Method," *Meaning in Architecture*, Charles Jencks and George Baird, eds. (New York: George Braziller, Inc., 1970), pp. 267–277.
3. William Jordy, "Symbolic Essence of Modern European Architecture of the Twenties and its Continuing Influence," *Journal of the Society of Architectural Historians*, October 1963.
4. Is the assumption of a situation conceived to be public and standard necessarily and always a 'good' undertaking? Perhaps not *always*; but, nevertheless, the normative and the typical do possess their roles and it may be doubted whether themes deriving from nineteenth-century suburbia can ever be promoted as usefully comprehensive generalizations. The role of these themes is essentially private and perhaps one should never ask for the public parade of private virtues.
5. Surely for the most part true, but the name of Kurt Schwitters and, preeminently, that of Marcel Duchamp should equally belong in this area.
6. Walter Gropius, "Not Gothic but Modern for our Colleges," *The New York Times Magazine*, 23 October 1949. Later republished as "Archeology or Architecture for Contemporary Buildings" in Walter Gropius, *Scope of Total Architecture* (New York: Harper and Row, 1955). In 1951 it was awarded the Howard Myers Memorial Prize.

## Conclusion

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20 It would be incomplete and misleading to describe the Yale Mathematics Building Competition (as I've done elsewhere, especially in our book, *The Yale Mathematics Building Competition)*[1] without noting that it has been, in the years since the announcement of the winner, hotly and even sensationally controversial; arguments about it appeared in the architectural press and even in banner headlines in the *Yale Daily News*[2] many months after the competition was over. The accusations which spark the argument are two, though they have sometimes overlapped: one, that the competition was a put-up job, whose outcome was predetermined in favor of Venturi; the other, that the winner is functionally or aesthetically deficient or wrongheaded.

I know the answer to the first accusation, having been there; the jurors judged carefully anonymous competition entries; and I can't imagine why Yale University, on the threshold of difficult financial times, would have spent tens of thousands of dollars and squandered hundreds of hours of unreimbursed time of my own and others to cover the naming of an architect who was unusually eligible to be named for a University commission anyway.

The second accusation, questioning whether the Venturis' architectural philosophy or their actual design is appropriate is not so flatly answerable, depending as it does on opinion, and a reading of history. Noting that the judgments described in our book were altogether favorable to the validity and appropriateness of the Venturi and Scott Brown philosophy and being aware that opposing points of view existed, we had originally asked Colin Rowe to describe his in the essay preceding this. Clarity now appears to demand a mediatory point of view, and I am wary of seeking a mediation which would require further mediation, in a ritual which would resemble the gradual sawing off of the legs of an unstable chair. Accordingly, I shall try to mediate myself, though I acknowledge that I have for years admired and defended the Venturi and the Scott Brown points of view.

That point of view has been, it has seemed to me, a liberal one, and the astonishment is that a liberal point of view about architecture should occasion so much rage. It seems to me evident (though we all give separate readings to history, especially recent history) that the powerful revolutionary orthodoxies of the earlier century—of Wright and the Bauhaus and Le Corbusier—have sometime ago spent their force. Each disclaimed the world around us, and set up an alternative whose image was clear. Well, though the physical world has changed a great deal, not one of those alternatives has prevailed, and the revolutionary orthodoxies of the later century—of Safdie and Solari and others—seem even more personal and limited in their appeal. One valid possibility would seem to be the reestablishment of intellectual ties with the actual world around us, including as many realities as possible, embodying familiar images before strange ones. Robert Venturi, in his writings and works, has been a leading spokesman for this liberal possibility. Somehow, it infuriates people. His bland pronouncement that "Main Street is almost all right" seems to have raised more architectural hackles than any pronouncement this side of Le Corbusier's that "a house is a machine for living in." And his I think altogether realistic defense of the architectural worth of complexity and contradiction has brought wounded assertions that it is all a complex and contradictory put-on.

Very lately, Venturi, Scott Brown, and Izenour have dramatized the conflict, which I confess does not clarify things much for me, between expressionism as a concern of previous architects, through Louis Kahn, and symbolism, which has appeared in their work. They have described, too, powerful enthusiams which I don't very heartily share, for the pop wonders of Las Vegas, the inevitability of Levittown, even the aesthetics of New York's Co-Op City. But their statement about the Yale Mathematics Building requires careful reading. "The image is ordinary,"[3] they wrote. "Why then," others ask angrily, "did an ordinary building so stand out from hundreds of others that it won the competition, unless the whole thing was a put-on, or a put-up job?" But look: no one is saying that the building is ordinary (nor, I think, is it); the statement is that the *image* on which the building was based is of the ordinary world around us.

There is an evident parallel here to another Yale hullabaloo

of a few years before, in which President Kingman Brewster noted that he was *skeptical* of the chances of a black revolutionary's receiving a fair trial in this country then. Skepticism on this count would seem to have been, as usual, healthy, given the attitudes which were then being announced, but across the country thousands of irate victims of speed reading denounced Mr. Brewster for denying the validity of the whole American judicial system.

Just so Venturi, who is saying "the image is ordinary," to talk about what Yale University and (I am sure) he both hope will be an extraordinary building. The concern is reminiscent of those Zen Japanese tea masters of the seventeenth century who so prized special pieces of character-laden rough pottery, which exhibited transcendental qualities of "naturalness" and "ordinariness," that they transformed them into museum pieces of extraordinary value. That was all pretty esoteric, but no put-on.

Colin Rowe picks up the same overtones, but objects to them. He calls Robert Venturi a "mandarin";[4] I assume he does not mean some kind of orange, but rather an aristocrat, to Chinese specifications which include more scholarship and less swordsmanship than in the occidental image. That bears out my own impression (as do almost all Mr. Rowe's observations) that Mr. Venturi is a gentleman of highly refined sensibilities (as well, I believe, as impressive professional prowess), who has found strength in the familiar, and sees in the ordinary the images to make buildings of compelling power, as well as complicated scholarship. (He makes, by the way, a great point of their working, and being delivered on time, and on the budget. This is praiseworthy, but surely not extraordinary: Holiday Inns are doubtless delivered on time, and on the budget too. It was, however, interesting to the jury to note that the Venturi and Rauch final-stage entry had been evaluated by the Yale staff as being considerably less expensive than the other first-stage entries.)

The jury for the Yale Mathematics Building Competition,[5] I am certain, would feel cheated if they believed that they had gone to all this trouble to premiate an ordinary building. If, on the other hand, they feel, as I gather they do, that they have picked an extraordinary work that gathers its strength from common images and puts high value on modesty as well as skill, then they can take pleasure in having opened, as Romaldo Giurgola put it in his review, "a new door."



Notes

1. Charles W. Moore and Nicholas Pyle, eds., *The Yale Mathematics Building Competition* (New Haven and London: Yale University Press, 1974).
2. John Geesman, "Scully Blasts Building Critics As 'Despicable Scum'," *Yale Daily News*, 29 September 1971.
3. Robert Venturi, Denise Scott Brown, Steven Izenour, *Learning From Las Vegas* (Cambridge, Mass. and London: The M.I.T. Press, 1972), p. 150.
4. Colin Rowe, "Robert Venturi and the Yale Mathematics Building Competition," *Oppositions*, 6, Fall 1976.
5. Edward Larrabee Barnes, John Christiansen, Edward Dunn, Romaldo Giurgola, Charles E. Rickart, Kevin Roche, and Vincent Scully.

*1. View to the south, down Hillhouse Avenue. On the left, the Department of University Health; on the right, the site for the new Mathematics Building.*

*2. View to the north, up Hillhouse Avenue. On the left, the site for the new Mathematics Building beyond the old Mathematics Building; on the right, the Department of University Health.*



*1.*

*2.*

# The Yale Mathematics Building: Some Remarks on Siting

Vincent Scully

*Vincent Scully is the Colonel John Trumbull Professor of the History of Art, and the Director of Graduate Studies in the Department of the History of Art, Yale University.*

One of the many major virtues of the Mathematics Building is its siting, and since local knowledge may legitimately be expected to help us toward perceiving that fact, it seems appropriate for someone like myself to say a short word about it. To put it as briefly as possible: Venturi's project adjusts itself to the topography, the street, and the existing buildings in a way that creates what amounts to a great gate, swinging wide to look northward up the slope of Hillhouse Avenue and opening upon the main body of the University to the south. Unthinking and rather blind persons—of whom not a few have seen fit to comment upon this project—have said that the façade of the building should have paralleled the street line, thus respecting the street, as I said long ago (so they claim) that the buildings along Park Avenue once did. Alas, the conditions are different here, as, for example, a view from the north can show. The Department of University Health, pre-existing directly across the street from the Mathematics Building, does in fact parallel Hillhouse Avenue, and it presents a blunt, blocky, end view to the pedestrian descending the slope of the avenue from the north (fig. 1). Ideally, the building—which may one day be enlarged on this north side—should have swung to accommodate that view, or, at least, should have responded to it in some way. It is on its own crest above the railway line and will never be part of a continuous street façade, as the buildings along Park Avenue were, since all the fine old houses to the north of it are and will remain set much farther back.

Venturi, faced with that condition, accepted it as a fact to be reckoned with and started by picking up the overall scale of the Department of University Health, including the size and general shape of its windows. These, however, he then pressed tight forward to the building plane of his project so that they could no longer be read as voids in a thick wall—as those across the street are—but as integral parts of one thin, continuous wall surface (shaded in a kind of cornice down to about the parapet line of the old Mathematics Building), which could then be bent and curved to swing open for the view up the avenue—to the scale of which its one great, cross-mullioned window responds. In this way, Venturi's project at once respects the Department of University Health and gently corrects it, and, most of all, uses its blind, rectangular northern end as a solid, fixed shape from which its own fenestrated plane can swing. The urbanistic curse is thus taken off that inert mass and it becomes an integral element in the new, gate, image. Moreover, the old house on the lot to the north is slated for permanent preservation, so that the project's curve respects it, too, and uses it as a scale-making object in the foreground. Beyond it, the vista rises up the slope—where, alongside the summit, Johnson's Kline Biology Tower reigns (fig. 2). The slight rise of the railroad embankment—across which the Mathematics Building just barely stretches with enormous, understated drama—is used as a base, like the remains of some old fortification wall, to set off and to frame the multiple pedestrian passages of everyday between one part of the University and the other, between what are generally the Humanities to the south and the Sciences to the north. No pre-existing and hermetic ideas about what buildings are supposed to look like on paper should blind our eyes to that civilized (knowing, correct, magnificent) and—one should really add—immensely economical achievement.

Figure Credits
1, 2. Courtesy Vincent Scully.

# Constructivism: The Pursuit of an Elusive Sensibility

Kenneth Frampton

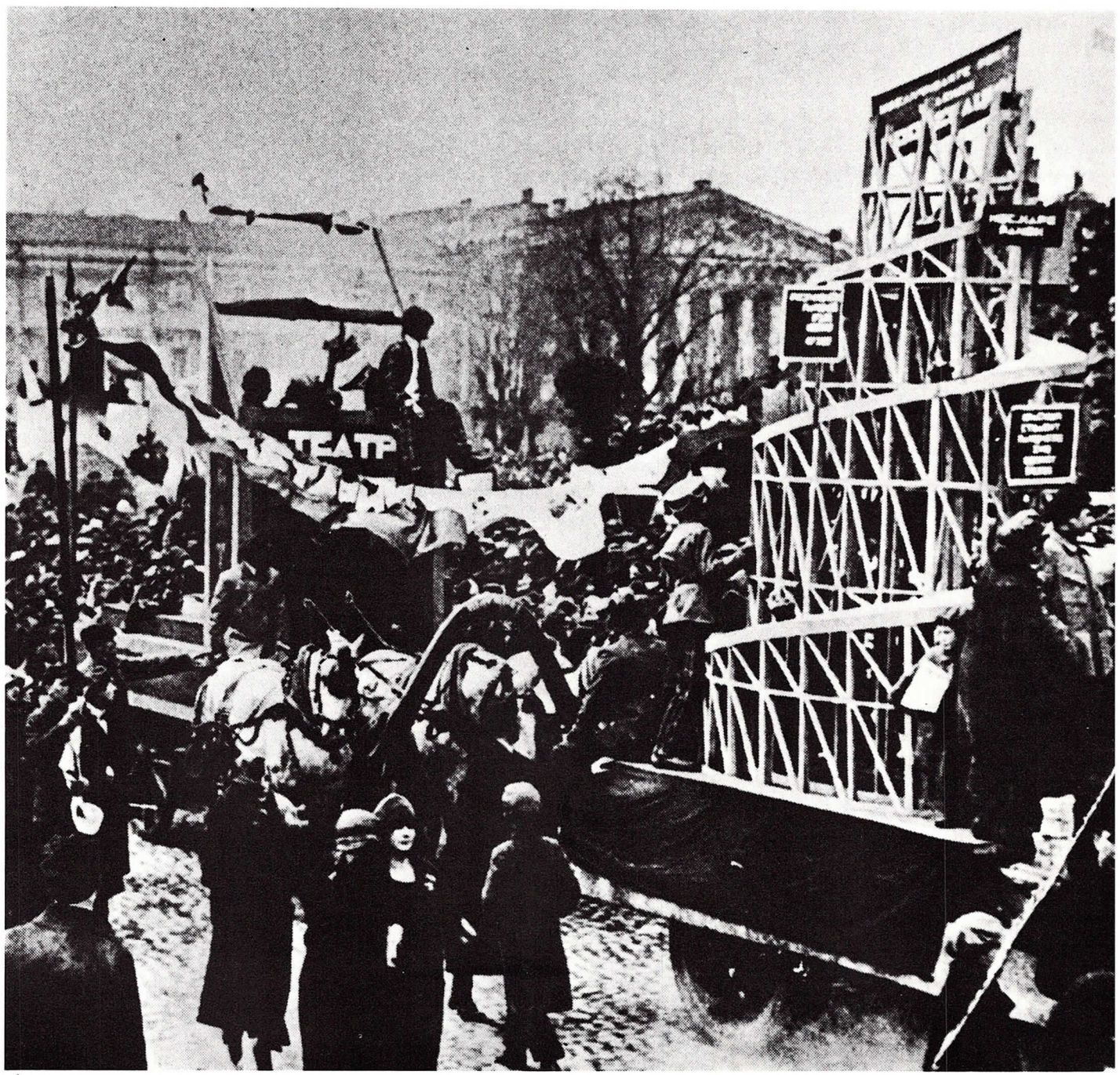
The work of the Russian Constructivists has become of increasing interest to students of the Modern Movement in the last ten years, not only for its direct relations to the "architecture of revolution," but for its evident influence on the formal sensibility of most Team 10 architecture. Work on the Constructivists has been published in Italy and in France, notably by Vittorio de Feo, Francesco Dal Co, and Anatole Kopp. With the exception of the preliminary and essential work of Kopp, however, none of these recent studies have yet appeared in English translation. The evident lack of serious assessments of Constructivism in the English-speaking world has been compounded by the most notable omission of any treatment of the Russian Constructivists in that, by now, standard text, Banham's *Theory and Design in the First Machine Age*, which has formed the historical understanding of so many generations of architectural students.

In a sense then, the essay by Frampton presented here may be seen as a first step toward filling this gap—the missing chapter so to speak in Banham's book. But Frampton's treatment of Constructivism necessarily goes beyond the boundaries of a simple exposition of the formation of Constructivist art out of the diverse and often confusing movements of pre-revolutionary Russia. Frampton attempts to narrow and deepen our understanding of that much abused word, "Constructivism," and to give some sense of its original connotations and the extent of its cultural allusiveness. Such is the critical first step in the comprehension of a movement whose influence on the vocabulary and ideology of international modernism almost immediately became diffused and absorbed. In concentrating on the materialism of Tatlin and Rodchenko, Frampton reminds us of the implied identity of politics and form in the immediate post-revolutionary period. In presenting a first characterization of the diverse and later bifurcating manners of Constructivism, he helps us to form a preliminary "alphabet" of those forms that have now become so seductive to romantic "technological" Expressionists and semiological Rationalists alike; an alphabet that, as Frampton insists, can never be entirely detached from that initial, and essentially simple, attempt to gain hegemony for art over the techniques of a first industrial revolution.

AV

Kenneth Frampton was born in England in 1930. He is a Fellow of The Institute for Architecture and Urban Studies, New York, Associate Professor at Columbia University, and is presently in Europe on a Guggenheim Fellowship working on a study of Purism. From 1959 to 1965 he was an associate of Douglas Stephen and Partners, London. From 1962 to 1965 he was technical editor of the magazine *Architectural Design* and from 1966 until 1972 he was a member of the faculty of Princeton University. In the spring of 1973, he was a Loeb Fellow at the Graduate School of Design, Harvard University. He has worked as an architect in England, Israel, and the United States and has recently collaborated in the design of a low-rise housing prototype for the New York State Urban Development Corporation. A developed version of this prototype is nearing completion in Brooklyn, New York.

*This essay, published here for the first time, was originally a lecture presented at The Guggenheim Museum, New York, on December 5th, 1972.*



*1. Simplified version of Vladimir Tatlin's tower built for a mass demonstration in Leningrad.*

*1.*

*Where does it begin and end this vague word? It is vague because it contains too much. It admits neither an aesthetic nor a category of production. Truly speaking, it is a word which belongs to the psychology of history, it is a generating word.*

*Le Corbusier*
Une Maison, Un Palais
*1928*



This somewhat supercilious assessment emphasizes the essential ambivalence of the term "Constructivism" as it was assimilated in the twenties into the language of the European avant-garde. Certain left-wing architects, in opposition to Le Corbusier, had borrowed this term from the Soviet Union as a way of characterizing their own particular form of Functionalism, even though no Soviet group had chosen to assert its activity exclusively under this heading. As Naum Gabo was to state, perhaps ingenuously, "There were no Constructivists until 1920. We all called ourselves Constructivists from the Russian word *postroyenia* meaning construction."[1] It is a fact that both within and without the Soviet Union artists and architects largely avoided advancing themselves solely as Constructivists. They chose instead to call themselves Realists, Suprematists, Productivists or, later, in Germany where the architectural left under Soviet influence was concentrated, they worked as functionalist designers, as part of the cultural movement known as *die Neue Sachlichkeit*.[2]

The importance of the term "Constructivism" seems to have lain not in itself, but rather in the extremely volatile and elusive sensibility it came to evoke. Beyond any doubt, this sensibility played a major role in transforming our way of viewing the world and, if nothing else, it modified our expectancy with regard to the nature of artistic production. The whole question of the boundaries separating art from life was constantly challenged in the twenties by the Constructivists and other related "isms," and it is this common synthetic drive that has encouraged us to classify rather diverse positions under the general rubric of "Constructivism." Even someone as experienced as Alfred Barr, in his classic text, *Cubism and Abstract Art*, of 1936, could crudely group Tatlin and Rodchenko with Pevsner and Gabo under the category "Constructivism." By the same token, and with less excuse, the artist and writer George Rickey has seen reason to include in his recent study of Constructivism artists as diverse as Kandinsky, Albers, Balla, Calder, and Gonzalez.[3]

In taking exception to the over extension of an art historical category, I wish only to emphasize the diversity of intentions that even today are still covered by a term which is

incapable, by definition, of distinguishing between them. To this end, my purpose is to isolate certain related movements which from time to time have been conflated under the term "Constructivism." The common origin of all these movements seems to lie in the obscurity of the Hylaea movement. This short-lived fountainhead of Russian Futurism led almost directly to the mature works of Kasimir Malevich, Naum Gabo, and Vladimir Tatlin; thereby making an understanding of these artists contingent upon an understanding of their roots in Futurism. The title "Hylaea" (or "Gileya") was derived from the ancient Greek name for an area on the shores of the Black Sea. Here in the summer of 1911, the painter David Burliuk and the writers Benedict Livshits, Vladimir Mayakovsky, Victor Khlebnikov, and Alexi Kruchenykh mutually dedicated themselves to the creation of a new nationalist and post-Symbolist art form under the name "Hylaea." Initially, the Hylaea group stood for a complex brand of Primitivism wherein painting and poetry were to be combined as in the traditional manner of the Russian *lubok* or wood-cut. Two years later the very same artists precipitously announced themselves as Futurists. The Hylaea movement seems to have placed great emphasis on the literary component of the *lubok* and Khlebnikov, Kruchenykh, and Mayakovsky carried over into their synthetic art that same sense of infantilism, with its reference to popular, erotic, and childish imagery, as had already become a primary component in those Primitivist works of the painters Mikhail Larionov and Natalia Goncharova.

The exceptional thing about the writers of the Hylaea group was the fact that they all had either practiced painting or had been initially trained as artists. Kruchenykh, in particular, had been a teacher of art before he met David Burliuk in 1907. By 1911, however, he had abandoned painting for literature and was already moving towards a kind of Primitivist book production; primitive not only in its language and in the alogicality of its textural sense, but also in its graphic presentation and means of production. As Vladimir Markov has remarked of Kruchenykh's poem, "A Game in Hell," of 1912, with illustrations by Goncharova, "this long poem about a card game going on between devils and sinners in hell was begun by Kruchenykh in the style of a folk lithograph (*lubok*) as he himself admitted. Then Khlebnikov added his own stanzas and lines with the result that the text became even more disorganized."[4]

The years 1912 to 1913 were crucial for the development of the literary aspects of Russian Futurism. They were of equal significance for the initial impact of this movement on the development of twentieth-century art. In the first instance, there was the publication in 1912 by Kruchenykh and Mayakovsky of their manifesto, *A Slap in the Face of Public Taste* which began with the words; "Only we are the face of our time. The horn of time trumpets through us the art of the word. . ." and continued a few lines later with the injunction to throw Pushkin, Dostoevsky, and Tolstoy overboard from the ship of modernity and later to assert the poet's right to enlarge their vocabulary with arbitrary words and "to feel an insurmountable hatred for all language existing before them."[5] In the second instance closely related to the first, there was Kruchenykh's development of his so-called *zaum* poetry which was announced in September 1913 with the publication of the Khlebnikov and Kruchenykh manifesto, *Declaration of the Word as Such*, in which it was asserted that Futurist poetry should appear, "As if it were written with difficulty, more uncomfortable than blackened boots in a drawing room." At this juncture, both men were to enlarge on the freedom already proclaimed in *A Slap in the Face of Public Taste*, to the effect that: "Thought and speech cannot catch up with the emotional experience of someone inspired; therefore the artist is free to express himself not only in common language (concepts) but also in a private one (the creator an individual), as well as in a language that does not have definite meaning (is not frozen) that is *trans-rational*. . . Words die, but the world stays young forever."

As Kruchenykh had already written in an earlier pamphlet "A lily is beautiful but the word 'lily' is soiled with finger and raped. For this reason I call a lily 'ehooe' and the original purity is reestablished."[7]

In 1913 the Hylaea group announced themselves as Futurists, although in so doing they took great care to distinguish themselves from the Italian Futurists to whose

*2.* Portrait of Benedict Livshits, *Vladimir Burliuk, 1911.*

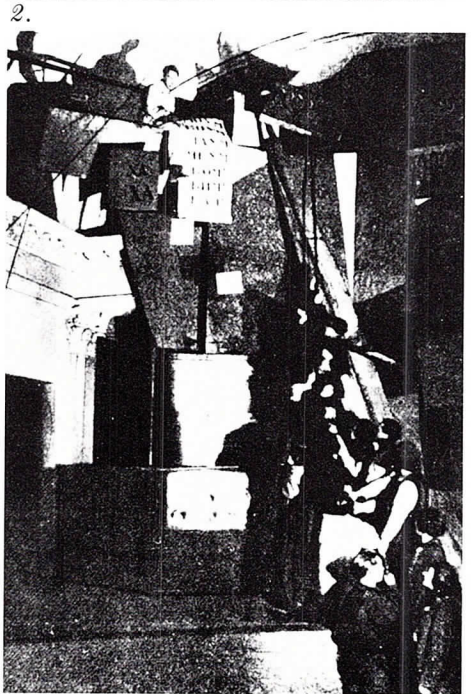
*3. Stage set for Victor Khlebnikov's play,* Zangezi. *Vladimir Tatlin, 1923. The figure, Zangezi, sits on the top of the construction.*

nfluence they had, of course, been subject since the publi-
ation of Marinetti's Futurist Manifesto in 1909. The sig-
ificant culmination of their own intense if short-lived
uturism was their entry into drama, which at once had the
ffect of uniting their work in a more striking way with the
ther arts. In the summer of 1913, Kruchenykh, Kasimir
Malevich and A.V. Matyushin announced their decision to
rganize a Futurist theater. By then Mayakovsky had al-
eady started to write about the cinema, proclaiming the
riumph of the kinetic image over the realism of the Moscow
Arts Theater, while David Burliuk and other members of
he Hylaea group had made their own foray into film with
heir proto-dadaist short, *Drama in Cabaret No. 13.*[8] Fi-
ally, in December 1913, in St. Petersburg's Luna Park,
here came the first performance of Kruchenykh's opera,
*Victory Over the Sun,* with sets and costumes by Malevich.
n this wild and cacophonous performance the audience was
ntroduced to the so-called strong men (or supermen) of the
uture, who were destined to survive the messianic destruc-
ion of the world. In a final burst of cosmic insanity the sun
s first stabbed and then finally captured. They celebrate
his victory-cum-apocalyptical disaster with the following
horus:

'In smoke and haze
And fatty dust
The blows strengthen
We get stronger like pigs
Our faces are dark
Our light comes from inside
We are warmed by the dead udder
Of the Red Dawn
BRN BRN"[9]

The exalted sense imparted by this text is nothing if it is not
uggestive of some strange kind of eschatological redemp-
ion. Men are to become even more earthy, they are to be
lluminated from within and warmed by a new dawn which
ignificantly enough is red. Nothing could be more removed
rom the conclusion of the Italian Futurist Manifesto of
909, which celebrated little save the violent banality of a
ar accident. Given Kruchenykh's mad feeling for apocalyp-
ical fulfillment, we are hardly surprised to learn that
*Victory Over the Sun* of 1913 was the mainspring for

*2.*



*3.*

Malevich's creation of Suprematism, despite the fact that Suprematist painting proper did not truly emerge until some two years later. We have Malevich's own testimony, which seems even to paraphrase Kruchenykh, to the effect that his creation of Suprematism was only the desert of the night that he felt within him, epitomized as a black square.

The early development of Russian Futurism fused traditional Russian millenialism with a proto-dadaist sensibility (antedating the Zurich dada by three years) and united both elements within a Primitivism of folk origin. This strange amalgam seems to have been the basic point of departure for both the Realist and Productivist movements. The most striking connection from the point of view of painting is to be found in the work of the painter Vladimir Burliuk (David Burliuk's brother) whose portrait of the writer, Benedict Livshits, of 1911 (fig. 2) seems to anticipate all too directly the first plastic works of the Realist artists, Gabo and Pevsner. Despite its superficial stylistic dependence on Picasso's *Les Demoiselles d'Avignon* of 1907, Livshits' portrait is clearly not a Cubistic work in a Parisian sense, just as it is equally clear that its crude faceting of convex and concave planes in space, particularly in the rendering of the neck and head, does nothing if not anticipate Naum Gabo's earliest head construction of 1915.

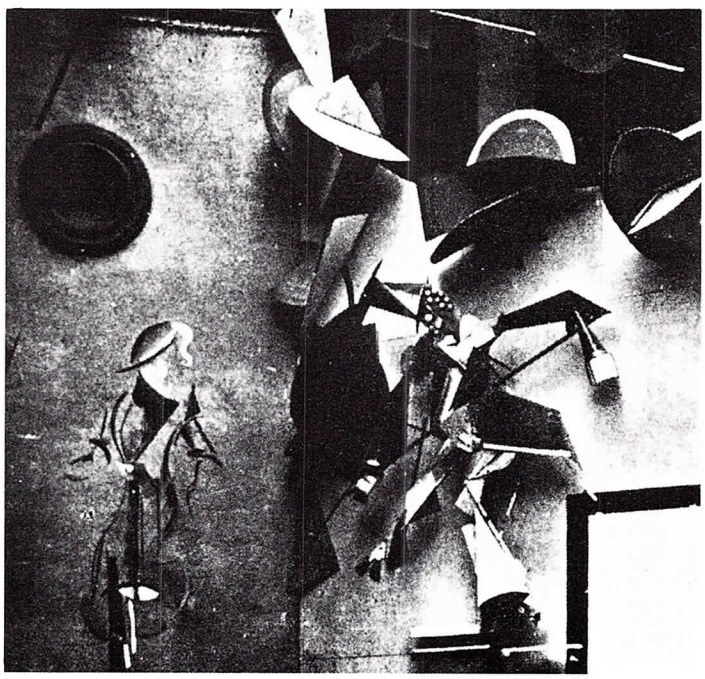
Along a different line of development, one may posit Vladimir Tatlin's sketches of 1910 as stemming from the Primitivist works of Larionov and Goncharova, and as anticipating that peculiar brand of latent Primitivism that is to pervade his career as an industrial designer after 1920. Nothing confirms these Primitivist-Futurist connections more strongly than Tatlin's stage setting for Khlebnikov's last work, written just before the writer's death in 1922 (fig. 3). It would seem that this play, *Zangezi*, was staged by students of the Petrograd Gallery of Artistic Culture under Tatlin's direction in 1923. Tatlin's text describing this work does much by way of explaining not only his own intentions but also those of Khlebnikov:

"The *Zangezi* production is to be realized on the principle that 'the word is a building unit, a material unit of organized space.' Khlebnikov himself characterized this super narration as an architectural work built of narrations, and each narration as an architectural work built of words. He re
gards the word as plastic material. The properties of this material make it possible to operate with it to build up 'the linguistic state.'

This attitude on the part of Khlebnikov gave me an opportunity to do my work in staging it. Parallel with his word constructions, I decided to make material construction This method makes it possible to fuse the work of two people into a unity, in spite of their having differen specialities, and to make Khlebnikov's work comprehensible to the masses.

Khlebnikov took sounds as elements. They contain the impulse to the birth of the word. The hard 'c' sound, for instance, gives birth to cup, cranium, container. All these words have to do with the concept of sheath. The sound 'p has to do with a diminishment of energy which stands in relationship to the area in which it is used; as in paddle position, palm, porringer."[10]

One can only wonder at this obscure text and at the naiv literalness of Tatlin's attempt to interpret in plastic form the *zaum*, or trans-rational poetry of Khlebnikov's *Song o Astral Language*, which forms a central feature within th play *Zangezi*. In this play, a god-like being bestows th renewed *trans-rational* cryptic word on the unenlightene mass assembled beneath his feet. Once again, as in the pla *Victory Over the Sun*, one cannot but fail to notice an almos pathological drive towards the representation of an over whelming apocalyptic event which first anticipates (in 191 and then indirectly celebrates (in 1923) the actuality of th Russian Revolution. One is reminded at this juncture of th eschatological tradition in Russian thought emphasized b Nikolai Berdyaev in his book, *The Russian Idea*. This cu tural conjunction is confirmed by the very origin of th *zaum* conception in poetry. Of this Vladimir Markov ha written; "The source of Kruchenykh's theories in this in stance is an article he never mentioned, "Religious Ecstas in Russian Mystical Sectarianism," by D.G. Konovalov; se rialized in 1907 and 1908." According to Markov, Konovalo "gave many examples of *zaum avant la lettre* produced b sect members in moments of ecstasy. One of them says: speak I don't know what and even in languages I don know'."[11]



*4. Detail of decoration in the Café Pittoresque. Vladimir Tatlin and Georgiy Yakulov, 1917.*

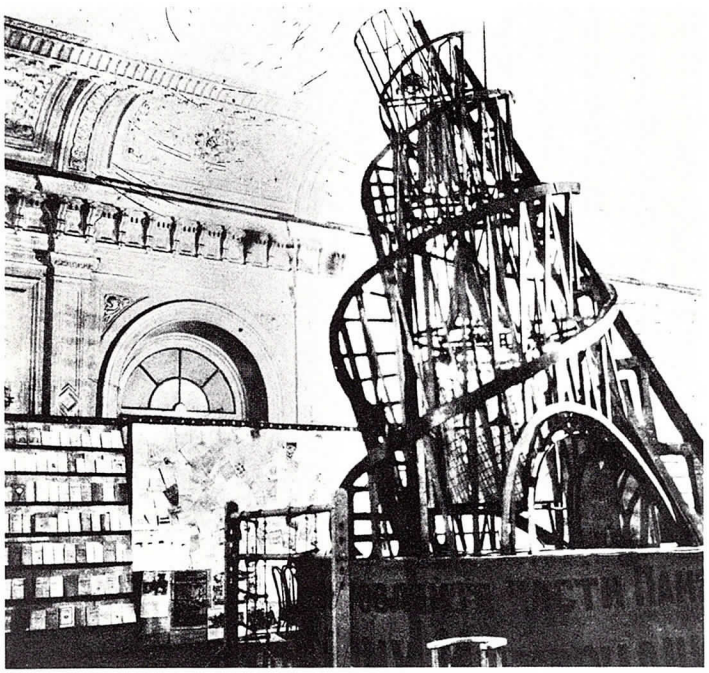
'his cryptic oracular tradition lying concealed as an impulse eneath much of the Constructivist sensibility is a contituent that has been largely overlooked. It may be characerized in the work of Kruchenykh, Khlebnikov, Malevich, nd Tatlin as a messianic impulse to reduce and purify both anguage and form through the largely unconscious crucible f everyday language and life.

omething of Tatlin's own intrinsic Primitivism not only as n artist but also as a personality has been captured by eorge Grosz in a memoire taken from a period in which 'atlin was about to start work on the set for *Zangezi*. Grosz rites of meeting Tatlin: "I met Tatlin, the great fool, once gain. He was living in a small ancient and decrepit apartnent. Some of the hens he kept slept on his bed. In a corner hey laid eggs. We drank tea, and Tatlin talked of Berlin, of he Wertheim stove and of his performance for the court. Behind him a mattress entirely consumed by rust, was eaning against the wall. . . ." Grosz continues: "When he layed his homemade balalaika it was growing dark outside he uncurtained window, the panes of which had been replaced in places by small plates of wood—he gave the impression not of an ultra-modern constructivist but a piece of enuine ancient Russia, as if from a book by Gogol—and here was suddenly a melancholy humor in the room."[12]

'his was Tatlin the *moujik*; a figure which it is difficult for s to reconcile with the undoubtedly more worldly Tatlin who was to be elected in 1918 as head of the IZO School—he Narkompros Department of Fine Arts in Moscow. We ave much less difficulty, however, in reconciling this ucolic image with Tatlin's relief and corner relief constructions of the years 1913 to 1915, many of which were displayed for the first time in the exhibition titled "0–10." Yet espite, or even because of their singular improvised quaty, these works are of considerable sophistication. Without uestion they are a conscious adaption of the *zaum* principle f Khlebnikov and Kruchenykh in as much as they are an n-the-spot utilization of the *detritus* of everyday life. Depite the transformation of this junk into three-dimensional ntellectual abstractions of the most severe objectivity, omething of a thrown-away 'folk' quality seems to remain. As Troels Andersen has observed, these works were far

*5. Monument to the Third International. Vladimir Tatlin, 1919–1920.*



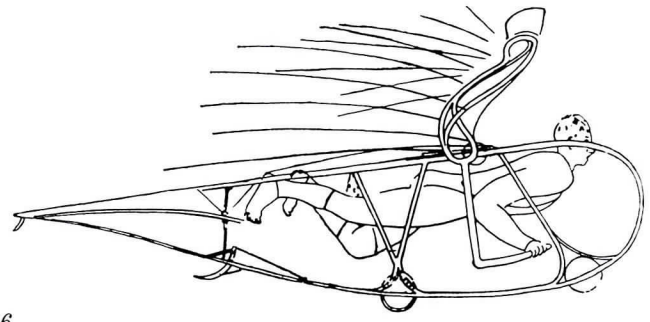


*5.*

removed from those aestheticized collages and reliefs pro duced by Picasso, Gris, and Braque at around the sam time. For all their latent *bricolage*, these synthetic Cubis pieces remained identifiable as salon objects. Unlike Tat lin's corner relief of 1915 or his large Café Pittoresque relie (fig. 4) designed in association with the "orphist," Georgi Yakulov, in 1917, Cubism projected itself within the tra ditional format of the freestanding sculpture or wall-hun painting or relief. Furthermore as Andersen has again re marked, the material itself became Tatlin's "ready-made as opposed to Duchamp's bicycle wheel and bottle rack o approximately the same date. Andersen writes of Tatli "The material came to be his 'ready made', the drawing pi holding a piece of paper in place, the string binding togethe two pieces of metal. One of his reliefs was made of a larg piece of parquet flooring which he found when he was ou looking for firewood. Any object whatsoever when its situa tion was changed could be recognized as material."[13]

This determination to preserve the inherent material qua ity of the transformed substance and, at the same time, t express directly the nature of its transformation or produc tion was to become the central precept of Productivism, a set out in *The Program of the Productivist Group* publishe in 1921, in response to the more idealistic *Realist Manifest* published by Naum Gabo and Antoine Pevsner in the prev ous year.

Materialism, in the broadest sense of that term, wa adopted as the basic precept of Productivism by the sig natories of the *Program*, namely by Tatlin and the Inkhu artists, Alexander Rodchenko and Varvara Stepanova. Th Productivists asserted (at least in theory) that the correc relation of form and content was contingent upon the inte relation of three basic precepts. These were (1) the *tech nique* or *tektonika* which, to quote from the *Program*, wa seen as "the effective exploitation of industrial matter," i accordance with socialist principles; (2) the *material* c *fakutra* which was seen as being "deliberately chosen an effectively used without, however, hindering the progres of construction or limiting the *tektonika*; and finally, (3) th art of construction itself which was largely seen as a form ordering process which should allow for transformation.



*6. Letatlin glider. Vladimir Tatlin, 1920–1932. Design drawing.*

6.

What this cryptic formula exactly meant to the Productivists, it is difficult to say, even though Constructivism itself was later defined more clearly by the Constructivist organ LEF as, "the organization of the given material on the principles of tectonics, structure, and construction; the form becoming defined in the process of creation by the utilitarian aim of the object." Despite this Functionalist definition, few were to be finally committed to the principles of structural economy in service of utility and even fewer to Tatlin's own "culture of materials" which, as Camilla Gray has suggested, came to play such an important part in determining his overall attitude to artistic production.[15]

Tatlin for his part was to draw a precise distinction between the Productivist and Constructivist positions when he wrote in retrospect in 1932 that they, the Constructivists "worked in materials but in an abstract fashion, as a formal problem mechanically applying technique to their art. Constructivism did not take into account the organic relation between the material and the tensile capacity, its working character. Essentially it is only as an outcome of the dynamic force resulting from these mutual relations that a vitally inevitable form is born."[16]

For Tatlin the "organic" transformation of material through fabrication, in such a manner as to leave its intrinsic nature inviolate and to exploit its unique characteristics, was of far greater consequence than the principle of utility *per se*, despite the fact that Tatlin's projected *Monument to the Third International* (fig. 5) in 1920, was intended, to quote the contemporary critic Nikolai Punin, "to comprise a new type of monumental construction, combining a purely creative form with a utilitarian form." Punin was to continue, "In agreement with this principle, the monument consists of three great rooms in glass, erected with the help of a complicated system of vertical pillars and spirals. These rooms are placed on top of each other and have different harmonically corresponding forms. They are able to move at different speeds by means of a special mechanism. The lower story, which is cubic in form, rotates around its axis at a rate of one revolution per year. This is intended for legislative assemblies. The next story, which is pyramidal, rotates around its axis at a rate of one revolution per month. Here the executive bodies are to meet. . . . Finally, the uppermost cylinder which rotates one revolution per day, is reserved for centers of an informative character; an information office, a newspaper, the issuing of proclamations, pamphlets, and manifestos . . . it will also have a telegraph office and an apparatus that can project onto large screens. These can be fitted around the axes of the hemisphere. Radio masts will rise up over the monument."[17] Apart from its questionable utility challenged by Trotsky, in a subsequent passage Punin was to reveal himself as being just as aware of the symbolic aspects of the proposal. Thus of its symbolic form he wrote that; "Just as the triangle, as an image of general equilibrium, is the best expression of the Renaissance, so the spiral is the most effective symbol of the modern spirit of the age . . . while the dynamic line of the bourgeois society, aiming at the possession of the land and the soil, was horizontal, the spiral, which, rising from the earth, detaches itself from all animal, earthly, and oppressing interests, forms the purest expression of humanity set free by the Revolution. The bourgeois social order developed an animal life on earth, tilled the soil, and there erected shops, arcades, and banks; the life of the new humanity rises ever higher and higher above ground."[18]

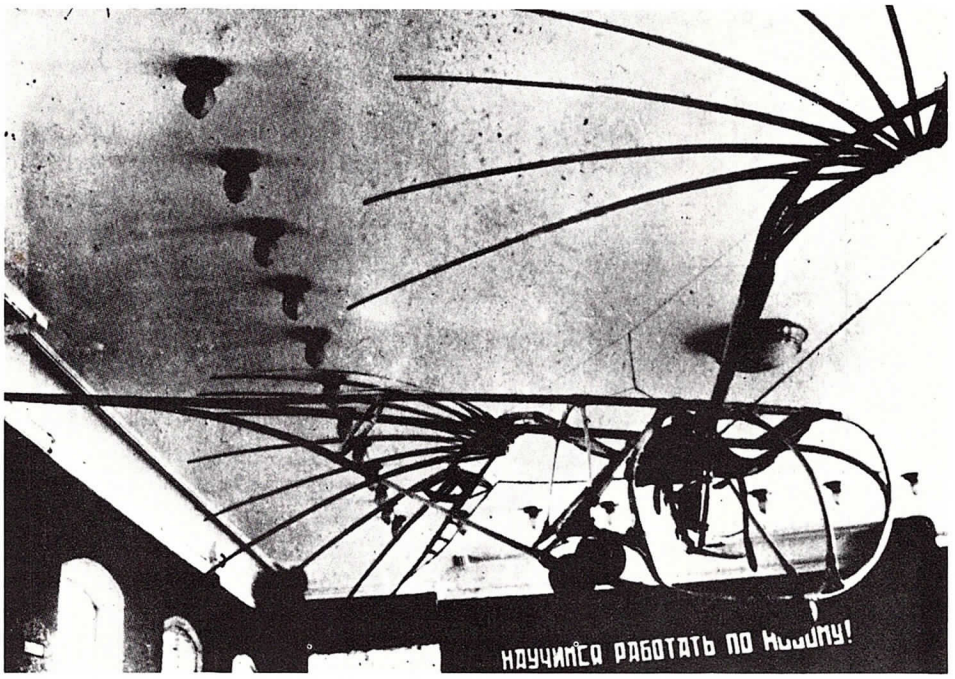
Finally, of its semiological aspects based on use, Punin wrote: "Most of the elements of architecture hitherto in use possessed no practical importance and remained unorganized. Today the principle of organization must rule and penetrate all art. The monument unites legislative initiative with the executive and with information; to each of these functions a position in space has been assigned corresponding to its nature." And finally, of the latent millenialism of its materials, he wrote: "Just as the product of the number of oscillations and the wavelength is the spatial measure of the sound, so the proportion between glass and iron is the measure of the material rhythm. By the union of these two fundamentally important materials, a compact and imposing simplicity and, at the same time, relationship are expressed since these materials, for both of which fire is the creator of life, form the elements of modern art. By their union, rhythms must be created of a mighty power, as though an ocean were being born."[19]

*7. Letatlin glider. Vladimir Tatlin, 1932. Structure without fabric.*

*8. Letatlin glider on exhibition in Moscow, 1932.*

*9. Armchair. Prototype developed under Alexander Rodchenko at the Vkhutemas, 1926. The structure is aluminum tube and canvas.*

*10. Model of a sprung chair. Prototype developed by Rogozin, a student, under Vladimir Tatlin at the Vkhutein, 1927. The structure is of bound bent beech wood and the seat is of rubber.*

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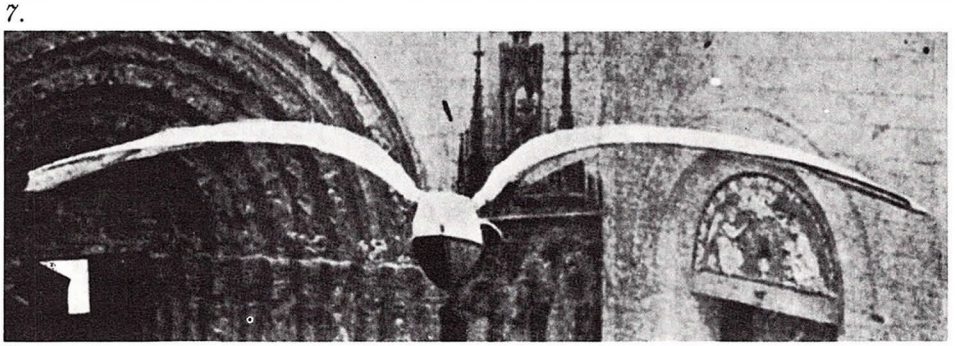

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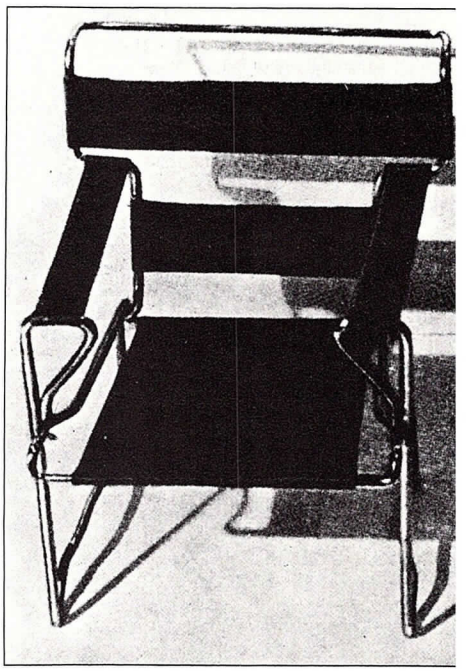

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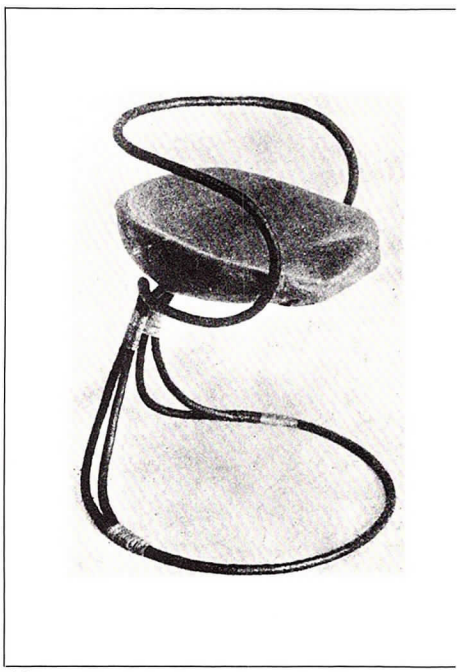


*10.*

Punin's excessive rhetoric, notwithstanding this double preoccupation with utility on the one hand and with the culture (not to say the cult) of materials on the other, pervades the entirety of Tatlin's work after his *Monument to the Third International*. This peculiar dichotomy was to be complemented in Tatlin's later work by an overriding concern with environmental control, with mechanical movement, and with the actual day to day mobility of a post-revolutionary, nomadic population. To such interrelated ends we find him designing both a 'dymaxion' stove and workers' clothing at Inkhuk in 1924, where the conscious primitivism of the material testifies to a brutal, almost *zaum* expression of utility. To similar ends we find him designing three years later, with students from the Vkhutemas, a number of molded ceramic teapots to be held in the hand and, with Rogozin, a Vkhutein student, a bent wood cantilever chair with a rubber molded seat (fig. 10). All these designs expressively exploited the intrinsic nature of the *substances* from which they were made, together with the nature of the processes by which they had been fabricated into objects. They were in no way determined by a preference for orthogonal order as was the case in the work of Rodchenko of around the same date—such as the aluminum tube and canvas chair that was designed at the Vkhutemas under his direction in 1926 (fig. 9).

After the early twenties, Tatlin's essential contribution becomes increasingly singular even if its precise nature is to remain highly ambiguous. Nothing is able to epitomize this ambiguity more exactly than the last significant work of his career; his *Letatlin* (figs. 6, 7, 8) glider upon which he worked more or less continuously from 1920 to 1932. Even the combination of the name Tatlin with the Russian verb to fly (*let*) recalls the neologistic games of Khlebnikov. This work, plus his 1944 pamphlet on the construction of a moon for the stage,[20] summed up the essence of his mature sensibility which even his contemporaries characterized as a kind of *technological Khlebnikovism*. He stipulated that the "moon" was not to be painted "since its greatest value lies precisely in the actual metal as material." Tatlin's final attempt with his *Letatlin* to evolve a new culture of form whose content was to be as much a metaphor for a possibility, that is for an aspiration, as it was to be an object of rationally determined ends, is best exemplified in an interview he gave in 1932 to Kornely Zelinsky. On this occasion he said: "I don't want people to take this thing as something utilitarian. I have made it as an artist. Look at the bent wings. We believe them to be aesthetically perfect. Or don't you think *Letatlin* gives an impression of aesthetic perfection? Like a hovering sea gull? Don't you think?" Zelinsky then questioned Tatlin about the working principle of the *Letatlin* and the response was: "Like a glider. But my wing can produce three sorts of movement like a bird, apart from the tail. . . ." Finally, when questioned as to its practical importance, Tatlin replied: "The same as a glider. Has the proletariat no use for a glider? It is still too early to talk about future air bicycling when the actual apparatus has still not been tested. . . . But also I really want to emphasize the aesthetic side of the thing. Now art is going out into Technology."[21]

This all pervasive notion of art going out into technology had already been formulated some twenty years before by one Alexander Malinovsky, otherwise self-styled Bogdanov (the God-given) who between 1912 and 1932 published his theoretical text on the subject under the title, *Tectology: The Universal Organizational Science*. As James Billington has remarked; "This new super science of *tectology* was designed to provide a harmonious unity between the spiritual culture and the physical experience of the 'working collective' in whose interest all science and activity were to be reorganized and all past culture reworked. . . ." Billington continues, "In the manner of Saint Simon rather than Marx, Bogdanov argued that the destructive conflicts of the past would never be resolved without a positive new religion: the undying role once played in society by a central temple of worship and religious faith must now be played by the living temple of the proletariat and a pragmatic, socially oriented philosophy of *empiriomonism*."[22]

Armed with such a thesis the Bolshevik Bogdanov was to found the Proletcult movement or the Organization for Proletarian Culture as early as 1906, although, as Camilla Gray has pointed out, it was not to become an effective movement until the Revolution of 1917. We have little reason to

doubt that Tatlin was as much influenced by this movement as he was by the sensibility of the Futurists, Khlebnikov and Kruchenykh. At all events the *Program for the Productivist Group* reads like a Proletcult document, particularly in its itemization of future tasks. In ideological terms, it advocated the future application of all intellectual production to the building of a communist culture; in practical terms, it urged agitation and the establishment of contact with those productive centers which will realize "the communistic forms of life in practice." It concluded with a set of slogans which could have been derived from the arguments of Bogdanov: "down with art which only camouflages humanity's impotence. The collective art of the present is constructive life . . ." etc.[23]

Despite this it was the Inkhuk "Constructivists," namely Rodchenko, Stepanova, Alexi Gan, and Liubov Popova, rather than Tatlin himself, who were to contribute directly to the agitatory culture of the Proletcult movement, for there remained something cryptic in Tatlin (the only pure Productivist)—a certain proto-dadaist sense of irony that postulated an all but useless utility. This attitude was fundamentally alien to the propagation of a collective art.

It was to be left to the artists of the "5 × 5 = 25" exhibition of 1921, that is, to the signatories of a declaration,[24] to forego all further easel painting, and to their colleagues Gladkov and Klutsis, to the architect Konstantin Melnikov and, finally, to the film maker Dziga Vertov, to generate and sustain the *agit prop* culture of the Proletcult movement; in the cause of which the purest pieces of Soviet "production" art were to be achieved. It was these men who created in accordance with the needs and realities of revolutionary production and who produced the Proletcult pamphlets, poster, kiosks, shelters, propaganda boats, and trains of that heroic but relatively shortlived period known as War Communism. Theirs was a collective art of production in the purest sense; transformation of the irrational vitality of Kruchenykh into a new elemental language of form; one in which both the productional context and the societal purpose were self-evident in the forms themselves. We have only to look at the separate works of these men to recognize the common 'elemental' attitude that they brought to their various productions; from Rodchenko's use of primitive wood block lettering and printer's rules, inked in black, red, and green, to Stepanova's elemental 'packing case' sets for Vesevold Meyerhold's bio-mechanical stage; in particular, her famous permutable pieces for *The Death of Tarelkin* of 1922. These were expressly designed as obstacle-devices upon which Meyerhold's actor-acrobats could fully display their dramatic and gymnastic talent (figs. 11, 12).

Where Rodchenko exploited the given elements of the printing process to create the Constructivist mode of symmetrical typography (c.f. the asymmetry of Lissitzky's Suprematist-Elementarist approach), Stepanova, Popova, Exter, Gladkov, and the architect Melnikov used standard timber scantlings as found, namely, the raw material as wrought from the mill, thereafter subjecting it to no further work other than the crosscutting and fixing necessary to its final assembly. In both instances, minimum use was made of either high craft or advanced industrial technique. It was all run-of-the-mill production; the material components of a ready-made language to be readily converted into an art of the people. Everything depended on the imaginative juxtaposition of standard elements. This much was most simply demonstrated by Rodchenko, in his abstract structural compositions, all employing pieces of wood of exactly the same length. Finally, there lay behind all this *agit prop* construction the great Russian vernacular for building out of undressed timber, the famous log cabin technology that rose to such vigorous and dramatic heights in the Carpathians; a mode of building that had been incorporated into Narodnik culture in the Abramtsevo museum built by the artists of the Mamontov colony in the 1880s.

In architecture the post-revolutionary "Constructivist" impulse found itself initially restricted to exhibition design where, integrated with the typographic discourse of polemical display, it was able to produce works of exceptional quality; works which from the point of view of achieving the maximum effect with the minimum means have rarely been equalled. The stage designers, Exter and Gladkov, played a salient role in this development with their open framed, wood fretted Isvestia Tower, built for the Moscow Agricul-

*11. Stage set for Vesevold Meyerhold's Theater,* The Death of Tarelkin. *Varvara Stepanova,* 1922.

*12. Meyerhold's bio-mechanical ideal—the actor/acrobat appropriately dressed in overalls.*

*13. Isvestia Tower. Alexandra Exter and V. Gladkov, 1923.*

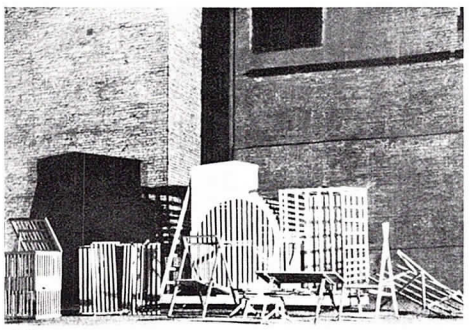
*14. Annex to the USSR Pavilion, Exposition of Decorative Arts, Paris. Konstantin Melnikov, 1925.*

*15. Chess suite/Chess set, Exposition of Decorative Arts, Paris. Alexander Rodchenko, 1925.*

*16. Makhorka Pavilion, Moscow Agricultural Exhibition. Konstantin Melnikov, 1923.*

*17. USSR Pavilion, Exposition of Decorative Arts, Paris. Konstantin Melnikov, 1925. Elevation.*

*18. Film title for Dziga Vertov's documentary,* Kino-Pravda. *Alexander Rodchenko, 1922–1924.*



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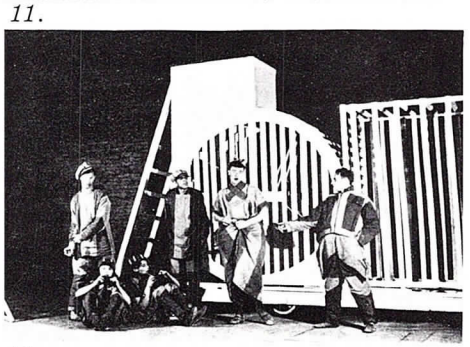

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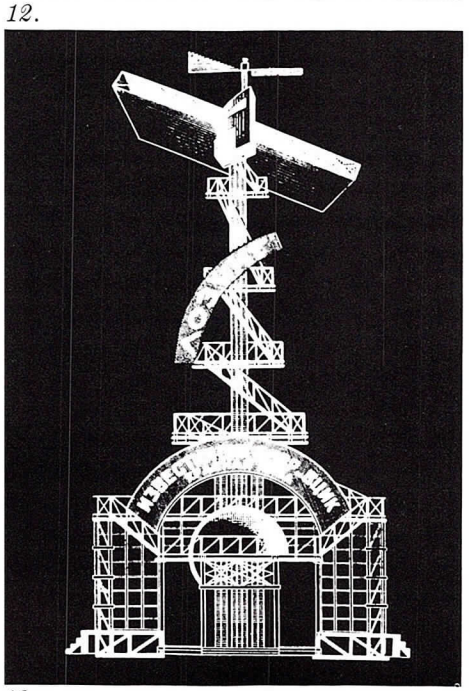

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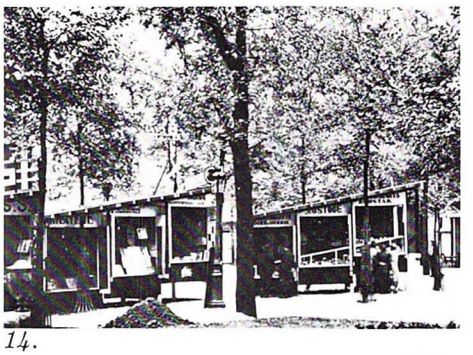

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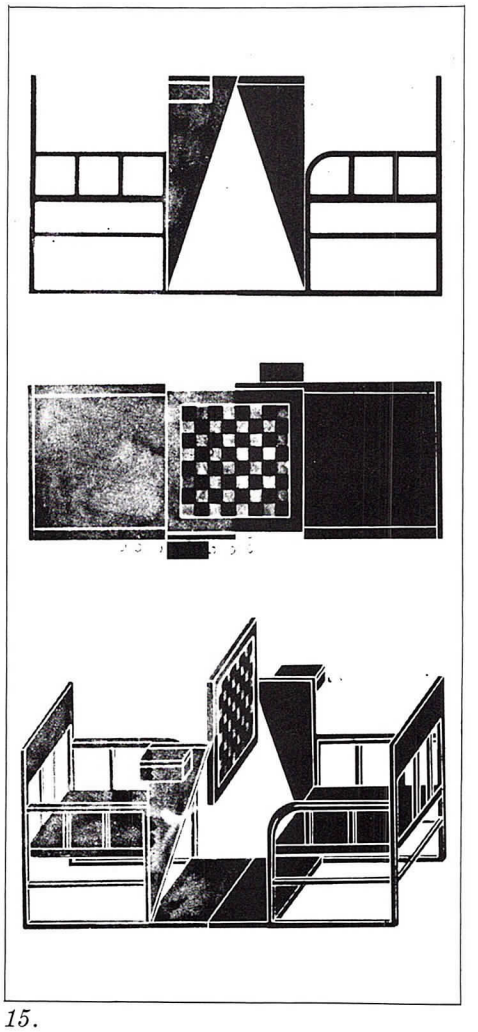

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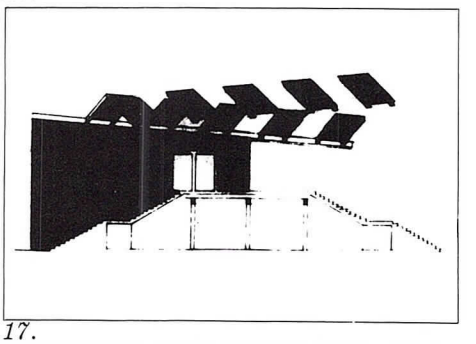

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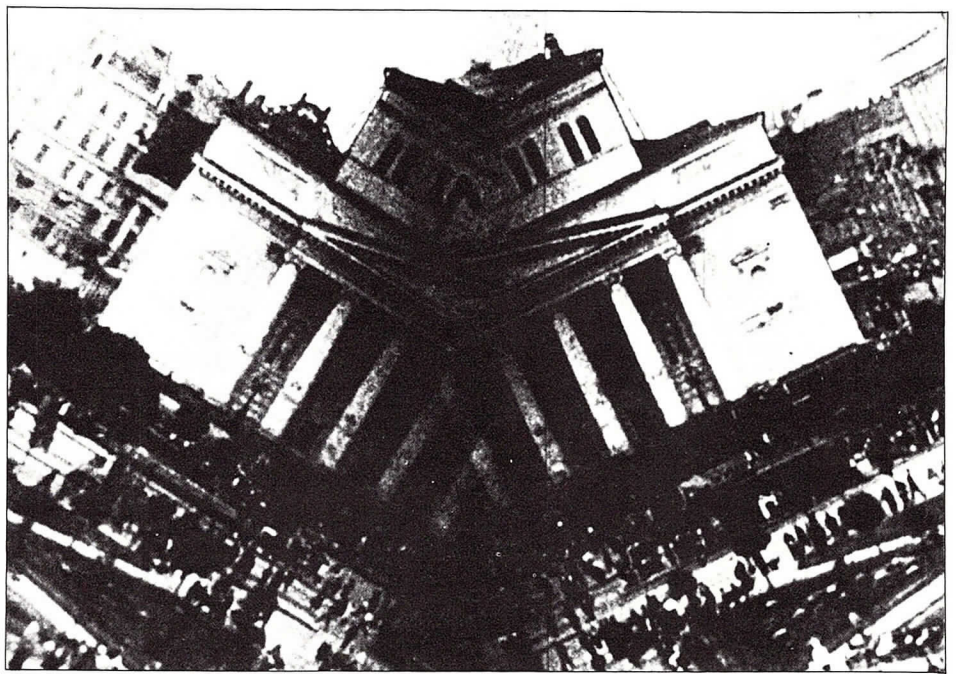
*18.*

*19. Image from* The Man with the Movie Camera. *Dziga Vertov, 1929. The split screen image implodes the Bolshoi theater on itself.*

*20, 21. Images from* The Man with the Movie Camera. *Dziga Vertov, 1929. Frames showing the film and its own 'montaged production'.*

*22, 23. Cover designs for the magazine,* Lef. *Alexander Rodchenko, 1923.*

*24. Cover design for the magazine,* Kino-fot, *No. 4, 1922. Alexander Rodchenko, 1922.*



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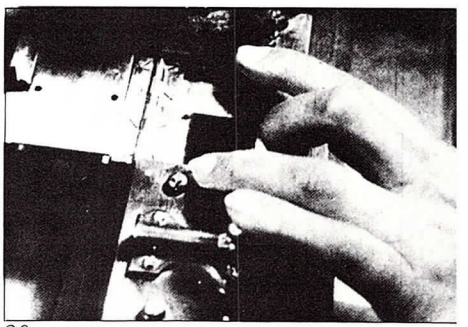

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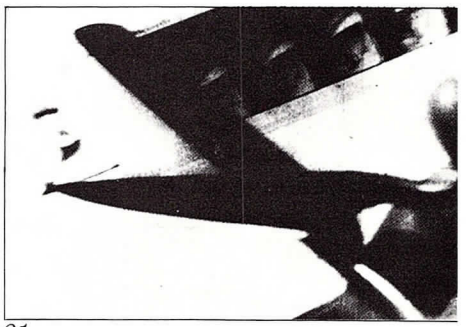

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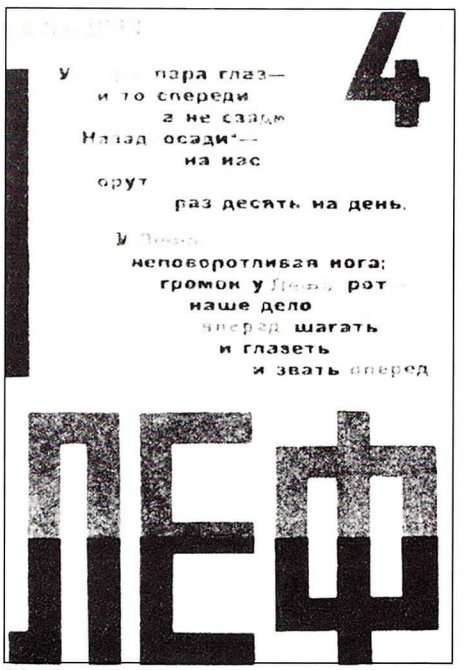



*23.*


*22.*

tural Exhibition of 1923; this being the first and almost the last occasion on which the "Productivist-Constructivist" aesthetic was officially acknowledged (fig. 13). The Isvestia Tower was more than well-matched by the angular profiles of Melnikov's Makhorka Pavilion erected for the same occasion (fig. 16). The subtle counterboarded and battened components of this structure at once established Melnikov's unique style. Indeed nothing that Melnikov was to achieve in his later career—his workers' clubs of the late twenties—was to equal his early structures in wood—his demountable Sukharyovka market erected in Moscow in 1924 and his pavilion and Gostorg annex built for the USSR in Paris in 1925 for the Exposition des Arts Decoratifs (figs. 14, 17).

The part that Alexander Rodchenko played in this pavilion and his subsequent development as an artist serves to establish him as the most typical Productivist-Constructivist of his generation. In his elemental furniture and workers' club interiors for the Melnikov Pavilion of 1925, he revealed himself as a formalist of wood technique. This was never more so than in his red and black chess playing suite which, given its intrinsic inflexibility, its astructural form, and its general inconvenience, was more an elaborate metaphor for a revolutionary dialectic than a piece of utilitarian design (fig. 15). Nothing could be of greater contrast to this than the aluminium tube and canvas chair (see fig. 9) designed under his direction in the Vkhutemas in the following year, where all reference to formalist metaphor was to be abandoned in an attempt to design in accordance with Tatlin's 'cult of materials'.

Rodchenko by the mid-twenties was already moving away from the abstract formalism of his work as a painter. This much is evident from his graphic designs of 1923—his covers for *Kino-Fot* (fig. 24) and for the Constructivist magazine *Lef* (figs. 22, 23), and from his photo-montage illustrations of the same year, to Mayakovsky's poem *Pro Eto* (About This). The same rudimentary shift may also be seen in his titles for Dziga Vertov's documentary film *Kino Pravda*; dating from 1922 (fig. 18). As a contemporary critic wrote in the first issue of *Lef*, in March 1923, "Rodchenko approached these titles in a production spirit, treating them as part of the film itself, guided by its montage and scenario. In this *Kino Pravda* series he used three ideas: a heavy type thrown across the entire width of the screen; an encircling form and a moving title which progressively wrote itself on the film. With these methods the title ceased to be a dead part of the film and became an organic part of it." The tendency to fuse typographic and cinematographic production at this time can hardly be ignored, and indeed one can see this as part of a more comprehensive impulse to shift all artistic production into either photographic or cinematic media. When it came to the penetration and dissemination of a revolutionary reality and discourse, the camera advanced itself as the natural channel for all forms of informational production. From photo-montage to montage was but a step and vice versa. So that Rodchenko's photo-montage work for *Pro Eto* simulated in a static media the dynamic maelstrom of colliding imagery which was to become the very essence of Vertov's masterpiece of 1929, *The Man with the Movie Camera* (fig. 19).

A more than parallel development took place in the theater where, despite or even because of the success of the Proletcult stage and of Nikolai Evreinov's mass pageant program, known as the 'theatricalization of everyday life', the theater-as-circus or the theater-as-reenactment began to gravitate towards its representation in film. While the anti-illusionism of Meyerhold's bio-mechanical stage (see figs. 11, 12) could readily admit a certain injection of abstracted reality as, for example, in Tretiakov's play *The Earth Upreears* where, to quote from a contemporary description, "Over the bridge, which leads from the stage to the auditorium, motors and cycles rush continually . . . The fury of war rages unfettered on the stage through the auditorium, through the foyer right out to the street . . ."[25] the theater as a mode of discourse collapsed once it was projected with revolutionary fervor and naive temerity within a workaday proletarian reality. No one has written more frankly of the failure of this projection than Sergei Eisenstein, when of his own attempt to stage Tretiakov's play *Gas Masks* in the actuality of the Moscow gas works in 1924, he wrote: "The turbines, the factory background, negated the last remnants of make-up and theatrical costumes, and all elements appeared as independently fused.

Theater accessories in the midst of the real factory plastics appear ridiculous. The element of 'play' was incompatible with the acrid smell of gas. The pitiful platform kept getting lost among the real platforms of labor activity. In short, the production was a failure. . . . The cart fell to pieces and the driver dropped into the cinema."[26]

What then was this particular sensibility in its final essence; this 'Productivist' sensibility that gravitated progressively in its expressiveness towards typography, photography, and film and its creation of built form towards the exploitation of the intrinsic nature of material. In each case the old bourgeois media were either to be parodied or abandoned. New, scientific, highly generalized productive media and methods were to be embraced in their stead. Hence the classless and theoretically infinite discourse of the photograph triumphed spontaneously in the early years of the Soviet Union over the old aristocratic-cum-bourgeois media of easel painting, while the total fusion of actor and audience, Meyerhold's anti-illusionist ideal, presupposed an interpenetration of action and intensity in reaction that could only be finally achieved through the use of film.

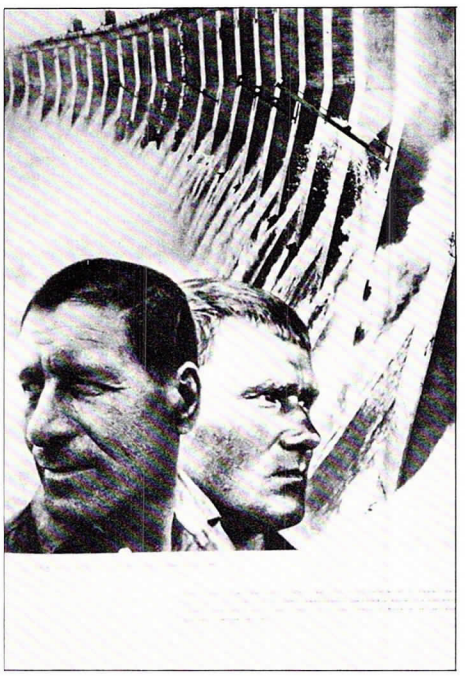
To this end Dziga Vertov and his fellow film makers, the so-called *Kinoks*, saw, in their manifesto *We* of 1919, that film was produced out of raw material; that it was in essence both physical and intellectual. It had to come into being through a sequence of conscious reflexes, just as a building or a newspaper is to be forged to comparable ends out of equally fundamental resources. Vertov wrote in the manifesto: "Almost all art film workers were enemies of the *Kinoks*. This was normal; it meant they would have to reconsider their *metier*. *Kino-Pravda* was made with materials as a house is made of bricks."

For Vertov, in film, *montage* was to be as much the imperative of constructive creation as it was for Rodchenko in his graphics and for Melnikov in his architecture. Thus he stated in his lecture *Kino-Eye*, "To make montage is to organize pieces of film, which we call frames, into a cinething. It means to write something cinematic with recorded shots. It does not mean to select pieces, to make "scenes" (deviation of a theatrical character), nor does it mean to arrange pieces according to subtitles (deviations of literary character). Every *Kino-Eye* production is mounted on the very day that the subject (theme) is chosen, and this work ends only with the launching of the film into circulation in its definitive form. In other words, montage takes place from the beginning to the end of production (figs. 20, 21).[27]

For architecture this same principle was viable as long as the techniques involved (as in typography or photography) could be mastered and, more importantly, could be controlled by a limited number of people. As soon as this socio-technical control started to falter, that is, as soon as it ceased to be simple and ingenious, then Soviet architecture, for all its "projected" brilliance in the twenties, began to lose its essential orientation. For, by then, with its progressive fantasies about Chicago, and its simulation of the latest western technique, it was sponsoring a Utopian myth of *modernity per se*. It was no longer grounded in a comprehensive and technically comprehensible non-bourgeois culture. Instead, it launched itself into a largely unrealizable rhetoric of advanced technique; all glass façades, transparent bubbles, vast cantilevers and extravagant systems of spun wire suspension; all, at that time, well beyond the general technical and economic capacity of the Soviet Union. While Lissitzky was to write of the translucent Pravda project by the Vesnin brothers that: "All the accessories—which on a typical city street are usually tacked onto the building—such as signs, advertising, clocks, loudspeakers, and even the elevators inside, have been incorporated as integral elements of the design and combined into a unified whole. This is the aesthetic of Constructivism,"[28] he was not in himself interested in Constructivism in the Productivist sense.

Indeed the case could be made that the necessary shift in scale, imposed by the more consequential building tasks then confronting the Soviet Union, such as Dneiperstroi Dam, created circumstances in which it was no longer possible to sustain either the Constructivist-Productivist aesthetic of *montage* (Rodchenko, Melnikov, Dziga Vertov) or Tatlin's own *zaumny* 'cult of materials'. Advanced reinforced concrete construction on a vast scale was sufficient material cause for the frustration of both these impulses.

*25. Photographs for* USSR in Construction. *Alexander Rodchenko, c.1930. The Dneiperstroi Dam is shown in the background as built to the designs of the Vesnin Brothers.*



*25.*

For how can one reveal the explicit structural process of *montage,* the final essence of the pure Constructivist aesthetic, if half the material is irredeemably hidden and if the other half is cast as an undifferentiated plastic mass of rapidly coagulating material? By the same token, how can one express the intrinsic nature of a material, if the material itself is no longer natural, and hence in a special sense no longer knowable? Tatlin's bentwood constructions, his Letatlin for example, constituted a language in as much as it expressively revealed the familiar nature of wood. However, nothing it seems can be known, in an immediate sense, about the intrinsic nature of a synthetic material like reinforced concrete?

While neither Rodchenko, Melnikov, nor Dziga Vertov were to be solely preoccupied with the intrinsic nature of their materials as such, they were all to be deeply concerned with the revelation of the productive process. Thus Rodchenko's graphic design reveals the relatively primitive nature of its 'pressed' mechanical reproduction on paper which manifestly is made out of shredded wood pulp. Here the production process was self-evident and became an intrinsic part of the aesthetic. Similarly Melnikov's early timber constructions, despite the fact that they were occasionally painted, were to announce, through their articulated assembly, their initial saw mill origin as standard scantlings of timber. By the same token, it could be argued that, by that date, the standard process of photography was already 'known' and that it now needed only to be handled through anti-illusionist cinematography to reveal both its own process and its relation to the process of life as a whole. Thus as Annette Michelson has written, "Vertov's disdain of the mimetic, his concern with technique and process, with their extensions and revelation, stamp him as a member of the Constructivist generation. The shared ideological concern with the role of his art as the agent of human perfectibility, of a social transformation which issues in a transformation of consciousness in the most complete and intimate sense, the certainty of accession to that "world of naked truth" are grounded in the acceptance, the affirmation of, the radically synthetic quality of film-making in the stylistics of montage."[29]

42 The revelation of the essential socio-cultural nature of productive synthesis through an explicit act of *montage*. This, perhaps, in the last analysis, was the essence of the 'Productivist-Constructivist' sensibility, a sensibility that depended upon a productive process of relative simplicity. Once this process became too complex then the sensibility could not be recovered. Thus the Dneiperstroi Dam could only be returned to Constructivism through the agency of Rodchenko's acute angled photographs published in the thirties, in the official government publication entitled *USSR in Construction* (fig. 25). For the rest, as Berthold Lubetkin has written, "Disarming itself by rejecting the whole of past architectural tradition, the (architectural) profession gradually lost all confidence in itself and in its social purpose. Those architects who were most honest with themselves drew their own conclusion from the worship of the engineer and the denial of all architectural tradition, and actually abandoned their profession to become building technicians, administrators and planners.

The disparity between the vision of a supercharged technique and the reality of a primitive and backward building industry, in which, more and more, idealized technology had to give way to ordinary ingenuity on a low level, led others to a hollow and insincere aestheticism, indistinguishable from that of the formalists they had set out to replace, in as much as they were forced to reproduce the adulterated forms of an advanced technique in the absence of its real media."[30]

1. Herbert Read and Martin Leslie, *Naum Gabo* (London: Lund Humphries, 1957). See 1956 interview between Naum Gabo, Ibram Lassaw, and Ilya Bolotowsky, pp. 156–160. The tactic of this present essay has been to pursue the Constructivist sensibility outside its manifestation in professional architectural circles, which so often led, as Lubetkin remarked, to a reproduction of advanced technique in adulterated form. Instead, I have attempted to concentrate on the primary impulse to found artistic expression in the *real* processes of production. Rising out of the energy of a radical intelligentsia, this impulse seems to have led in two opposed, but complementary, directions; the one towards a natural Primitivism—imbued with a certain fantasy—of which Tatlin's *Letatlin* would be the prime example; the other toward a highly artificial formal language, such as we see in Rodchenko's exercises of permutable, abstract, wooden, constructions made out of pieces of the same length. The former was very much emphasized in Ronald Hunt's exhibition, "Transform the World, Poetry Must Be Made By All," held at the Moderna Museet, Stockholm, in 1969.
2. The term *Sachlichkeit* had been current in German cultural circles long before the art critic, G.F. Hartlaub, hit upon the phrase *die neue Sachlichkeit*, around 1924, to identify a postwar anti-Expressionist school of German painting. In 1929, Hartlaub wrote to Alfred H. Barr, Jr., "the expression ought really to apply as a label to the new realism bearing a socialistic flavor. It was related to the general contemporary feeling in Germany of resignation and cynicism after a period of exuberant hopes (which had found an outlet in Expressionism). Cynicism and resignation are the negative side of the *neue Sachlichkeit;* the positive side expresses itself in the enthusiasm for the immediate reality as a result of a desire to take things entirely objectively on a material basis without immediately investing them with ideal implications. This healthy disillusionment finds its clearest expression in Germany in architecture."
3. George Rickey, *Constructivism, Origins and Evolution* (London: Studio Vista, 1967).
4. Vladimir Markov, *Russian Futurism: A History* (London: MacGibbon & Kee, Ltd., 1969), p. 41.
5. Ibid., pp. 45, 46. " 'A Slap' was probably written by David Burliuk, Kruchenykh, and Mayakovsky together in November or December, 1912, in the Romanovka Hotel in Moscow, where they spent their evenings."
6. Ibid., p. 129.
7. Ibid., p. 131. The full article of the *Declaration of the Word as Such* reads: "Words die, the world stays young forever. An artist has seen the world in a new way, and, like Adam, he gives his own names to everything. A lily is

beautiful, but the word 'lily' is soiled with fingers and raped. For this reason I call a lily 'euy' [pronounced in Russian approximately 'ehooee'], and the original purity is reestablished."
8. Camilla Gray, *The Great Experiment: Russian Art 1863–1922* (New York: Harry N. Abrams, 1962), plate 75. Gray's caption reads: "This film which appeared in January 1914, was in the form of a 'parody on the prevalent genre of the film guignol', according to Jay Leyda. It presented a day in the life of the Futurists. Mayakovsky, the Burliuk brothers, Larionov and Goncharova all took part in it."
9. Markov, *Russian Futurism*, p. 144.
10. Troels Andersen, ed., *Vladimir Tatlin* (Stockholm: Moderna Museet, 1968). This definitive catalogue on the work of Tatlin contains an English translation of Tatlin's original text, p. 69.
11. Markov, *Russian Futurism*, p. 202.
12. Andersen, *Vladimir Tatlin*, p. 86.
13. Andersen, *Vladimir Tatlin*, p. 6. In this connection of the comparison between Tatlin's tower and Boccioni's 1911 drawing for *A Bottle Evolving in Space*, Andersen writes: "What was for Boccioni a radicalization of a *nature morte* came for Tatlin to be real architecture. Therein lay the change." See p. 8.
14. Read and Leslie, *Naum Gabo*, p. 156. This study of Gabo prints the full text of the *Program of the Productivist Group*.
15. Gray, *The Great Experiment*, p. 148.
16. Andersen, *Vladimir Tatlin*, p. 75. This Tatlin text, written in 1932, was given the title "Art out into Technology." Andersen's translation, rendered in English here by Keith Bradfield, gives a slightly different version of the same text. "'Constructivism', in inverted commas, did not reckon in its work with the organic connection between material and concentration. In reality, it is only as a result of these dynamic relationships that form necessary to life emerges."
17. Ibid., p. 57. This text by Punin appeared as an extract in *Veshch*, Nos. 1–2, 1922.
18. René Fülop-Miller, *The Mind and Face of Bolshevism* (London and New York: Putnam's, 1927), p. 102. Although Fülop-Miller does not mention Punin by name, he indicates that this passage was originally part of the extract published in *Veshch*, Nos. 1–2, 1922.
19. Ibid., p. 102.
20. Andersen, *Vladimir Tatlin*, p. 85. Tatlin's text was published under the title, "The Moon on Stage."
21. Ibid., pp. 77–79. The full text of an interview between Tatlin and Kornely Zelinsky was originally published in *Vechernaya Moskva*, 1932.
22. James Billington, *The Icon and the Axe* (New York: Knopf, 1968), p. 489.
23. Read and Leslie, *Naum Gabo*, p. 156.
24. The exhibition "5 × 5 = 25" was held in 1921. The signatories were the five artists who took part in it, namely, Alexander Rodchenko, Varvara Stepanova, Alexander Vesnin, Alexandra Exter, and Liubov Popova.
25. Fülop-Miller, *The Mind and Face of Bolshevism*, p. 127.
26. Marie Seton, *Sergei M. Eisenstein* (London: Bodley Head, 1952), p. 66. Seton is quoting Eisenstein from his book *Film Form* (New York: Harcourt Brace, 1949).
27. Dziga Vertov, "Kino-Eye: Lecture II," *Film Makers on Film Making*, Harry M. Geduld, ed. (Bloomington, Indiana: Indiana University Press, 1967), p. 102. Quoted by Annette Michelson in her essay "'The Man with the Movie Camera': From Magician to Epistomologist," *Art Forum*, March 1972, p. 65. Vertov's real name was Denis Kaufman. His adopted name which means "spinning-top" seems to be a quintessential 'Constructivist' image when placed in context. Michelson writes: "In 1924, Vertov made the film we know as *Kino-Glaz* or *Kino-Eye*, the first of a projected series. The *Kino-Pravda* series, his first major work, had involved him for some years in the production of short documents or newsreels on the widest variety of themes. *Kino-Glaz* is a didactic work, centered on episodes which articulate major preoccupations of the young Soviet regime: it deals with the manufacture and distribution of bread, the processing and distribution of meat, celebrates the constructions of youth camps and discusses the problem of alcoholism. . . . It is near the beginning of *Kino-Glaz* that we first see a peasant woman on her way to market to buy meat. We next see her, walking backwards, propelled by the reversal of that sequence, whence she came. The processing and distribution of meats is then recapitulated in reverse, as well."
28. El Lissitzky, *Russia: An Architecture for World Revolution*, trans. Eric Dluhosch (Cambridge, Mass.: The MIT Press, 1970), p. 32. Original version appeared in German in 1930.
29. Annette Michelson, "'The Man with the Movie Camera': From Magician to Epistomologist," *Art Forum*, March 1972, p. 64.
30. Berthold Lubetkin, "Soviet Architecture Notes on Developments from 1917–1932," *Architectural Association Journal*, May 1965, pp. 260–261.

1, 3, 4, 7, 8. Troels Andersen, ed., *Vladimir Tatlin* (Stockholm: Moderna Museet, 1968).
2. Camilla Gray, *The Great Experiment: Russian Art 1863–1922* (New York: Harry N. Abrams, Inc., 1962).
5, 15. *Art & Architecture, USSR, 1917* (New York: George Wittenborn & Co., 1971). Catalogue for exhibition held at The Institute for Architecture and Urban Studies, June 3–18, 1971.
6, 9, 10. Vieri Quilici, *L'architettura del construttivismo* (Bari: Editori Laterza, 1969).
11, 12. René Fülop-Miller and Joseph Gregor, *The Russian Theatre, Its Character and History* (London: George G. Harrap & Co., Ltd., 1930).
13, 16, 17. Jirí Kroha and Jirí Hrůza, *Sovetská architektonická avantgarda* (Prague: Odeon, 1973).
14. Anatole Kopp, *Town and Revolution* (New York: George Braziller, Inc., 1970).
18, 22–24. *Typographica 11*, June 1965.
19–21. Annette Michelson, "'The Man with the Movie Camera': From Magician to Epistemologist," *Art Forum*, March 1972.
25. Courtesy Kenneth Frampton.

# Design versus Non-Design

Diana Agrest



As much as any other form of expression, the built environment has always been redolent with meaning. One may even think of it, as Diana Agrest does, as an aleatory system of signs whose changing significance is revealed only through the processes of life itself. Against this, architecture, with its historical setting in the Renaissance, appears as the repressive projection of certain specific values. Conscious *design* fuses at this juncture with ideology, its production being configurated in such a way as to affect the conduct of life. This influence of the hermetic on the heterogeneous is, of course, in direct opposition to that other flow; namely, the spontaneous projection of life onto the built world, where it manifests itself as that which Agrest terms "non-design."

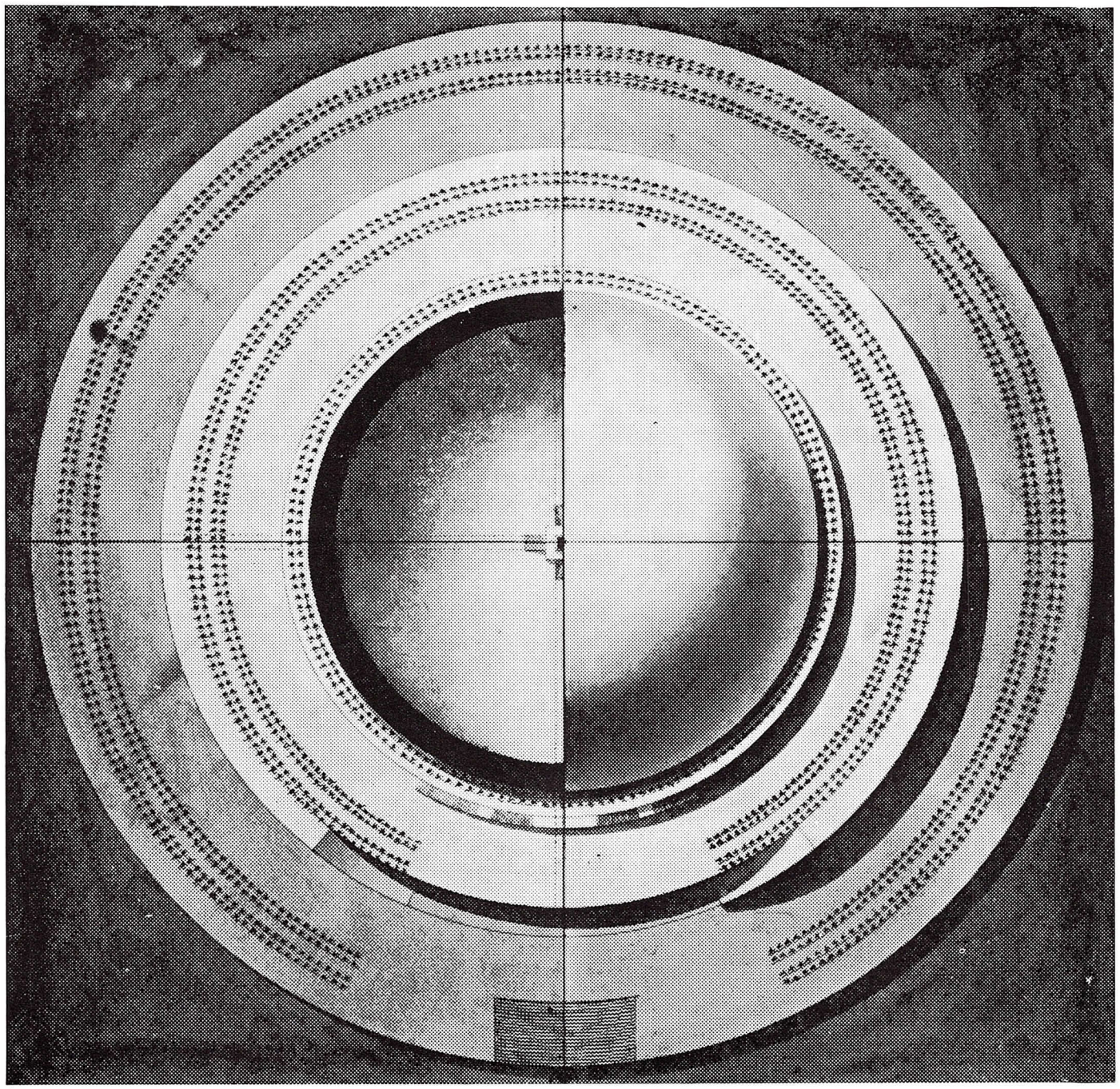
Yet once the categories "design" and "non-design" have been established, the difficulties contingent on the formation of an adequate semiotic theory of design tend to multiply rather than decrease. For the pure manifestation of *non* or rather *unconscious* design (the author's use of the term is consciously Freudian) must surely imply the suspension of all conscious design, while conscious design in its turn must imply ideological repression. The author points to some synthetic mediation of the fatality of design through its constant (even inevitable) interaction with the spontaneous play of non-design.

Yet the problem, however elaborately formulated, seems to remain; for where is the model of action capable of demonstrating the specific rules whereby the repressive "forms" of design and the liberating "processes" of non-design may legitimately interact? The author methodically leads us and herself to that frontier already explored by Jurgen Habermas in his *Technology and Science as Ideology;* that threshold where repression in respect of all nature, including our own, is found to be inseparable from instrumentality; that edge where a culture of building as the manifestation of collective desire may only be legitimized through the immediacy of the democratic process. Expression at this point becomes the substance of politics.
KF

Diana Agrest was born in Buenos Aires and received her degree in architecture from the Facultad de Arquitectura y Urbanismo, Universidad de Buenos Aires. She has taken postgraduate studies at the Ecole Pratique des Hautes Etudes, Université de Paris, and has carried out research into urban design at the Centre de Recherche d'Urbanisme, Paris, and into urban planning models at the Universidad de Buenos Aires. She has taught at Princeton University and is presently on the faculty at The Institute for Architecture and Urban Studies, where she is a Fellow.

*1. Plan of Newton's Cenotaph. Etienne Boullée, 1784. Ink and Wash.*





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*Introduction*

The specific relationship of architecture to ideology has been generally excluded from consideration in traditional architectural criticism. Concerned only to relate architecture formally, or internally, to itself, or at best to relate architecture externally to society in general, criticism has failed to truly incorporate the *cultural* problematic of architecture into its domain of concern. When the cultural dimension has been introduced, it has more often been as a simple explanation of architecture as "reflecting" a particular culture—the notion of style as the expression of the spirit of the age—than as a problem to be confronted independently from a consistent theoretical standpoint.

Practicing architects and critics of architecture have repeatedly emphasized the need to relate architecture to its social or cultural context. Positions have been developed around such concepts as "contextualism" and "ugly and ordinary" by writers like Colin Rowe and Denise Scott Brown and Robert Venturi. Rowe, for example, speaks of an architectural contextualism that situates the object of design or analysis in its physical-historical surroundings in terms of formal elements and relations; Venturi and Scott Brown speak of the need to recognize mass culture as *the* necessary cultural product of our time and as a new source of inspiration for designers. However, rather than attempting to appeal to the notion of collage—a familiar architectural strategy in periods of transition—or to the simulation of the objects of mass culture, this analysis will attempt to investigate the mechanisms of the built environment at this specific historical moment.

I wish to explore here these "external" or cultural relations of architecture—that is, between architecture and its social context—by means of a theoretical model that posits two distinct forms of cultural, or symbolic, production. The first, which I shall call *design*, is that mode by which architecture relates to cultural systems outside itself; it is a normative process and embraces not only architectural but also urban design. The second, which is more properly called *non-design*, describes the way in which different cultural systems interrelate and give form to the built world; it is not a direct product of any institutionalized design practice but rather the result of a general process of culture.

In thus examining the mechanisms which relate architecture to culture—the processes by which meaning is produced, not only within architecture or design, but also in the domain of non-design—we are, of course, analyzing ideology itself. For ideology is no more than the social production of meaning. Thus, all cultural production, such as architecture, when articulated at the economic and political levels, manifests the ways by which ideology is produced as a part of a given social structure.[1]

In this sense, it is unnecessary to compare one type of architecture to any other type of architecture—as in the accepted mode of "formal," internal criticism—or to compare it to society in general. Rather, one must oppose the notion of architecture as *design* to the notion of a radically different kind of symbolic configuration—*non-design*. This opposition allows analysis of the built environment in terms of the relationship between different cultural systems. Design and non-design, in fact, can be seen as two modes of social discourse; and to consider them in this way opens up the question of what might be called the "active relationship" between design, as one cultural system, and other cultural systems.

*Design and Culture*

Design, considered as both a practice and a product, is in effect a closed system—not only in relation to culture as a whole, but also in relation to other cultural systems such as literature, film, painting, philosophy, physics, geometry, etc. Properly defined, it is reductive, condensing and crystallizing general cultural notions within its own distinct parameters. Within the limits of this system, however, design constitutes a set of practices—architecture, urban design, and industrial design—unified with respect to certain normative theories. That is, it possesses specific characteristics that distinguish it from all other cultural practices and that establish a boundary between what is design and what is not. This boundary produces a kind of *closure* that acts to preserve and separate the ideological identity of design. This closure, however, does not preclude

*2. Newton's Cenotaph, exterior by day. Etienne Boullée, 1784. Ink and Wash.*

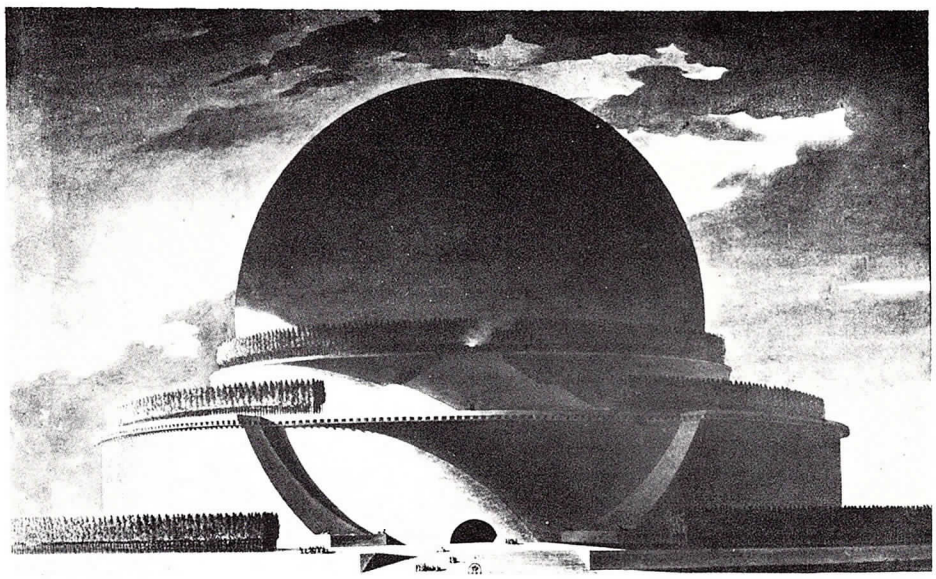
*3. Cross section of Newton's Cenotaph, interior night effect. Etienne Boullée, 1784. Ink and Wash.*

*4. Cross section of Newton's Cenotaph, interior day effect. Etienne Boullée, 1784. Ink.*

*5. Quarters for the rural caretakers, Mauperthuis, France. Claude-Nicolas Ledoux, architect, 1780. Engraving by Van Maëlle.*

*6. Panarethéon project, Chaux, France. Claude-Nicholas Ledoux, architect, 1773–1779. Engraving by Van Maëlle and Simon.*





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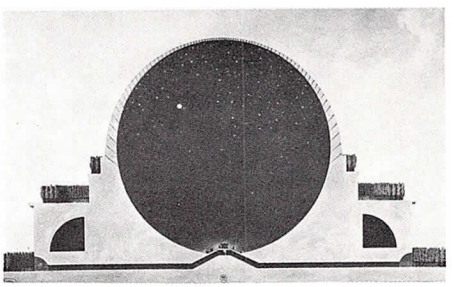

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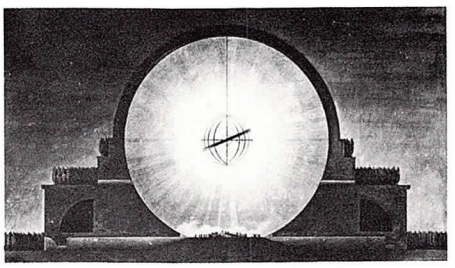

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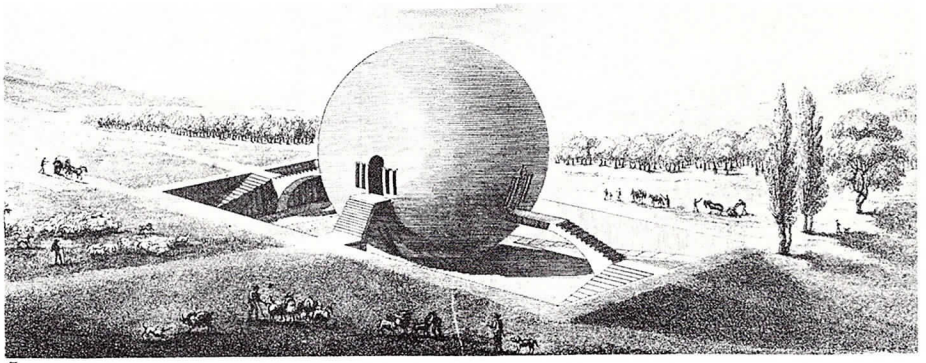

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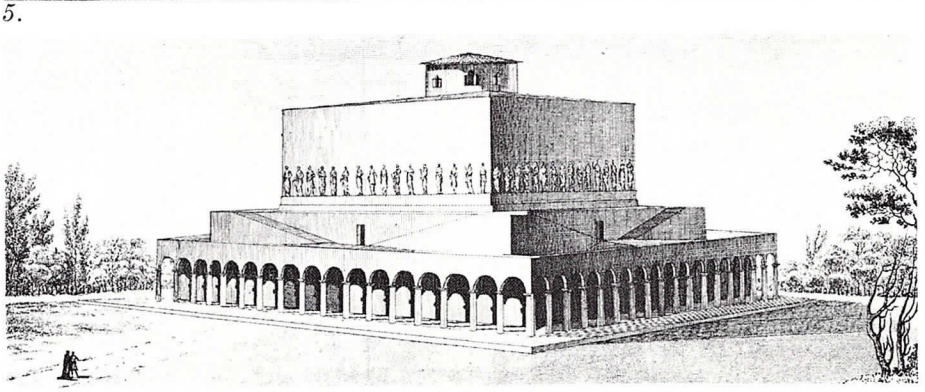


*6.*

a certain level of permeability toward other cultural systems—a permeability which nevertheless is controlled and regulated in a precise way.

Culture, on the other hand, is understood to be a system of *social codes* that permit information to enter the public domain by means of appropriate signs. As a whole, culture can be seen as a hierarchy of these codes, manifested through various texts.[2]

The relationship between design and culture may, then, be stated as the mode by which design is articulated (as one cultural system) in relation to other cultural systems (at the level of codes). The transformations in these articulations are historically determined, and they display themselves as changes in the structures of meaning. Thus, the development of specific forms of articulation between design and other cultural systems can be seen as a dynamic process, the study of which opens up the problem of the production of meaning.

The relationship between design and other cultural systems is heightened and intensified at certain moments in this process, and its precise articulations become clearer. In architecture, this occurs when new economic, technical, functional, or symbolic problems force the production of new formal repertories, or the expansion and transformation of existing vocabularies.

Thus, during the French Enlightenment, elementary geometrical figures (the sphere, the pyramid, the cube, etc.) were introduced as the primary constituents of a new formal vocabulary by the "revolutionary" architects Boullée and Ledoux (figs. 1–6). For Ledoux these forms expressed the new notions of the *sublime*, while for Boullée they represented the universe and its scientific explanation developed in the context of profound social and political change.[3]

*Specificity*

This recognition of articulations between design and other cultural systems also implies the recognition of differences between them—differences which may be understood through the notion of *specificity*.[4] This is a notion which permits the clarification of codes according to their relation to design or to other cultural systems.



Three types of codes regulate the interpretation and production of texts in design. First, there are those codes which may be seen as exclusive to design, such as codes establishing relationships between plans and elevations or plans and cross-sections. Second, there are those codes which are shared by various cultural systems, among which design is included (i.e., spatial, iconic). Third, there are those which, while they are crucial to one cultural system (such as rhythm to music), participate—albeit transformed—in another (such as architecture) by virtue of a shared characteristic, i.e., in the case of rhythm, the temporality of the sequence, audial in one case and visual in the other.[5] In a decreasing order of specificity, the first type of codes are specific to design, the second have a multiple specificity, and the third are non-specific.

The specificity of a signifying system is not, however, defined solely by the specificity of its codes, but also by the form in which those codes are articulated; that is to say, the combination of codes may be specific, although the codes themselves may or may not be specific to the system in question.[6] Examples of specific code articulation in architecture are found in classical theories of harmony that utilize the articulation of musical codes and arithmetical proportional series for the invention of specific *architectural* codes, which are then used to determine the proportions of and relationships between the different elements of a building.

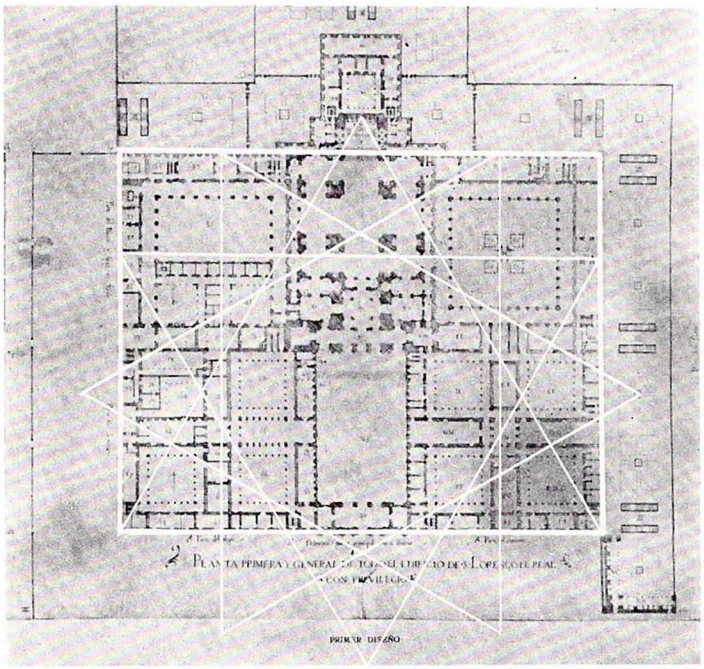
Specificity manages to maintain the limits of architecture despite the apparent changes that occur under the pressures of history, technology, social action, or symbolic change. On the one hand, the most specific codes remain within the system of architecture; on the other hand, the less specific codes link design with other systems through the opening and closing of its limits. This mechanism allows for the articulation of design with some systems and not with others, a process which operates according to the "internal" determinations of design—that is, according to

*7. The quadro of the Escorial in relation to Vitruvius' astrological plan (René Taylor).*

*8. The cosmological man superimposed on the plan of the Escorial (René Taylor).*

*9. Astrological configuration (Julius Firmicus Maternus).*



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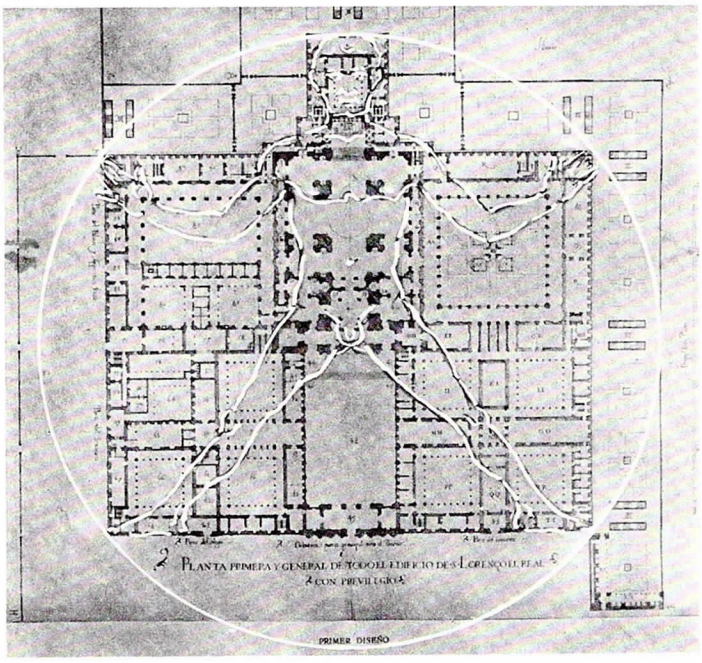


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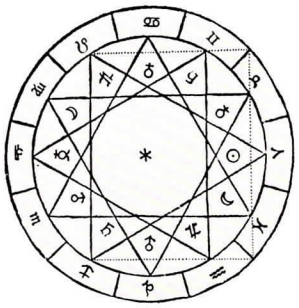


*9.*

the rules of architectural language, to the logic of the configuration, and to the meaning proper to the "text" o design.[7]

The Mannerist inversion of the established architectura rules—by which each element is used in contradiction t what should be its prevailing ideological function—is a excellent example of such internal determination, in whicl the inversions so weaken the limits of architecture as t allow an opening to codes external to it; thus the "painterly architecture of the sixteenth century in Italy.[8]

This process of articulation might, however, take plac according to "external" determinations—to the forces o economics, politics, or other ideologies foreign to design The influence of hermetic thought on the design of th Escorial Palace (figs. 7, 8), for example, demonstrates th role of such external factors in architecture. Both the pla and the general configuration seem to have been derive from mystical or hermetic geometric regulating lines, base partly on parallel developments in quantitative mathemat ics, and partly on chapters eliminated from Renaissanc editions of Vitruvius,[9] but not, as might be assumed, d rectly from classical architectural theory. Magic codes wer thus substitutes for the Albertian geometric codes Geometry, while represented by similar figures, was im bued with an entirely different meaning. At the same time these geometric magic codes remained distinctly separat from other magic codes, such as those based on verbal o gestural practices which never entered in their physica spatial implications into architecture (fig. 9).

*Metaphoric Operations in Design*

The concept of the closing and opening of limits introduce the notion of an ideological *filtering* in the production o design, which take place by means of certain processes o symbolization. In this case an equivalence, or exchange, o sense is produced by restricting the access of certain code and figures from other systems into architecture.

The notions of *metaphor* and *metonymy* allow for a mor systematic analysis of this symbolic functioning. Thes should be considered as the mechanisms of opening an

*10. The liner "Flandre."*

*11. The liner "France."*

*12. The liner "Aquitania."*

*13. The deck of the "Aquitania."*



closure, ultimately revealing the way in which design maintains its limits in relation to culture and acts as a filter in relation to meaning.[10]

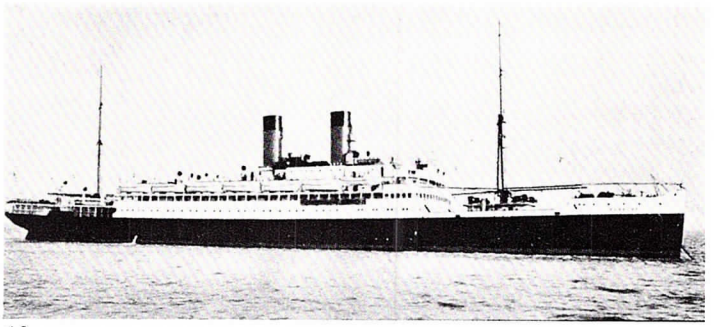
Metaphor and metonymy are, of course, notions that have been used principally in the analysis of discourse and text. Since in this context we are analyzing the *production* of meaning and not its structure, the reference in general will be to metaphoric or metonymic *operations* rather than to these figures as they applied to classical rhetoric.[11]

These tropes or rhetorical figures represent the most condensed expression of two basic kinds of relationship in discourse: the relation of similarity, which underlies the metaphor, and the relation of contiguity, which determines the metonymy. Each may exist in the relationship between the figure and the content or in the relation between figure and figure.

The development of any discourse (not necessarily a spoken one, and in this case the architectural discourse) may develop along two semantic-syntactic lines: one theme in the expression or content may lead to another either by means of similarity or by means of contiguity.[12] The most appropriate term for the former relation is "metaphoric" while the latter might be termed "metonymic."[13]

In its relationship to other cultural systems, which is a necessary condition for the regeneration of sense, architecture takes part in a game of substitutions which, thought of in terms of metaphoric or metonymic operations, explains, at the most specific level of form, the translation from extra-architectural to intra-architectural systems in a recoding which, by means of reducing meanings, maintains the limits of architecture.

The well-known nautical metaphor in Le Corbusier's Villa Savoye (figs. 10–13) exemplifies this functioning. Here, two different signifying systems are related: dwelling and ocean liner. The necessary condition for this relationship is provided by the existence of an element common to both, in this case the window. Through a metaphoric operation, a figurative substitution of the signifying element common



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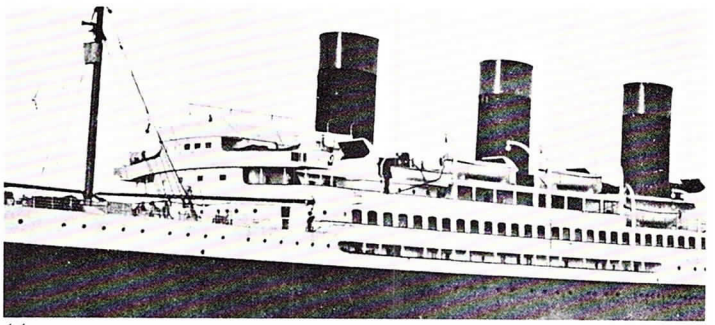

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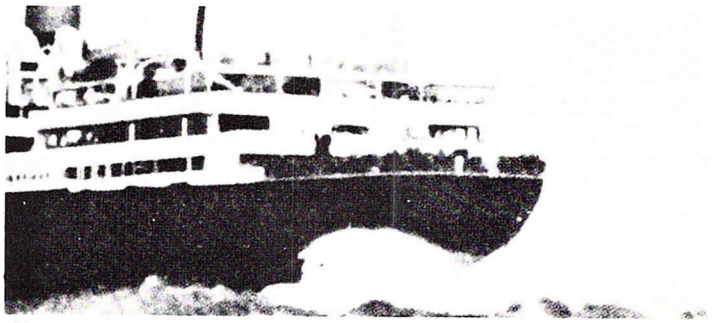

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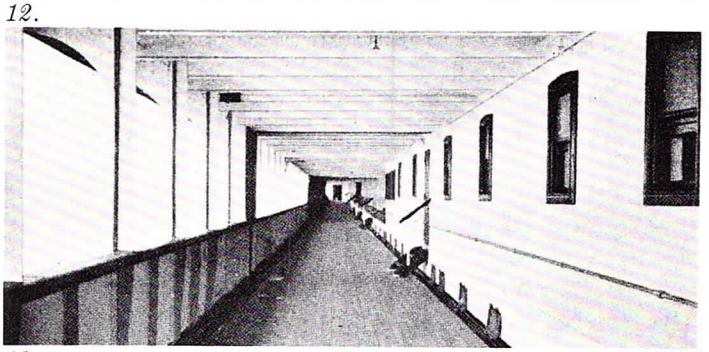


*13.*

to both systems is produced (dwelling/window—liner/window), carrying and transferring codes from one system (liner) to the other (house). The new form is thus loaded with the new meanings required to translate into figures the proposed new architectural ideology.

The operation involved may be explained by the following propositions:

Housing Code: $\frac{\text{House}}{\text{Inhabit}} : \frac{\text{Window}}{\text{Passage of Light}} : \frac{\text{Wall}}{\text{Boundary, Protection, etc.}}$ : etc.

Liner Code: $\frac{\text{Boat}}{\text{Sail + Inhabit + Movement + Technology}} : \frac{\text{Window}}{\text{Passage of Light + View + Seat + Sun}} : \frac{\text{Decks}}{\text{Promenade}}$ : etc.

Metaphor: $\frac{\text{House Window}}{\textit{Liner Window}} \times \frac{\textit{Liner Window}}{\text{Light + View Movement + Technology + . . .}} = \frac{\text{House Window}}{\text{Light + View + Movement + Technology + . . .}}$

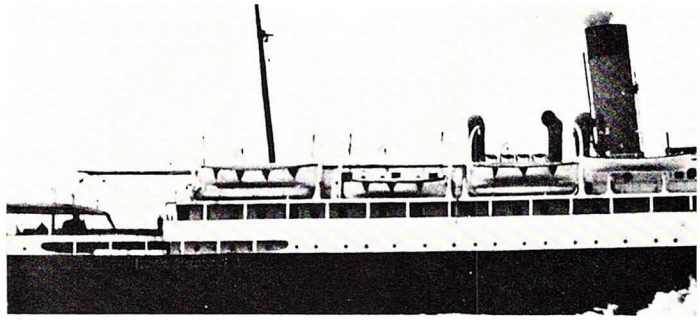
The similarity of functions—in this case, both liner and house are forms of habitation—makes the metaphor possible.

To these metaphoric transpositions other metonymic operations are added—for example, the *promenade architecturale*—which also carry further meanings related to the liner (fig. 14).

*Functionalist Metaphors*

At an urban scale, where the system of architectural design co-exists with many others almost by definition, the role of the metaphor as a filtering device becomes particularly evident, especially in the functional approach to urban design.

At the moment when urbanism was constituted as an institutionalized practice in the first decade of this century,



*14.*

urban formal codes were developed on the basis of th prevailing architectural codification. From the set of poss ble systems that give meaning to form, the functional ap proach was emphasized almost exclusively. Le Corbusie may serve once more to exemplify the type of functionalisr that is at work in a filtering operation in the substitutiv relation between architecture and other systems.

In Le Corbusier's texts *Vers une Architecture* (1923) an *Urbanisme* (1925), these metaphoric operations functio clearly as a mechanism for contact between different cu tural systems and, on other levels, as a means to architec tural recodification.[14]

At the building scale, Le Corbusier establishes a connectio between architectural systems and other systems, such a technology, tourism, sports, and geometry. This connectio is established through a metaphor based on similarity c function.[15]

Geometry, for example, had acted as an internal code fo formal control from the classical period of Greek architec ture. It had not, however, functioned as the provider of th formal vocabulary itself, geometric regulating lines bein the "invisible" elements in the construction. For Le Cor busier, however, geometry became not only an instrumen of formal control, but also the provider of the formal vocal ulary itself in two and three dimensions. The instrumen (tool) for representation, that is, drawing, became first th project itself, and then the construction, without alteration

At the urban scale, Le Corbusier's metaphoric operatio establishes a relation between geometry as a signifyin system and the city by means of the common element c "order," which is manifested as a "grid"; a system of equiva lences is established between the geometric grid with it connoted codes and the city grid with the set of value ascribed to it by Le Corbusier.

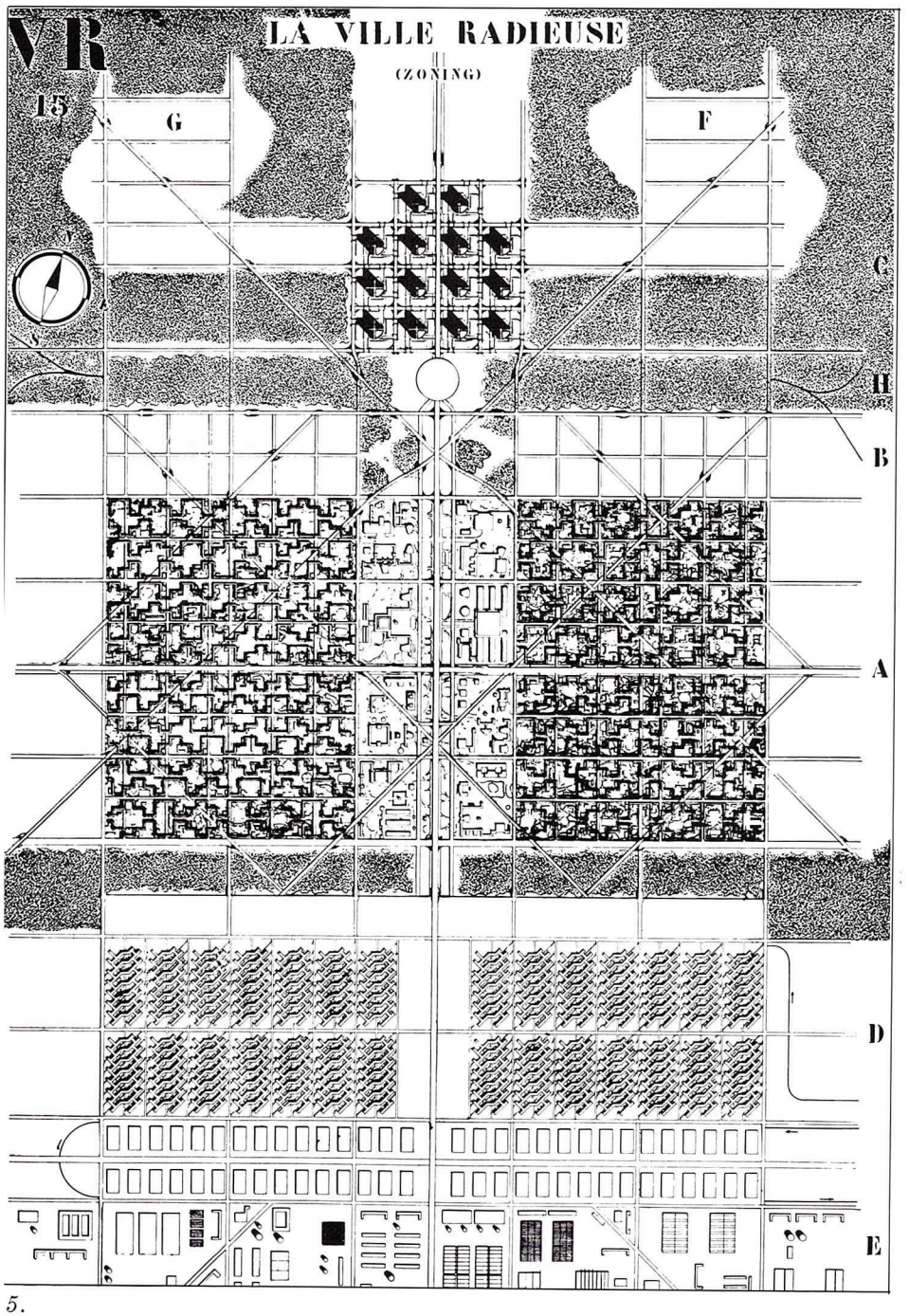
Thus, in *Urbanisme*, the existing city is seen as equivalen to disorder, chaos, illness, and irrationality. On the othe hand, the grid, the geometric order, is seen as equivalent t order, health, beauty, reason, modernity, and progress

*14. The liner "Lamoricière."*

*15. The Radiant City. Le Corbusier, architect, 1933. Zoning diagram.*

*16. Diagram implying the expansion of organic networks.*

*17. Network of elevated streets.*

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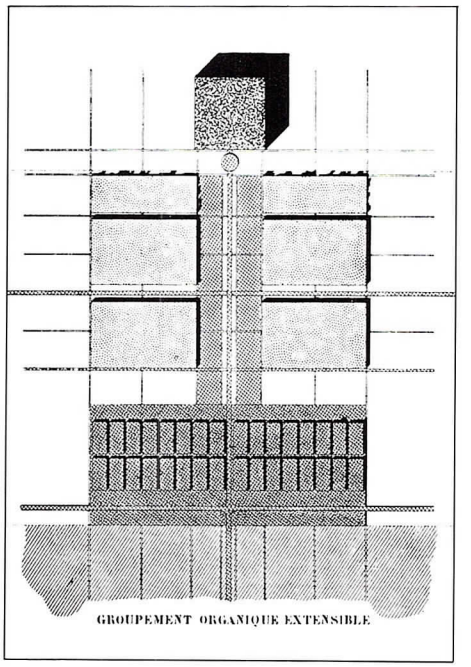


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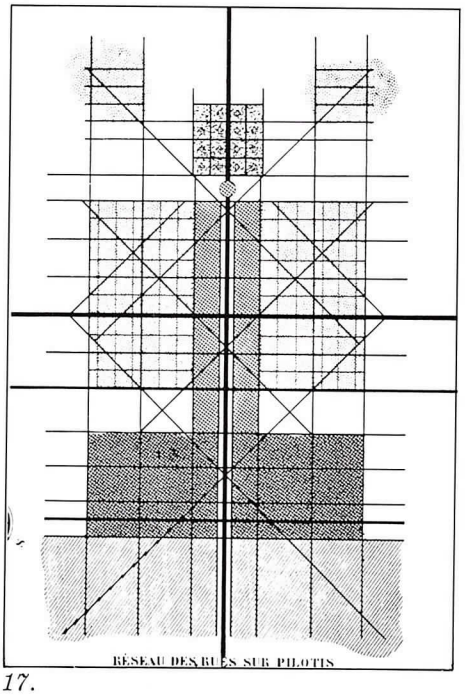


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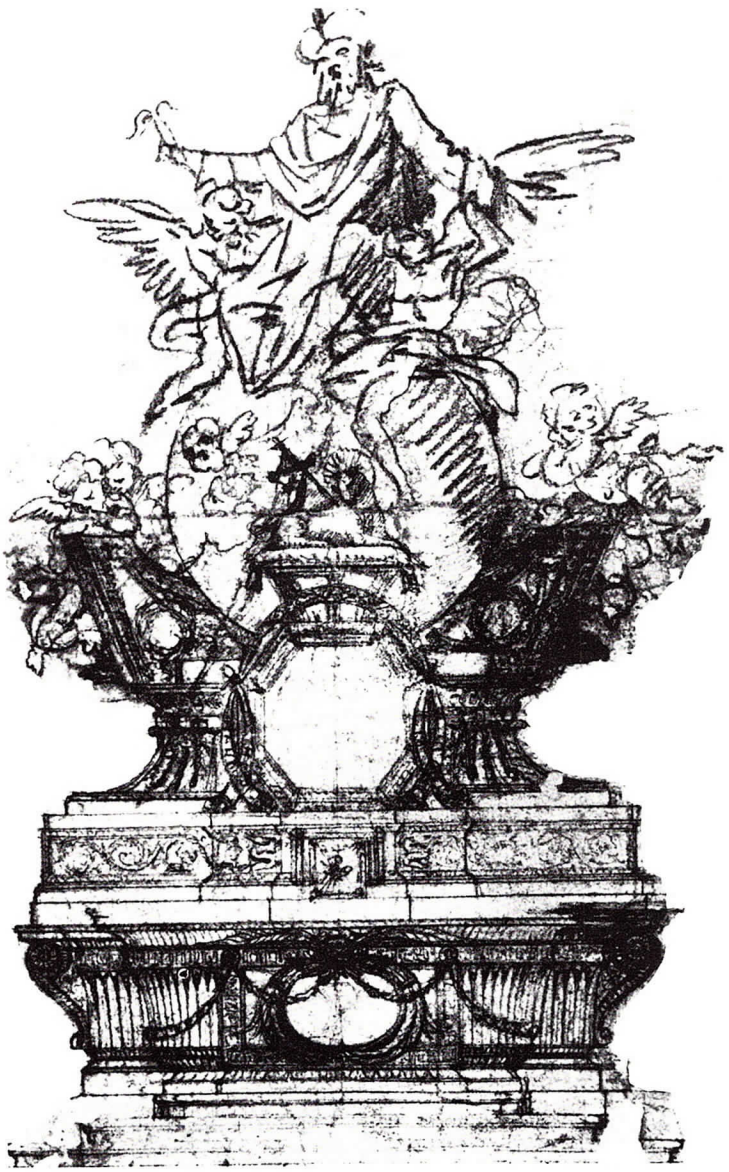
*18. Study for the altar of S. Basilio in S. Maria del Priorato, Rome. G. B. Piranesi, c.1764.*





*18.*

"Geometry is the foundation. . . . It is also the materia basis on which we build those symbols which represent t us perfection and the divine. . . ."[16]

In the plans for the Ville Contemporaine, and later for th Ville Radieuse (figs. 15–17), Le Corbusier establishes th equivalence between those two systems by means of th common element of grid-order. The appropriate connote codes of the geometric grid are transferred through figurative substitution to the city plan and become the code of the city itself.

It can be seen, in this case, that while there is an initia opening of the system, its closure is produced by means of metaphorical equivalence by which the means of repre sentation are imposed as ideological filters in order to de velop an architectural recodification. In this substitution meanings are limited and filtered by a system (geometry which, while it may not be specific to architecture, will, i its recoding, become specific to urban design. This is mad possible by the fact that a system such as geometry ma participate in a double "game": symbolic at a formal-cultura level, and instrumental, or representative, at the level o the specific practice where physical configuration become the device that allows for translation and recoding.

The relationship between geometry as a symbolic system o the one hand, and as a basic organizational system on th other, is not, of course, a new problem and may be found a other points in the history of architecture. In the work o Piranesi, for example, the figurative and the geometri co-exist, juxtaposed in a clear dialectical relationship. Th rear of the altar of S. Maria del Priorato (fig. 18), fo example, crudely displays the set of geometric volume which serve as its support, while the face presents itself a almost pure allegory. The architectural contradiction be tween geometry and symbolism is here critically posed.[17]

When Boullée and Ledoux adopted geometry in itself as formal system, the sacred symbology was substituted for more secular symbology—that of man. In Le Corbusie however, there is no longer a separation between th geometric and the symbolic; rather geometry itself repre

ents the symbolic aspect of form, and carries with it an ntire set of implicit values.

*he Critique of Functionalism*

With the waning of the enthusiasm for functionalism in the ate 1940s, a series of works appeared which, conscious f the cultural reductivism of the heroic period, were xplicitly concerned with the cultural rather than the unctional aspects of design. This cultural concern was lemonstrated by an intention to make explicit the articulaion between architecture and other cultural systems.[18] The vork of the active members of Team 10 (Alison and Peter Smithson) reintroduce culture in this sense, and again new penings and closures are produced by means of metaphoric perations: openings to incorporate "the culture"; closures o preserve the specificity of the system.

However, while in Le Corbusier the metaphor was reducive in terms of the possible inclusion of other cultural ystems—a product of the exclusive nature of geometry and s concommitant modernism—the intention of Team 10 was o establish relations between architecture and other sysems. "Our hierarchy of associations," they stated, "is roven into a modulated continuum representing the true omplexity of human associations. . . . *We must evolve an rchitecture from the fabric of life itself*, an equivalent of he complexity of our way of thought, of our passion for the atural world and our belief in the ability of man."[19]

his criticism addresses itself precisely to the functionalist eductivism of the 1920s and to its elimination of cultural spects, here described as "human associations" and "the abric of life itself." These aspects were considered as an ntrinsic aspect of architecture by Team 10.

nce more, metaphor is being used as the substitutive peration to incorporate "vital" aspects into design (figs. 19, 1). Two types of metaphor are used. The one, which acounts for urban form in general, resembles Le Corbusier's se of geometry at an urban scale. The other, which acounts for the realization of ideas at a building scale, is itself onceived as a fundamental element of urban design.

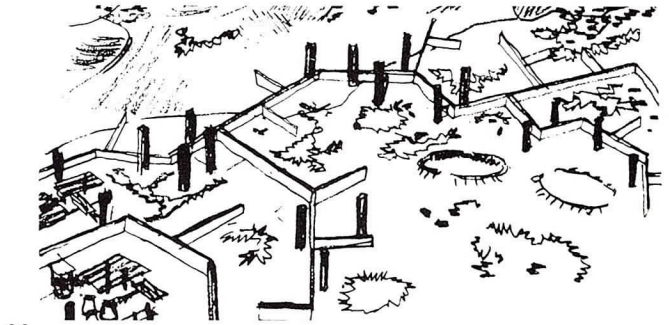
The first metaphoric operation links two systems through the common element "life," and thus relates the city to nature (a tree). Hence the plans for Golden Lane (figs. 22–25). The city is overlaid with the attributes of a tree and given qualities of growth, organicity, movement; at the level of form, the city is understood *as* a tree possessing a stem, branches, and leaves.

$$\frac{\text{city/life}}{\textit{tree/life}} = \frac{\textit{tree/life}}{\text{branches, leaves, etc.}}$$

The second type of metaphoric operation articulates the relationship between design and life at the scale of the building and operates on the basis of a common function: circulation of people (street). In the proposal for Sheffield (fig. 20), the corridor is transformed through substitution into a street, carrying with it the urban codes which, when transferred to the building, give it "life."

Despite the explicit intent of Team 10 to open the system of architecture to culture, however, the result does not, in the end, differ much from the reductive system they criticize. The type of substitution utilized—the recodification of architecture by means of yet another formal analogy—is fundamentally similar to that effected by Le Corbusier. The process by which the Smithsons assimilate "life" to design is described exclusively in socio-cultural terms, even though "nature" is invoked, while the form adopted is taken directly from nature, that is, from organic, physical life. The other systems to which architecture is supposed to be actively linked (in this case, life or nature) are, in this way, filtered and reduced through the metaphor of one system, that of architectural forms. Thus, there is little real difference between the street in the air and the open corridor; the symbolic functioning which would make an architecture "out of life itself" is in fact absent. We may now see that metaphoric operations, rather than functioning to open the design system beyond its limits, in fact operate as filtering mechanisms which precisely define those limits.

It is paradoxical that the metaphor which allows for the interrelation of different codes is here used as a closing mechanism. Design is once again a sieve which allows the



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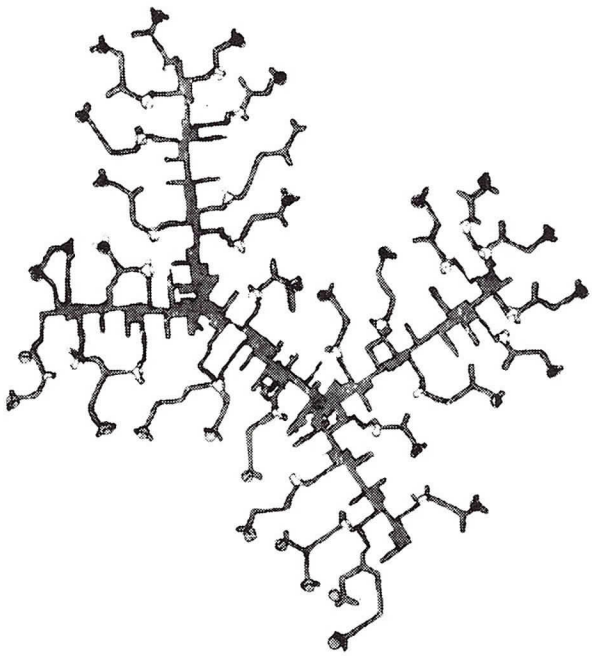

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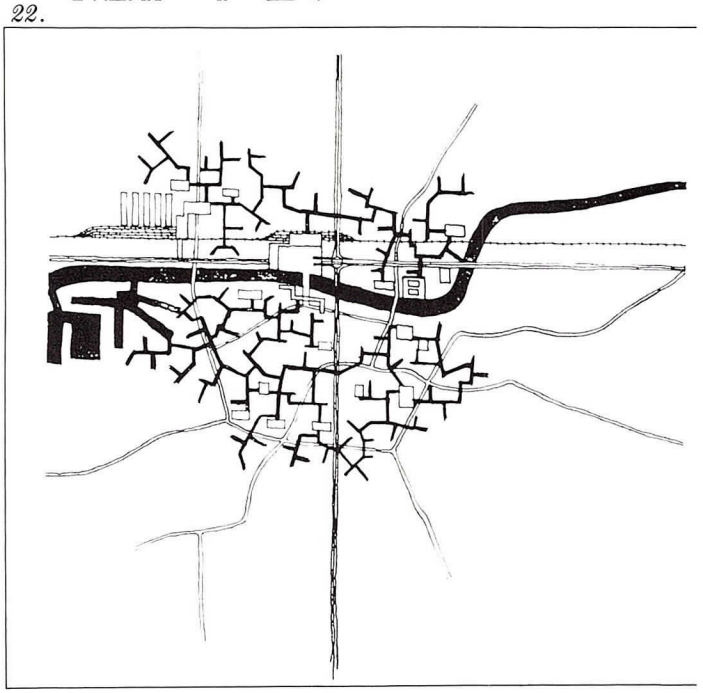

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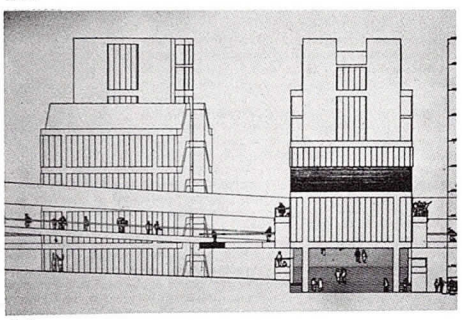

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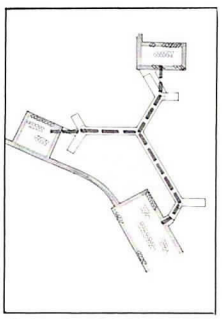

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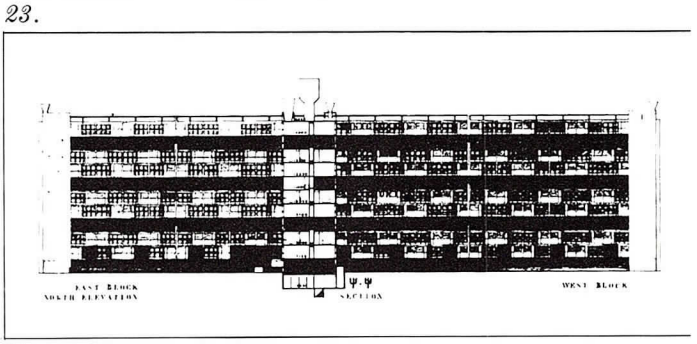


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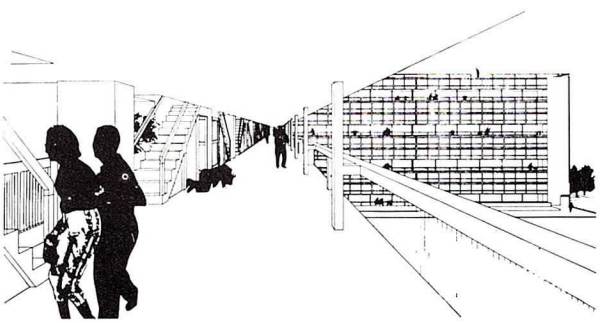


25.

*9. "Stem" development, Caen Herouville. Shadrach Woods, rchitect, 1961. Linear organization f activities and the proposed rouping of cells around the linear enter.*

*0. Sheffield University competition roject. Alison and Peter Smithson, rchitects, 1953.*

*21. "Stem" development, Caen Herouville. Shadrach Woods, architect, 1961. The synthesis of parking lots, pedestrian ways, and lift points becomes the generator of the urban element.*

*22. Study for Golden Lane, London. Alison and Peter Smithson, architects, 1952. Street deck complex. The street mesh slots into the vertical circulation of such complexes.*

*23. Diagram.*

*24. Elevation and section.*

*25. Street perspective.*

assage of certain meanings and not others, while the ıetaphor, which is used as a translating device from other ɔdes to architecture, provides a mechanism by which leology operates through design. In the infinite field of ignifying possibilities, the metaphor defines, by a complex rocess of selection, the field of "the possible," thus con-ɔlidating itself in different regions by means of a language r languages.

*esign/Non-Design*

here is, however, another possible way of stating the elationship between design and culture. Rather than see-ıg systems of culture from a point of view that imposes a ierarchical relationship in which architecture or design is ɔminant, we may posit a notion of the "non-designed" built ıvironment—"social texts," as it were, produced by a iven culture.

he act of placing design (that is, both architecture and rban design) in relation to the rest of the built ıvironment—the non-designed environment—immedi-ely changes the level at which the problem is formulated. 'hile in the work of Team 10 the problem is stated as ıternal to a single cultural system (architecture or urban esign)—the relating of architecture to the city in such a ay that the former acquires the "life" of the latter, here ıe signifying function of design is considered to relate to ıd, in relating, to oppose the rest of the built environment. . is regarded as a problem *internal to culture*, and thus to ı entire set of cultural systems.

ı these terms, architecture is no longer either implicitly or xplicitly seen as the dominant system, but simply *one* of any cultural systems, each of which, including architec-ıre, may be closed or "designed." But it is the entire set of fferent cultural systems configurating the built environ-ent, which we call non-design.

ı the world of non-design, that no man's land of the sym-ɔlic, and the scene of social struggle, internal analysis of ngle systems is revealed as inadequate and impossible to ɔply. Here there is no unique producer, no subject, nor is .ere an established rhetorical system within a defined in-stitutional framework. Instead there is a complex system of intertextual relationships.

The opposition between design and non-design is fundamentally defined by three questions: first, the problem of *institutionality*; second, the problem of *limits and specificity*; and third, the problem of the *subject*. While the first establishes the relationship between design and non-design, the second establishes their respective types of articulation within culture (ideology), and the third establishes the processes of symbolization.

Design may be defined as a social practice that functions by a set of socially sanctioned rules and norms—whether implicit or explicit—and therefore is constituted as an institution. Its institutional character is manifested in the normative writings and written texts of architecture, which fix its meaning and, therefore, its reading. These texts insure the recording of the codes of design and guarantee their performance as filters and preservers of unity. They assure the homogeneity and closure of the system and of the ideological role it plays. The absence of a normative written discourse in non-design, on the other hand, precludes defining it as an institution and makes possible the inscription of sense in a free and highly undetermined way; we are here presented with an aleatory play of meaning. Thus, while design maintains its limits and its specificity, these defining aspects are lost in the semiotically heterogeneous text of non-design.[20]

Non-design is the articulation—as an explicit form—between different cultural systems. This phenomenon may be approached in two ways: as empirical fact—the actual existence of such systems found, for example, in the street, where architecture, painting, music, gestures, advertising, etc. co-exist—and as a set of related codes. In the first instance, at the level of "texts," each system remains closed in itself, presenting juxtaposed manifestations rather than their relationships. At the level of codes, on the other hand, it is possible to discern the mode of articulation between the various systems and, in this way, to define the cultural and ideological overdetermination of the built environment, or rather the process by which culture is woven into it.[21] The

predisposition of non-design to openness implies permeable limits and an always fluctuating or changing specificity (fig. 26).

Finally, if design is the production of an historically determined individual subject, which marks the work, non-design is the product of a social subject, the same subject which produces ideology. It manifests itself in the delirious, the carnivalesque, the oneiric, which are by and large excluded or repressed in design.

To study the reality of non-design and its symbolic production in relation to culture, it is necessary to perform an operation of "cutting"—"cutting" and not "deciphering," for while deciphering operates on "secret" marks and the possibility for discovering their *full* depth of meaning, cutting operates on a space of interrelations,[22] *empty* of meaning, in which codes substitute, exchange, replace, and represent each other, and in which history is seen as the form of a particular mode of symbolizing, determined by the double value of use and exchange of objects, and as a symbolic *modus operandi* which may be understood within that same logic of symbolic production and which is performed by the same social subject of ideology and the unconscious.[23]

The moment one object may be substituted for another beyond its "functional" use-value, it has a value added to it which is the value of exchange, and this value is nothing but symbolic. Our world of symbolic performances is comprised of a chain of such exchanges in meaning; that is how we operate within the realm of ideology. Non-design leaves this ideology in a "free-state," while design hides it.

The mode of analysis for these two phenomena of design and non-design (at least from the first moment that the difference between them is recognized) must therefore vary.

*Reading. Mise-en-Séquence*

As a complex social text, a semiotically heterogeneous object in which many different signifying matters and codes intervene, non-design has a disposition to be open to a situation which we will call here a *mise-en-séquence*.

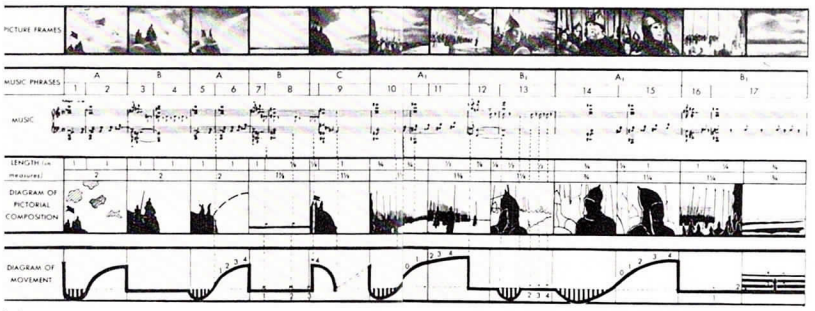
*26. Audio visual articulation in a sequence from the film* Alexander Nevsky.

We propose here for non-design a productive reading, nc as the re-production of a unique or final sense, but as a wa of retracing the mechanisms by which that sense was pr duced.[24] Productive reading corresponds to the expansiv potential of non-design and permits access to the functio ing of meaning as an intersection of codes. The object analysis is not the "content," but the conditions of a conten not the "full" sense of design but, on the contrary, th "empty" sense which informs all works.[25] Instead of rea ing by following a previously written text, the readin starts from a "signifier of departure," not only toward a architectural text but toward other texts in culture, puttin into play a force analogous to that of the unconscious, whic also has the capacity to traverse and articulate differe codes.

The metaphoric operation participates asymmetrically i both readings, design and non-design. While in design th metaphor is not only the point of departure but also the fin point of the reading, in non-design the metaphoric an metonymic operations function similarly to dreams, a chains which permit access to meanings that have bee repressed, thus acting as expansive forces. This expansiv mechanism may be seen to be a device used for the purpos of criticism in the work of Piranesi. His opposition to th typological obsession of his time is an indication of his pe ception of the crisis of architecture and the consequent nee for change and transformation. His Campo Marzio (fig 27–29) is a true architectural "explosion" that anticipate the destiny of our Western cities.[26] Piranesi's "explosive vision comprises not just the architectural system *per se* bu rather a system of relationships, of contiguity and substitu tion.

Non-design may also be seen as an explosive transformatic of design. This kind of explosion implies in some way th dissolution of the limits of architecture, of the ideologic limits which enclose different architectural practices.

In front of two drawings of Piranesi's Carceri (figs. 30, 32 one of the Carcere Oscura of 1793 from the series of th Opere Varie and the other on the Carceri Oscure from th Invenzioni, the Russian filmmaker Eisenstein makes a rea




26.

ng which may be considered as an example of this type of nalysis (figs. 33, 34). Eisenstein applies a cinematographic eading to the first prison, his reading producing displacenents with respect to the limits imposed by pictorial and rchitectural codes, thereby making it "explode" in a kind of inematographic sequence.[27] This is the starting point of a eading that travels across literary, political, musical, and istorical codes, multiplying in this way perceptions which re potential in the Piranesian work. A proof of this potenial lies in Eisenstein's reading of Piranesi's second engravng, done eighteen years later, in which Eisenstein finds hat the second is actually an explosion of the first prison, lone by Piranesi himself.[28] It should be noted that Eisenstein is here dealing with a closed cultural system, such as rchitecture or painting. What Eisenstein takes, however, s not just *any* closed work from these fields but rather the vork of someone like Piranesi, who poses the problem of he explosion in form (or form as explosion) in his Carceri, r in his Campo Marzio, which is a delirium of typological haining. Although this Piranesian strategy touches probems specific to architecture, it also comes very close to the roblem of the explosion of sense in architecture, to the roblem of meaning as signifying chaining. In creating this xtreme situation, Piranesi is implicitly assessing the probem of the limits of architecture as a "language," that is, as a losed system.

*ragments of Reading*

One evening, half asleep on a banquette in a bar, just for n I tried to enumerate all the languages within earshot: usic, conversations, the sounds of chairs, glasses, a whole tereophony of which a square in Tangiers (as described by evero Sarduy) is the exemplary site. That too spoke within ie, and this so-called 'interior' speech was very like the oise of the square, like that amassing of minor voices oming to me from the outside: I myself was a public quare, a *sook*; through me passed words, tiny syntagms, its of formulae, and *no sentence formed*, as though that ere the law of such a language. This speech, at once very ultural and very savage, was above all lexical, sporadic; it et up in me, through its apparent flow, a definitive discontinuity: this *non-sentence* was in no way something that ould not have acceded to the sentence, that might have been *before* the sentence; it was: what is eternally, splendidly, *outside the sentence*."[29]



The built environment as the object of reading is not "seen" as a closed, simple unity but as a set of *fragments*, or "units of readings." Each of these units may be replaced by others; each part may be taken for the whole. The dimension of the built environment, empirically determined, depends upon the density of meanings, the "semantic volume."

Since these fragments appear as an articulation of different texts belonging to various cultural systems—e.g., film, art, literature—it is possible to read them by starting from any of these systems, and not necessarily from design.

Certain types of configurations, like public places (streets, plazas, cafes, airports), are ideal "fragments of readings," not only for their "semantic volume," but also for the complexity they reveal as to the signifying mechanisms in non-design. They may be characterized as signifying "nodes," where multiple codes and physical matter are articulated, where design and non-design overlap, and where history and the present are juxtaposed.[30]

The reading that can be produced by these places is not a linear discourse but an infinite and spatialized text in which those levels of reading, organized along various codes, such as theater, film, fashion, politics, gesture, are combined and articulated. The reading example we choose to present below is in itself metaphorical. It is the metaphor of architecture as theater. It is not a specific detailed analysis, but rather it exemplifies the mechanisms of chains and shifters.

*Chains:*

A metaphor begins to function by articulating the referential codes in relation to other codes by means of replacing the referential codes in the signifier of departure with another code. In this way, a chain linking the codes is developed. Once the intersemiotic metaphor, such as that between architecture and theater, is produced and a possible level of reading is established, the chain of signifiers along the codes and subcodes of that cultural system is

*27, 28. Plans of the Campo Marzio, Rome. G. B. Piranesi.*

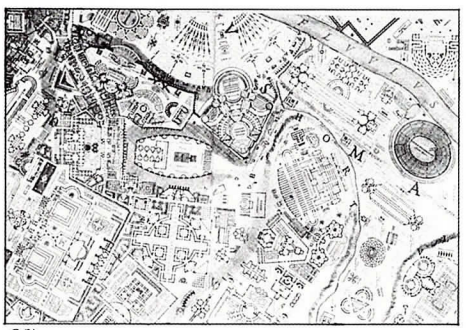
*29. Campo Marzio. Perspective view of Hadrian's tower, the crypt entrance, and of the two adjacent stadium.*

*30. "Dark Prison" by G. B. Piranesi, 1743. Engraving.*

*31. Sergei Eisenstein's schematic sketch of the "Dark Prison" by G. B. Piranesi.*

*32. Prison by G. B. Piranesi, 1743. Engraving.*

*33, 34. Sergei Eisenstein's sketches for his analysis of the "Dark Prison" by G. B. Piranesi.*



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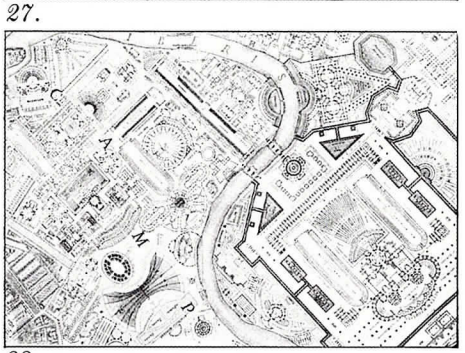

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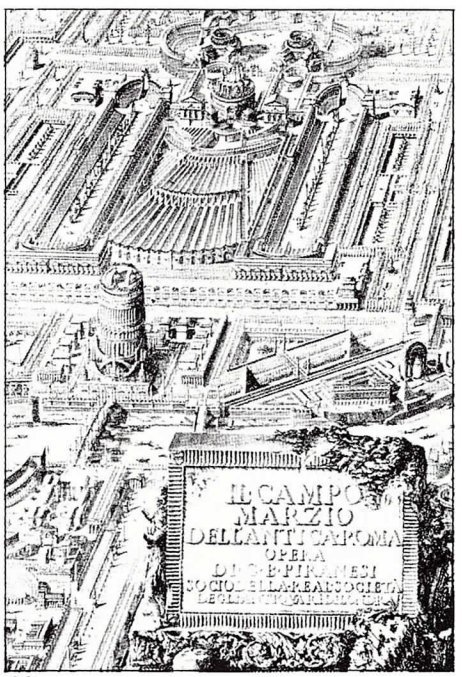


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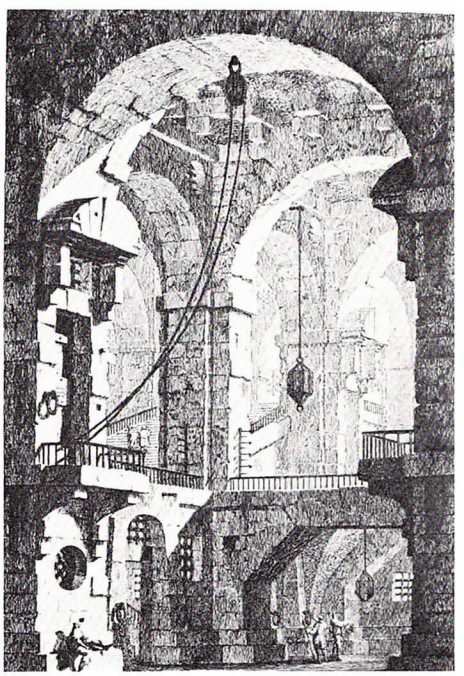

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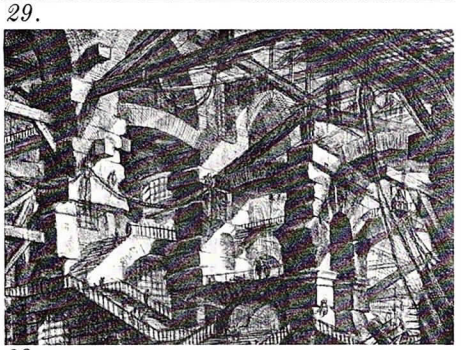

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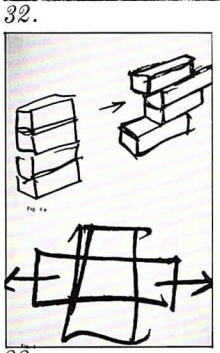

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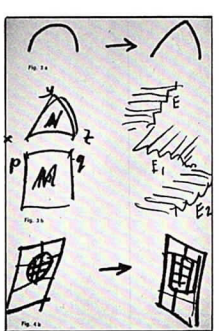

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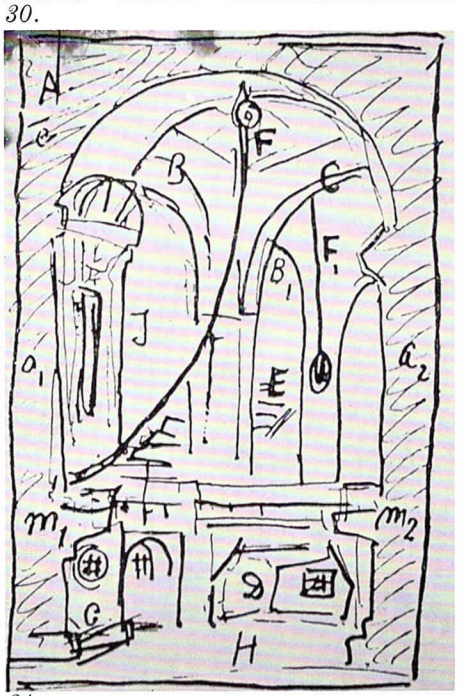



31.

organized by "natural association"—that is, metonymically.

Signifiers appear and disappear, sliding through other texts in a play that moves along the codes of, for instance, the theater (i.e., scenic, gestural, decorative, acting, textual, verbal, etc.) in an intertextual network. This play continues until some signifier becomes another departure signifier, opening the network toward new chains through what we have called the *mise-en-séquence*, thus starting other readings from other cultural systems like film, fashion, etc. These signifiers which open to other systems may be called *shifters*.[31]

*Shifters:*
Such a reading presents a symbolic structure of a "decondensed" kind. Here, by decondensation we refer to an operation which is the reverse of that in the elaboration of dreams. Condensation and displacement are the two basic operations in the work of elaboration of dreams. By them, the passage is produced from the latent level to the manifest level of the dream. These two operations of condensation and displacement are two ways of displacing meanings, or of overdetermining, or giving more than one meaning to, some elements; they are produced precisely by means of the two operations already discussed, namely metaphor and metonymy. The metaphor corresponds to condensation, and metonymy to displacement.[32] In this way, it is possible to see the relationship between ideology (cultural codes) and subject (of ideology and of the unconscious) in the logic of symbolic production in the environment as determined by a particular mode of production.

Some signifier fragments function as "condensers" from which decondensation is possible through a network of meanings. These will be called "shifters." A set of readings could be regarded as a musical staff in which various signifiers are situated in a polyphonic organization with each voice at a different level of reading. Certain of these signifiers organize several different readings and allow for the intercrossing of codes and for the shifting from one to the next. These are the shifters; they are part of a process of exchange of codes. They are the conditions of the probability of producing different readings; they are structures of transition, the organizers of symbolic space. These connective, condensing structures are the key to the understanding of the complexity of the built environment as an infinite text. They are not concerned with signification but with the linking of signifiers. They are the key to an intertext where meanings are displaced, thereby forming a network in which the subject of the reading, the laws of the unconscious, and the historico-cultural determinants are articulated. The importance of this notion of shifter is that it accounts for the process of configuration and for the dynamic aspect of a configuration, rather than for objects and functions. It accounts for the symbolic aspect of exchange. It provides an insight into the problem of the mode of operation of ideology within the built world. It allows us to enter into a mechanism of production of sense that corresponds to an ideology of exchange.

If the system of architecture and of design, even when we play with it, is always closed within a game of commentaries of language—a metalingual game—it is interesting to speculate on the outcome of a similar "game" of *non-design*, a game of the built world. For non-design is a non-language, and by comparison with a language, it is madness since it is outside language, and thus outside society. This non-language, this non-sense constitutes an explosion of the established language in relation to a sense already established (by conventions and repressive rules). It is symbolic of the built world outside the rules of design and their internal "linguistic" games. It permits us finally to understand another logic which informs the significance of building.

**Theater**


*In front of the scene or in the scene*

*the pleasure of the gaze*

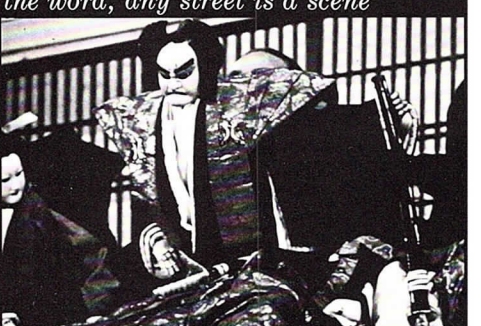
*decomposition*

*Cafe-Market*

*Cafe-Square*

*Cafe-Street*

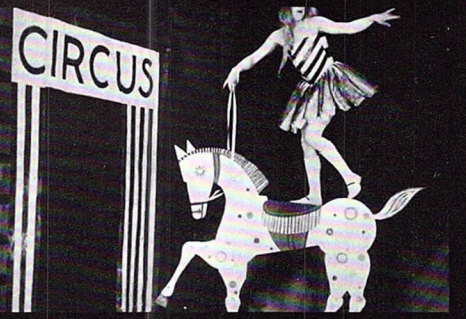
*the word, any street is a scene*



*against the unity of representation*

*the scenic gesture*

*stage-costume-sex-transvestism*

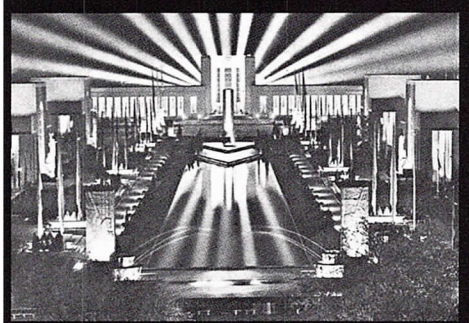



*composition*

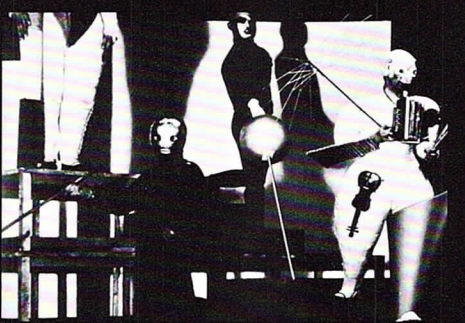
. . . .

*multiplication of the gesture*

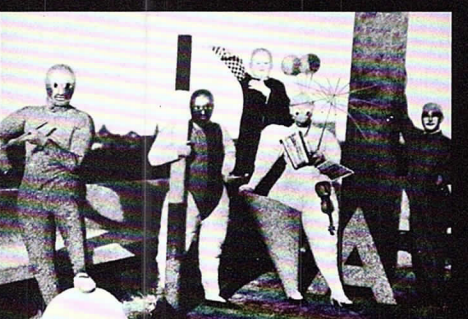

*objects as actors*



*façades as masks*

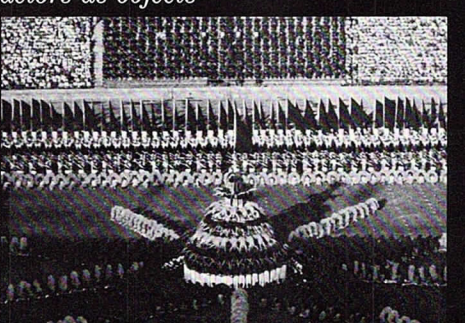


*actors as objects*



*mask-costume-ritual*

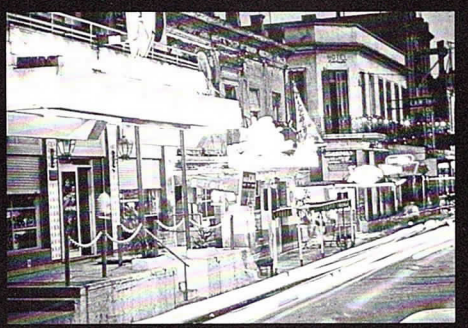
*space of action*



*space of spectacle*

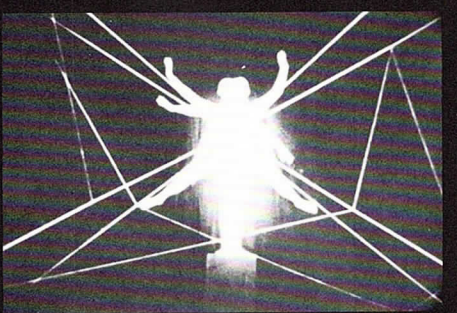

*people as spectacle, politics*

# Film



*motion*

*and change*



*tension and center*

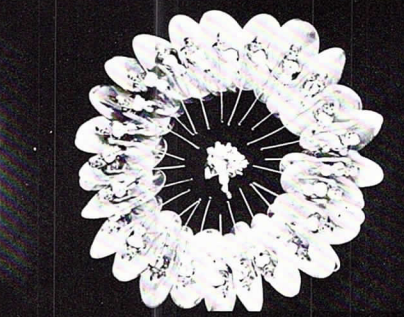
*unfolding of images in time*

*the narrative*

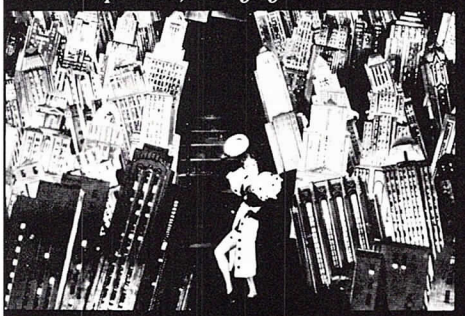
*light and montage*

*the unexpected, the gag*

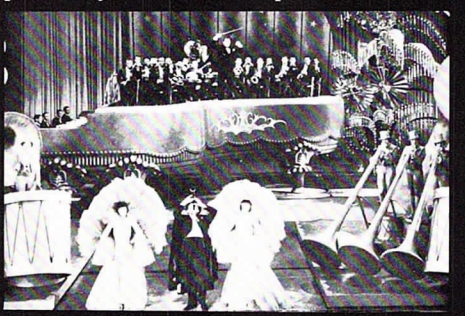
*points of view and suspense*



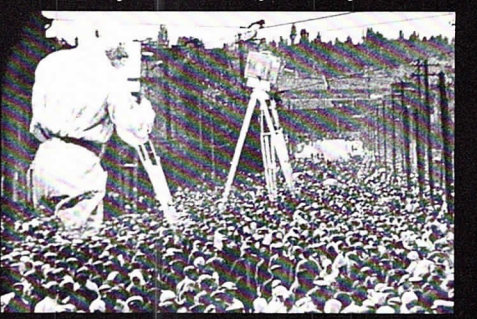
*and transformation of the object*



*between fiction and reality*



*scale inversions*



*a space of sense*

. . .

*the eye of culture*

*The outdoor part of the "cafe-terrace" establishes the relationship cafe/street and is organized in terms of the opposition sidewalk as passage or circulation/sidewalk as cafe; another element in the sidewalk-circulation is introduced; people link the first opposition with the second one. Some people walk in the sidewalk/street; some people sit in the sidewalk/cafe. People are distributed in a field of objects that may be distinguished as objects for use and objects for background. Buildings are objects and façades; the background is a continuous façade; the façade of the cafe stands out as a mediating element which because of its transparency creates a relationship between the exterior cafe or cafe/street and the interior cafe. The interior cafe repeats the same oppositions between people/objects and background/mirrors, which themselves now become mediators between exterior and interior in a reflection in which objects, sidewalk, people, street, and interior space are superimposed. . . .*

*The seats, which are distributed in rows and in which people are clustered, resembles a pit. This substitution produces a point of departure, from cafe/street to cafe/pit.*

$$\frac{\textit{Cafe seats}}{\text{Pit seats}} \times \frac{\text{Pit seats}}{\textit{Theater}}$$

$$\frac{\textit{Background plane cafe}}{\text{Background plane scene}} \times \frac{\text{Background plane scene}}{\textit{Theater}}$$

*New readings may be produced:*

The Gaze:
*The gaze from the cafe as pit transforms the street into a scene and sweeps through the codes both of the cafe and the theater. Codes organize the gaze: the people from whom and to whom they are directed—Observer/Observed; the places from where and to where they are directed—Public/Private; the desire which generates them—Voyeurism/Exhibitionism. In their interrelation, places configurate the gaze: frontal—oblique—sideview. Scene and pit are confused in a general scene where gaze and desire are structured and articulated together. The pleasure in the realization of desire is generated not only at the visual level but also at the level of language in action: that is, discourse.*

*Discourse within the "theater" is fragmented, dispersed among various actors and spectators, articulating itself without either dominating or subordinating, with the body in action, with the gesture.*

Gesture:
*Gesticulating bodies form a chain with clothes as a second skin, regulated by the gestures of fashion which play a role in the marking and disguising of sex differences. Cafe, the domain of men, is incorporated in the city as theater, articulated with fashion, the domain of women, as costume. The two together transform the visual codes, which link cafe/masculinity and fashion/femininity, thereby confounding them.*

*The gesture is not only that of a static pose, but the multiplied gesture of the body in movement, engaged in entries and exits from the scene.*

*Discourse and gesture configurate the scene; meanwhile, time and volume perforate the plane of decoration and configurate the space.*

The scene in the streets:
*The scene in the streets is in turn the explosion of the cafe/theater.*

The street as a scene of scenes:
*The street as a scene of scenes in turn projects into the cafe, opening it up to new paradigms and their codes.*

The system of cafes:
*Each cafe is not a cafe in itself but is part of a system of cafes, which speaks of its history, of its origins, of its transformations, thus establishing the paradigm of the cafe.*

The system of the fragments of public places:
*The cafe belongs to the paradigm of streets, plazas, monuments. In turn, each of these is not only physically*

*juxtaposed but also textually juxtaposed. This transforms these places into complex entities: cafe—square, cafe—market, cafe—street. The street is transformed into a new point of departure. We are again in the street, but now the street is a scene.*

Street:
*A* scene in movement. *The street is the scene of struggle, of consumption, the scene of scenes; it is infinitely continuous, unlimited in the motion of objects, of gazes, of gestures.*

*It is the* scene of history.

*It is a scene, but it is also what is* behind the scene, *what is not seen, or not allowed to be seen. When what is behind the scene is shown, it produces a demystifying effect, like that of exposing the reasons for the split between individual and social, between private and public.*

*The* façades *frame the street. They function as scenery or decoration and control the demystifying effect. The decoration may or may not correspond to the content of representation. This accentuates its mask-like character.*

People as decoration:
*Fashion transforms people into objects, linking street and theater through one aspect of their common ritual nature.*

Rituals:
*People meet at corners, people promenade, defining a ritual space, participating in ceremonies, and. . . .*

1. Accordingly, architecture itself must be approached as a particular form of cultural production—as a specific kind of overdetermined practice. 67
2. Jury Lotman, "Problèmes de la Typologie des Cultures," *Essays in Semiotics*, Kristeva-Reydevobe, ed. (The Hague: Mouton, 1972).
3. See Perouse de Montclos, *Etienne-Louis Boullée* (New York: George Braziller, Inc., 1974); Emil Kaufmann, *Architecture in the Age of Reason* (Cambridge, Mass.: Harvard University Press, 1955).
4. See Christian Metz, *Langage et Cinéma* (Paris: Klincksiek, 1971); Emilio Garroni, *Progetto di Semiotica* (Bari: Laterza, 1973).
5. Ibid.
6. Christian Metz, "Spécificité des Codes et/ou spécificité des langages," *Semiotica*, I, no. 4, 1969.
7. The role of specificity in maintaining the limits of architecture becomes evident, for example, in the development of the steel industry in the nineteenth century, which determined the development of its own independent techniques according to a reason and coherence of its own (exemplified in works of such architects as Eiffel and Paxton), while the world of architectural forces developed according to a logic neatly dissociated from technology. Such technical-formal developments are absorbed through symbolic mechanisms that incorporate the structural system as one of the expressive elements of the architectonic vocabulary. This prevents the fusion of architecture with engineering and its disappearance as an autonomous practice.
8. Heinrich Wölfflin, *Renaissance and Baroque* (Ithaca: Cornell University Press, 1966).
9. René Taylor, "Architecture and Magic: Considerations on the Idea of the Escorial," *Essays in the History of Architecture presented to Rudolf Wittkower*, Douglas Fraser, Howard Hibbard, and Milton J. Lewine, eds. (New York: Phaidon Publishers, Inc., 1967).
10. The notions of closing and opening would allow rethinking of certain aspects of design at the level of meaning in a manner more systematic and specific than the traditional historical analysis which looks for the explanation of the meaning of formal architectural structures in the sociocultural context in general and considers it as a problem of content.
11. Pierre Fontanier, *Les Figures du Discours* (1821) (Paris: Flammarion, 1968).
12. Roman Jakobson, *Studies on Child Language and Aphasia* (The Hague: Mouton, 1971).
13. This is developed by Mario Gandelsonas, "On Reading Architecture," *Progressive Architecture*, May 1972; idem., "Linguistics and Architecture," *Casabella*, 373, Feb. 1973.

14. I refer in this article to the Corbusier of *Towards a New Architecture* and *The City of Tomorrow*, although it is possible to say that there are several Le Corbusiers.
15. Le Corbusier, *The City of Tomorrow* (London: John Rodker, 1929).
16. Ibid.
17. Manfredo Tafuri, *Giovan Battista Piranesi; L'Architettura come "Utopia negativa"* (Turin: Accademia delle Scienze, 1972).
18. This articulation has, of course, always been present in architectural treatises from the Renaissance to Le Corbusier. But it is important here, however, to posit it in this functionalist context where the conception of culture is universalist, reductivist, and imperialistic.
19. Alison Smithson, ed., *Team 10 Primer* (Cambridge, Mass.: The MIT Press, 1968).
20. See Diana Agrest and Mario Gandelsonas, "Critical Remarks in Semiotics and Architecture," *Semiotica*, IX, v.3, 1973.
21. Diana Agrest, "Towards a Theory of Production of Sense in the Built Environment," (1968–1973), *On Streets*, Stanford Anderson, ed. (Cambridge, Mass.: The MIT Press, in print). Here I proposed considering the street as a signifying system.
22. Roland Barthes, *Sade/Fourier/Loyola* (Paris: Editions du Seuil, 1972).
See the following works on architectural typology: Garroni, *Progetto di Semiotica;* Giulio Argan, "Sul concetto delle tipologia architettonica," *Progetto e Destino*, Alberto Mondadori, ed. (1965); Aldo Rossi, *L'Architettura della Città* (Padua: Marsilio Editori, 1966); Alan Colquhoun, "Typology and Design Method," *Meaning in Architecture*, Charles Jencks and George Baird, eds. (New York: George Braziller, Inc., 1970), pp. 267–277.
23. See J. J. Goux, *Economie et Symbolique* (Paris: Editions du Seuil, 1973).
24. Roland Barthes, *S/Z* (Paris: Editions du Seuil, 1970).
25. An important difference between the reading of design and non-design is the existence or non-existence of a written text. In the case of design one may reconstruct a discourse in such a way as to illuminate its meaning by a previous reading. When we read Le Corbusier, we reconstruct a reading made by him. In the case of non-design, however, we must put ourselves in the position of direct reading.
26. Tafuri, *Giovan Battista Piranesi.*
27. S. M. Eisenstein, "Piranesi e la fluidità delle forme," *Rassegna Sovietica*, 1–2, 1972.
28. Manfredo Tafuri, "Piranesi, Eisenstein e la dialettica," *Rassegna Sovietica*, 1–2, 1972.
29. Roland Barthes, *The Pleasure of the Text* (New York: Hill and Wang, 1975), p. 49.
30. These nodes, thought of as referents to non-design, permit a more precise formulation of its meaning and distinguish it from the term "place" with which we designate the signifying structure.
31. The notion of shifter or indexical sign has been developed by Roman Jakobson in "Les Catégories verbales et le verbe Russe," *Essais de Linguistique Générale* (Paris: Editions Minuit). This notion has been also used by Lacan, and Barthes applied it in somewhat transformed form in *Système de la Mode* (Paris: Editions du Seuil, 1967) to describe those elements which allow the articulation between two different kinds of systems, written and graphic. The shifter should not be mistaken as being in itself possessed of "double meaning," a notion which has become almost classical in architecture. It does not refer to language. Double meaning, on the contrary, refers to the issue of content, to the problem of ambiguity in relation to language and to metaphor. While the shifter accounts for the chaining of fragments, double meaning refers to a totality with different meanings. There is no chaining and no process involved in this notion.
32. Sigmund Freud, *Interpretation of Dreams* (London: G. Allen & Unwin, Ltd., 1961); idem., *Psychopathology of Everyday Life* (New York: Norton, 1966).

Figure Credits
1–6. *Visionary Architects: Boullée, Ledoux, Lequeu* (Houston, Texas: University of St. Thomas, 1968).
7–9. Douglas Fraser, Howard Hibbard, Milton J. Lewine, eds. *Essays in the History of Architecture presented to Rudolf Wittkower* (London and New York: Phaidon Press Ltd., 1967).
10–14. Le Corbusier, *Towards a New Architecture* (New York, Washington: Praeger Publishers, Inc., 1960).
15–17. Le Corbusier, *The Radiant City* (New York: The Orion Press, 1964).
18, 27–29. Manfredo Tafuri, *Giovan Battista Piranesi: L'Architettura come "Utopia Negativa"* (Turin: Accademia delle Scienza, 1972).
19, 21, 25. Alison Smithson, ed., *Team 10 Primer* (Cambridge, Mass.: The MIT Press, 1968). Fig. 21 redrawn by Jane Carolan.
20, 31, 33, 34. Courtesy of Diana Agrest.
22–24. Alison and Peter Smithson, *Ordinariness and Light* (Cambridge, Mass.: The MIT Press, 1970).
26. Sergei Eisenstein, *The Film Sense* (New York: Harcourt, Brace and World, 1942).
30, 32. Roseline Bacou, *Piranese, Gravures et Dessins* (Paris: Editions du Chene, 1974).
Pages 60–63. Illustrations courtesy of Diana Agrest.

# Symmetry: Man's Conceptualization of the Universe

William S. Huff

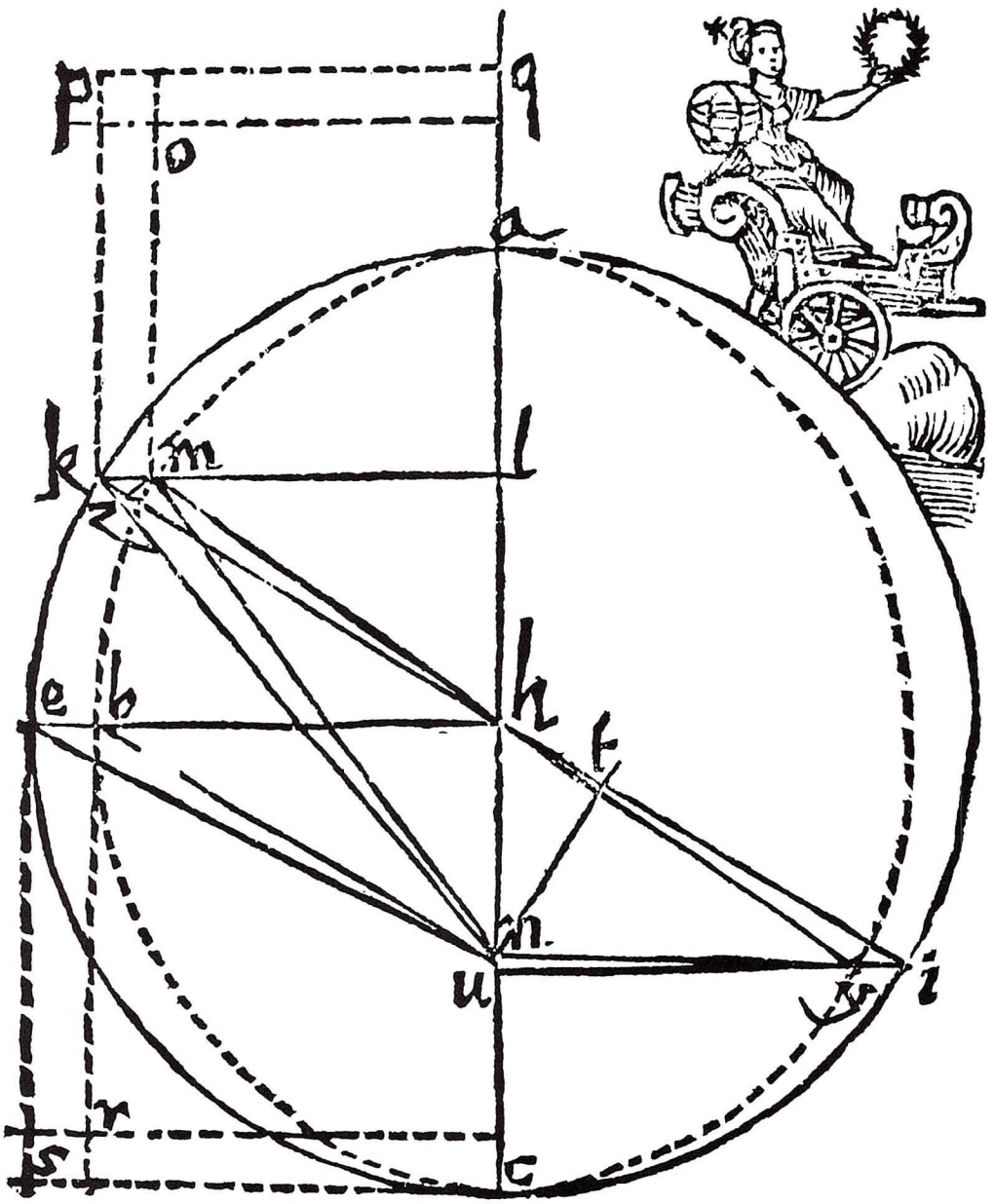


With Symmetry 4 we present a second facsimile reproduction from William Huff's series on *Symmetry: an Appreciation of Its Presence in Man's Consciousness*. In "Man's Conceptualization of the Universe," Huff explores the role of the notion of symmetry in the generation of the extraordinary imagery created in the process of building models to explain the structure and the functioning of the universe. Furthermore, the article suggests the reason for the fascinating effect of these powerful images on architecture of all ages.

At certain points in their respective developments, the architect and the astronomer though dealing with a different problem—the creation of an artificial world versus the explanation of the natural one—work with similar parameters with formal equivalences in space, with the establishment of a visual order. These similarities explain why architects and astronomers shared the use of symmetry for the syntactic organization of their respective models, therefore establishing the ground for a symbolic exchange of which the dome—as a metaphor of the skies, as part of a microcosm representing a macrocosm—is perhaps one of the most suggestive examples.
MG

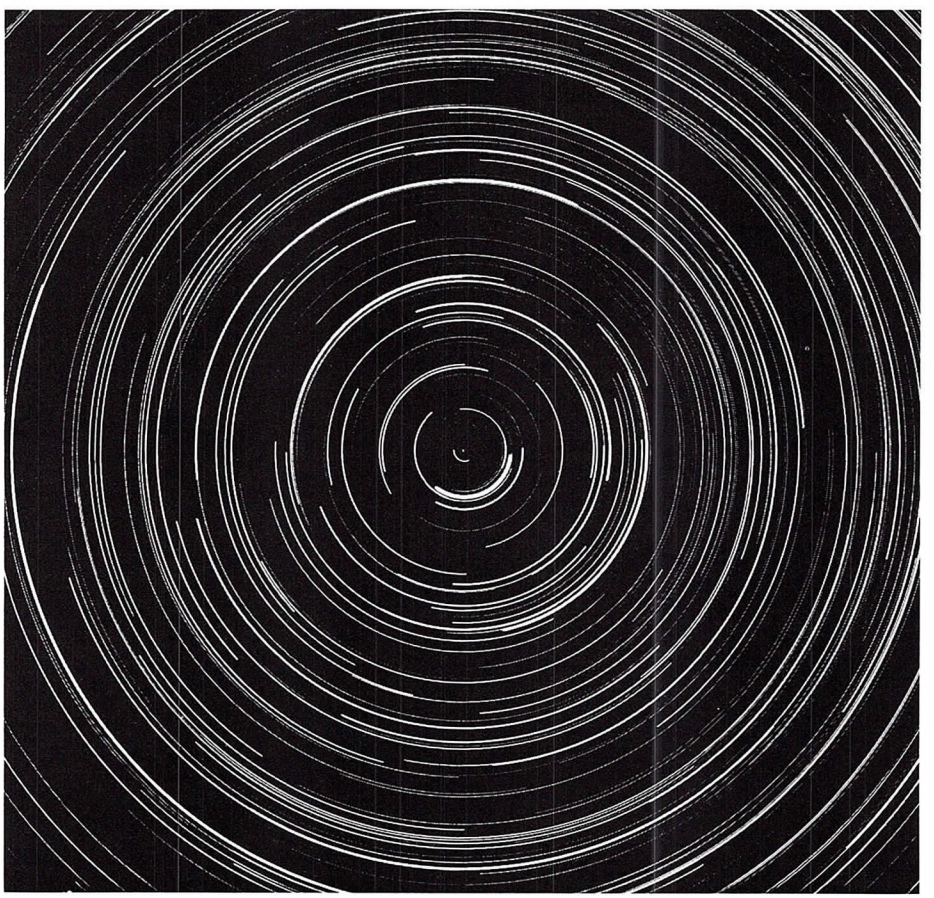
William S. Huff was born in Pittsburgh, Pennsylvania, in 1927 and graduated from Yale University in 1952. He was awarded a Fulbright Fellowship in 1956 to the Hochschule für Gestaltung, Ulm, where he became a permanent guest teacher from 1963–1968. During 1958–1960 he worked in Louis I. Kahn's office in Philadelphia. From 1960–1966 he was also Assistant Professor of Architecture at Carnegie-Mellon University becoming Associate Professor during 1966–1972. He is presently Associate Professor, since 1974, at the State University of New York at Buffalo. His design projects include the G. A. Steiner Museum for Indian Baskets, Portersville, Pa., built in 1968. His written works include: "The Hochschule für Gestaltung Ulm-Donau" (1957); "Richardson's Jail" (1958); "An Argument for Basic Design" (1965); "The Computer and Programmed Design: A Potential Tool for Teaching" (1967); "On the Syntactic Aspect of Design for Beginning Students" (1970); *Symmetry: an Appreciation of Its Presence in Man's Consciousness*. Part 4, "Man's Conceptualization of the Universe" (1967); Part 6, "Man's Aesthetic Response/Man's Contemplation on Himself" (1970); Part 5, "Man's Observation of the Natural Environment" (1971); Part 2, "The Six Isomorphic Coverage Operations" (1975).

*This facsimile reproduction has been taken from* Symmetry 4. *The graphic design is by Tomás Gonda.*




4.2

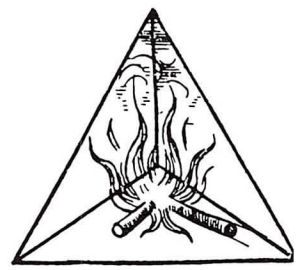
One of man's very ancient
and most cherished of beliefs
was that of the perfection
and immutability of the heavens.

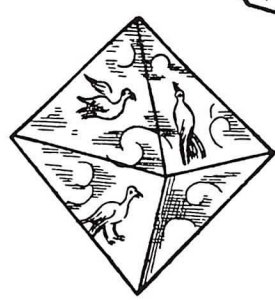


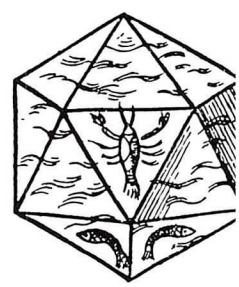
4.3

Plato writes of the creation:
*God made the world one whole,*
*having every part entire and being, therefore, perfect*
*he gave to the world the figure which was suitable and also natural;*
*wherefore he made it in the form of a globe,*
*the most perfect and the most like itself of all figures;*
*for he considered that the like is infinitely fairer than the unlike.*
*And in the center he put the soul, which he diffused throughout the body;*
*one and solitary, yet by reason of its excellence able to converse with itself,*
*and needing no other friendship or acquaintance.*
*Having these purposes in view,*
*he created the world a blessed god.*

Plato also claimed the pentagonal dodecahedron,
one of the five perfect polyhedra, as a model for God's delineation of the universe.
The other four he ascribed to the atomic structures of the four Elements:
the cube to Earth,
the tetrahedron to Fire,
the octahedron to Air,
the icosahedron to Water.



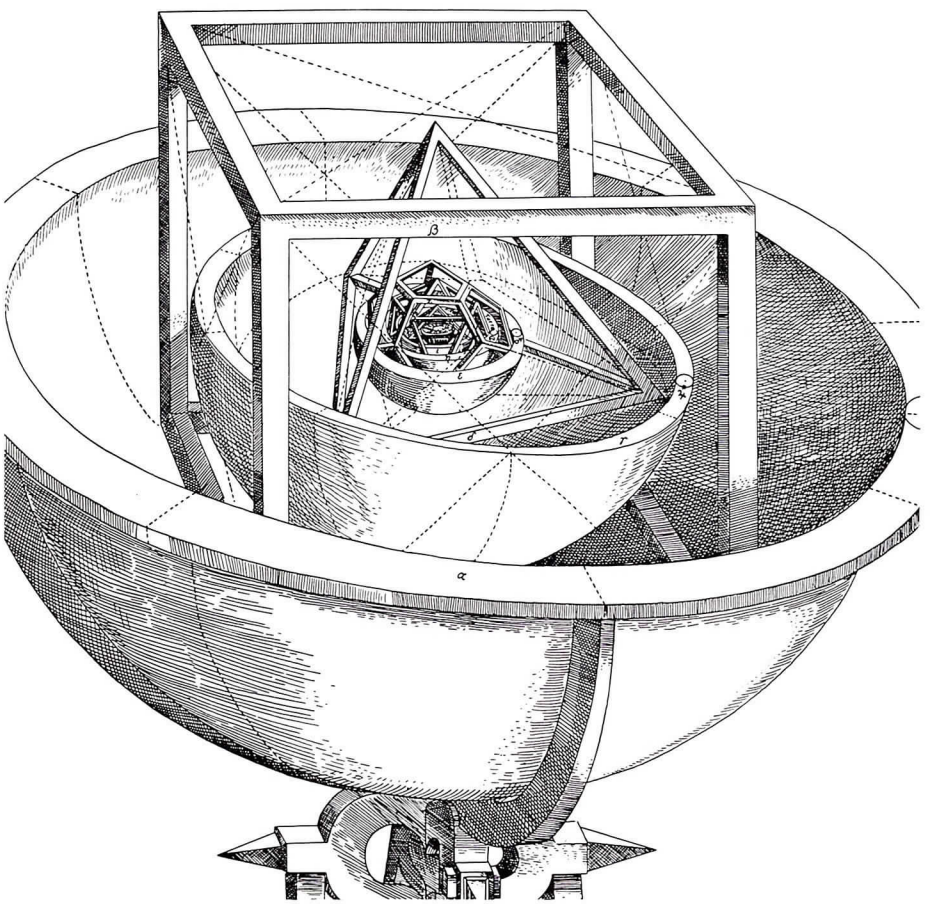


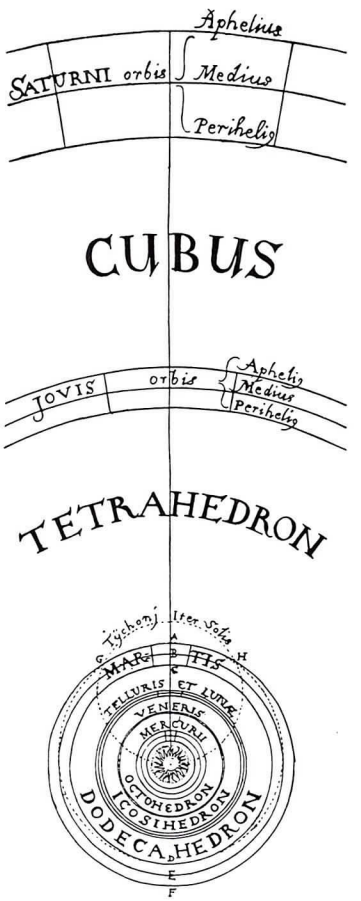


4.4

Throughout his lifetime of writings,
Kepler, in Platonic dialogue, posed a series
of questions, which were essentially two,
concerning the nature of the solar system:
Firstly, on the planetary spacings,
*How are the planets divided among themselves*
*and how many planets are to be considered*
*in the doctrine on schemeta?*
*How great are the intervals between*
*the single spheres*
*and what is the cause of the planetary intervals?*
Secondly, on the planetary movements,
*How many and of what sort are the movements*
*of the planets?*
*How does a planet complete its circuit*
*and is meanwhile attached and repelled?*

In answering the first question, Kepler found
an even more elegant, if not more curious,
application for the fascinating Platonic bodies:
"So there existed only five perfect solids—
and five intervals between the six planets!
It was impossible to believe that this should be
by chance, and not by divine arrangement.
It provided the complete answer to the question
why there were just six planets
*and not twenty or a hundred.*
And it also answered the question
why the distances between the orbits were
as they were.
They had been spaced in such a manner
that the solids could be exactly fitted into
the intervals, as an invisible skeleton or frame.
And lo, they fitted!
Or at least they seemed to fit,
more or less.
Eureka!
the mystery of the universe was solved by young
Kepler, teacher at the Protestant School in
Gratz."

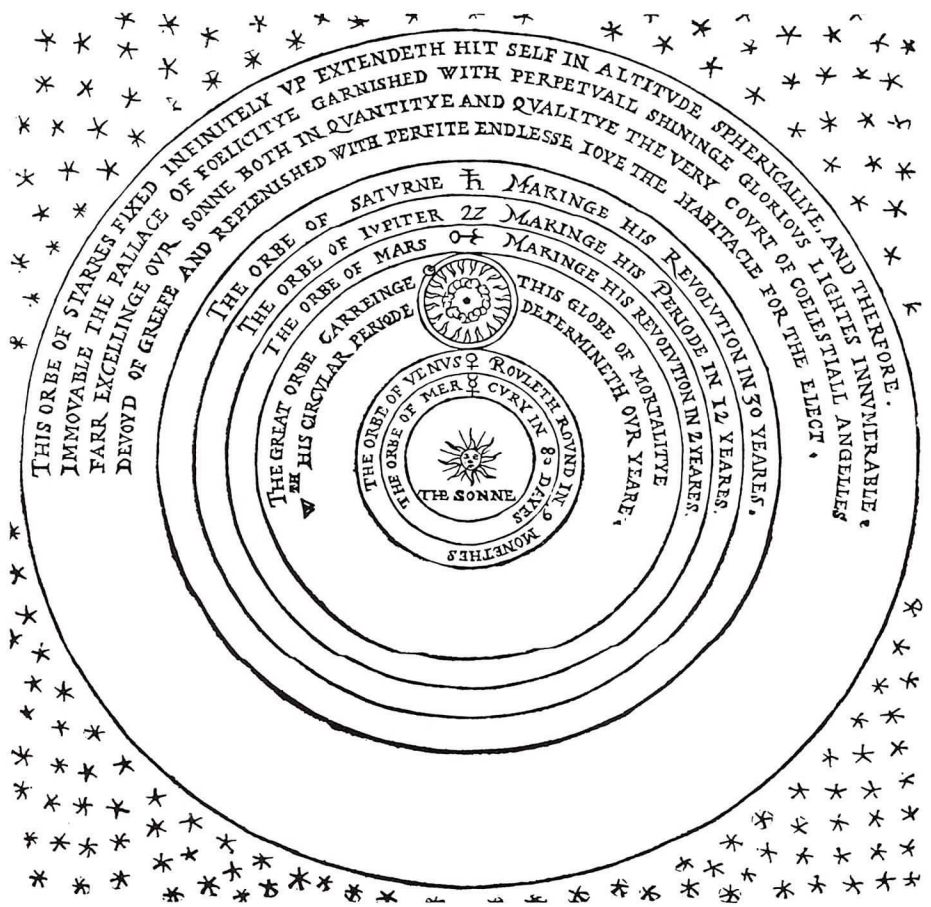




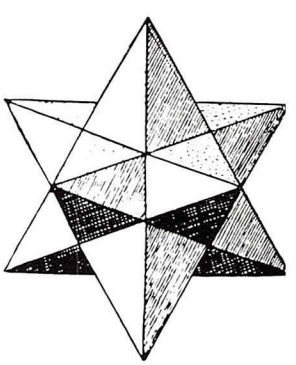

4.5

The answer to his second quest did not spring upon him in a similar burst of intuition but required years of extraordinary labors with complicated mathematical calculations.

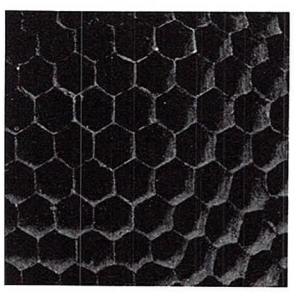
Copernicus, reiterating a concept of the ancient Greeks, replaced the Earth-centered universe of Ptolemy with a helio-centric system. Though he knew from ancient observations that the planets were sometimes nearer the sun, sometimes farther and that they moved sometimes faster, sometimes slower, he insisted that the planets traveled with uniform motions and in circles in deference to the perfect pattern of the heavens and explained their seemingly irregular behavior by a system of *epicycles* —circles rotating on circular paths.

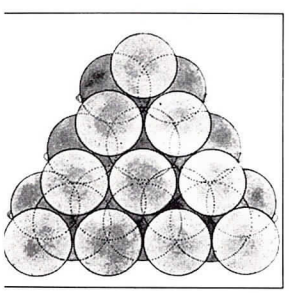


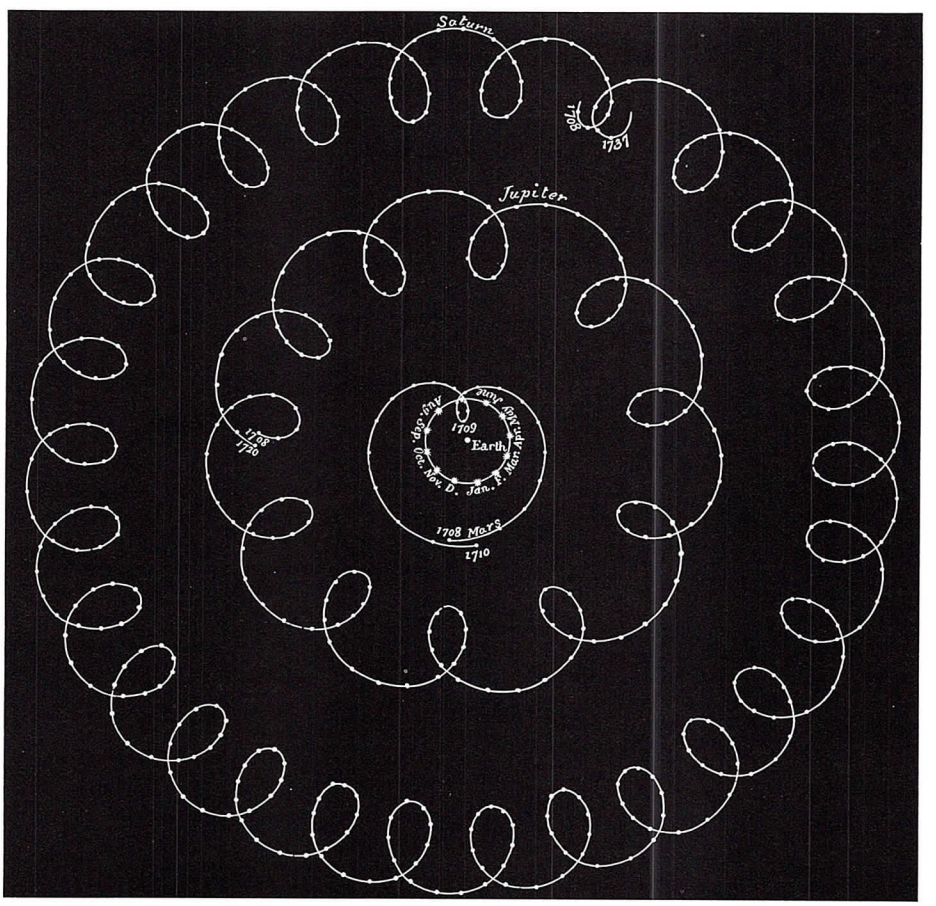




Such complications did not satisfy Kepler,
a man who persistently sought simplicity in
order:
in the honeybee comb, the snowflake,
and the stacking of cannon balls.





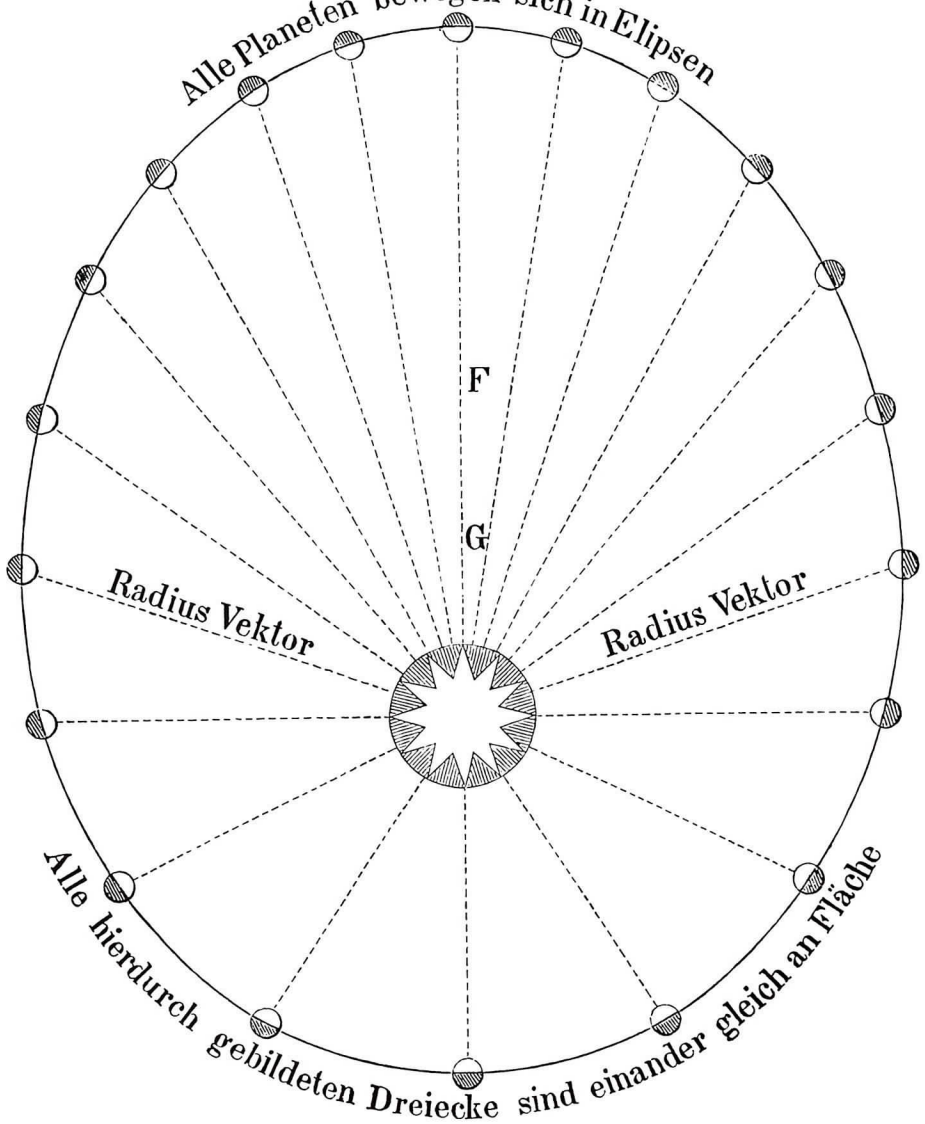



4.7

In his six year battle with Mars,
Kepler discovered first:
that the velocities of the planets quickened
in proportion to their nearness to the sun
and slowed as they distanced from it,
sweeping out equal areas of space in equal time
as they proceeded;
and subsequently:
that the planets moved along elliptical paths
with the sun positioned at one of the foci.

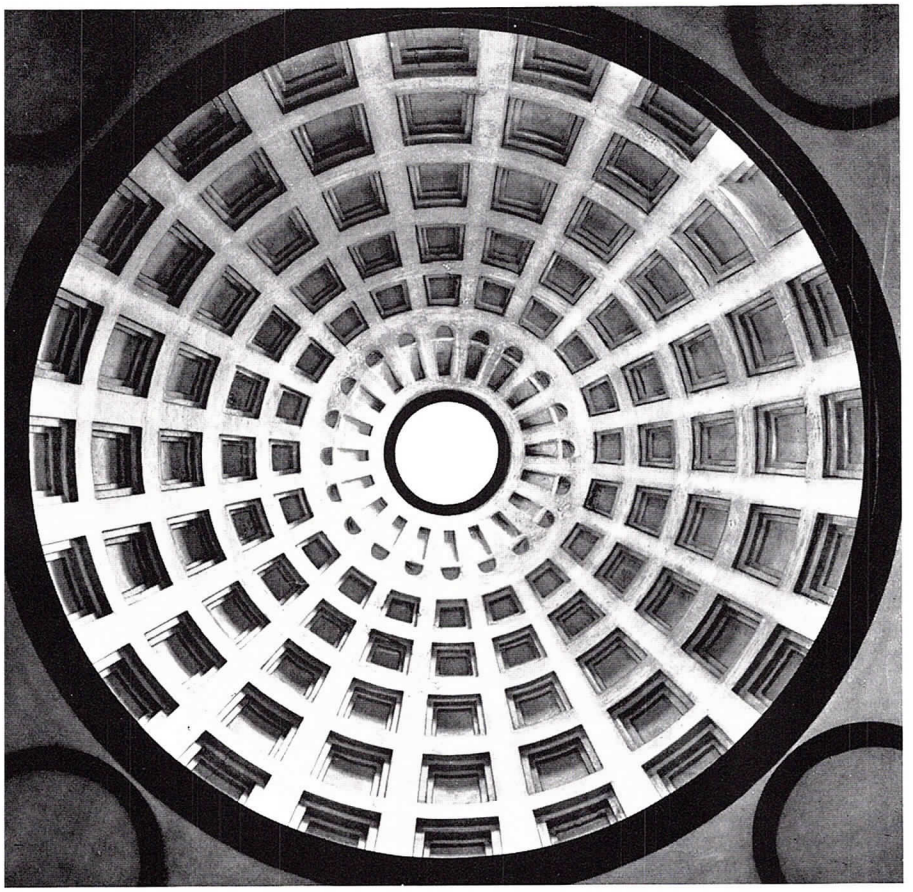
*Why should I mince my words?*
*The truth of Nature,*
*which I had rejected and chased away,*
*returned by stealth through the backdoor,*
*disguising itself to be accepted.*
*I thought and searched, until I went nearly mad,*
*for a reason why the planet preferred*
*an elliptical orbit to mine.*
*Ah, what a foolish bird I have been!*

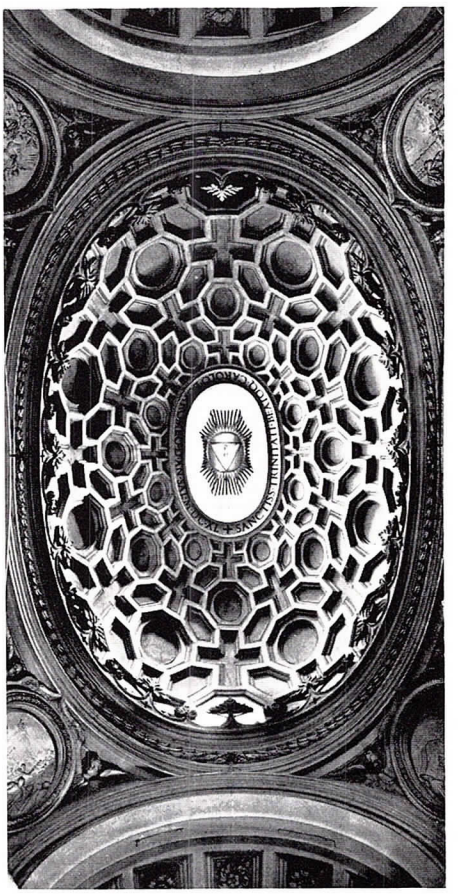
Thus, Kepler, lover of perfection,
on the one hand, gave us a useless model
of a solar system of which he had only
fragmentary knowledge—the asteroids,
filling the space between Jupiter and Mars,
and three new outer planets being
discovered over the next three hundred years;
on the other hand, he dethroned the circle,
with its perfect and infinite symmetry,
in favor of the ellipse—
a curve of a far lower degree of symmetry,
but a curve that belongs to a universe
of a dynamic rather than of a static nature.




4.8

ıe dome of heaven had been transformed.

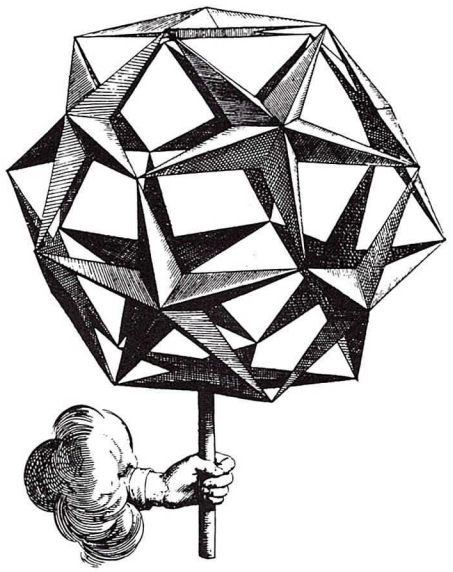


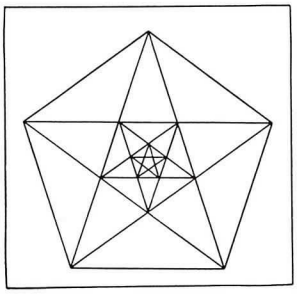


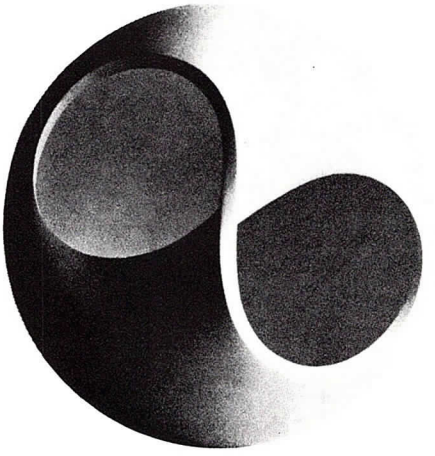
4.9

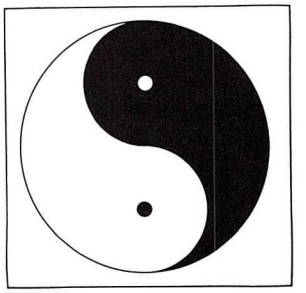
*Nothing can be beautiful which is like an imperfect thing*
in the Platonic universe,
delineated in terms
of the dodecahedron
with the golden section
locked in the pentagrams
of its five sided faces.
It is a world of extremes,
of opposites, of absolutes,
—from zero to infinity.
Good is existence itself;
and evil, non-existence.

The Taoists conceived a universe
in which the whole is divided into two parts
—coexistent forces, interacting in flux
with coequal potencies
—of positive-negative, of good-bad,
of light-dark, of order-chaos combinations.
The seed of each force is generated
in its counterparts, with each destined
to consume the other.
The yin and the yang are not mirror opposites,
but two similar figures
inverted in position and color
—perhaps the modern cosmic diagram.









4.12

*The page numbers in these notes refer to the page numbers of the facsimile.*

*Page 4.5 illustrations should read* "Kepler's *invisible space frame* of Platonic Solids, defining the spacing between the planets."



lato (née Aristoclese), 427-347
.C., b. d. Athens (lived roughly
etween the Periclean and Alex-
ndrian Ages).
*om* Culver Pictures, Inc., N.Y.

licolaus Copernicus, 1473-1543,
. Torun (Thorn), Prussian Poland,
. Frauenburg, Prussia.
*om* Culver Pictures, Inc., N.Y.

ohannes Kepler, 1571-1630,
. Weil-der-Stadt, Württemberg,
. Ratisbon (Regensburg), Bavaria.
*om* Culver Pictures, Inc., N.Y.

Page 4.2 *illustration*
Kepler's triumphant sketch, celebrating his victory over Mars upon determining its orbit to be in ellipse.
*from* Joanne Keplero, *Astronomia Nova, sev Physica Coelestis* (Pragae: 1609) Cap. LIX, p. 289 (i.e. 286).

Page 4.3 *illustration*
Time exposure of stars with a fixed camera as the Earth revolves on its axis for eight hours.
*photograph by* Lick Observatory, University of California, Mt. Hamilton.

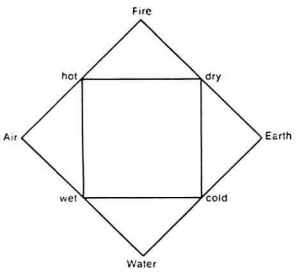
Page 4.4 *illustrations*
The *ancient of days striking the first circle of earth.*
*from* The Burlington Fine Arts Club, *Blake Centenary Exhibition* (London: 1927) illus. 70, pl. XLIV.

The Platonic Solids in connection with the Creation and the Four Elements.
*from* Ioannis Keppleri, *Harmonices Mundi* (Munich: C. H. Beck'sche Verlagsbuchhandlung, 1940) Liber II—(facsimile of ed. of Francofurti: 1619).

Page 4.4 *notes*
*God made the world . . .:*
"Timaeus," *The Dialogues of Plato* trans. B. Jowett (New York: Random House, 1937) Vol. II, pp. 15-16, (section 33-34).

Concerning Plato's writing on the perfect bodies: *ibid.* pp. 33-37, (section 53-57).
*There was yet a fifth combination* (the dodecahedron) *which God used in the delineation of the universe.*

Three of the *Platonic Solids* were known to the Egyptians: the tetrahedron, the hexahedron (cube), the octahedron. The discovery of two is attributed to the Pythagoreans: the dodecahedron, the icosahedron. They bear Plato's name due to his frequent employment of them to explain natural phenomena.




The relationship of the Four Elements to the Four Qualities.
*redrawn after:* Aaron J. Ihde, *The Development of Modern Chemistry* (New York: Harper & Row, 1964) p. 10, fig. 1.3.

Page 4.5 *illustrations*
Kepler's *invisible space frame* of Platonic Solids in connection with the Creation and the Four Elements.
*from* Ioannis Kepleri, *Mysterium Cosmographicum* (Munich: C. H. Beck'sche Verlagsbuchhandlung, 1963)—(facsimile of ed. of Francofurti: 1621).

Kepler's diagram of the planet's orbits spaced by the five regular solids. Note his accession of Tycho Brahe's hybrid system which had the Sun rotating around the Earth, while the other planets rotated around the Sun. That Kepler published his diagram in 1619, along with his Third Law, in *Harmonices Mundi* and that he added the three dimensional representation of the system in his 1621 edition of *Mysterium Cosmographicum* (orig. pub. 1597) shows his continued. tenacious adherence to this mystical notion, despite his truly revolutionary discoveries—especially that of the planets' elliptical orbits.
*from* Ioannis Keppleri, *Harmonices Mundi* (Munich: C. H. Beck'sche Verlagsbuchhandlung, 1940) Liber V, plate I—(facsimile of ed. of Francofurti: 1619).

Page 4.5 *notes*
*How are the planets divided . . .:*
Johannes Kepler, "Epitome of Copernican Astronomy," Book IV, *Great Books of the Western World* (Chicago: Encyclopedia Britannica, Inc., 1952) Vol XVI, pp. 860-862, p. 939.

"So there existed . . .": Writing in mock Keplerian style, Koestler recreates Kepler's thinking, as expounded in *Mysterium Cosmographicum.*
Arthur Koestler, "The Watershed," *The Sleepwalkers* (New York: Macmillan, 1959) pp. 250-251.

*and not twenty or a hundred:*
A quotation from Kepler's *Mysterium Cosmographicum.*

Kepler, whose main interest was mathematics, only reluctantly accepted a combined chair of mathematics and astronomy at Gratz, Austria. Mathematics was his love; but astronomy was not a science at all, for it was, in the main, astrology, a degraded philosophy, even for the mystical Kepler. Ironically, this man who shied from a calling to astronomy, subsequently put it on a solid foundation with his discovery of the first three natural laws of the universe.

Weiszacker's vortices: a modern (1945) concept of the formation and spacing of the planets, which amass between the boundaries of a system of vortices and rotate in

*Page 4.6 illustrations*
*3rd paragraph:* "and eight-pointed star" *should read* "an eight-pointed star."



the opposite direction.
*from* Camille Flammarion, *The Flammarion Book of Astronomy* (dist. New York: by Simon & Schuster, 1964) p. 75—trans. from *Astronomie Populaire* (Paris: Flammarion et cie, 1880).

Page 4.6 *illustrations*
The Copernican universe, depicted by Thomas Digges in 1576.
*from* the Picture Collection, New York City Public Library.

The pre-Copernican Universe.
*from* Petrus Apianus (Peter Apian) *Cosmographia, sive Descriptio Universi Orbis* (Antverpiae: 1584) Primo Pars, p. 6.

Kepler's Stella Octangula: and eight-pointed star formed by two intersecting tetrahedra.
*from* Ioannis Keppleri, *Harmonices Mundi* (Munich: C. H. Beck'sche, 1940) Liber II—(facsimile of ed. of Francofurti: 1619).

Page 4.6 *notes*
The pre-Copernican universe: From the distant antiquity came the belief of a universe with the Earth (a flat disc) at the center, ringed with concentric layers of Sun, Moon, and stars, also of fire and water. The Pythagoreans were the first to envisage the Earth as a ball. Plato suggested that God (light), radiated from the center of the universe, but Aristotle put the Diety at the periphery and returned the Earth to the center with the Sun, Moon and stars between. About 350 B.C. Heraclides conjectured the spin of the Earth, but its implications were ignored. It is Aristarchus who is credited with projecting the pre-Copernican, Copernican universe about 290 B.C. by revolving the planets and Earth around the Sun and the Moon around the Earth; but his scheme was met with the opposition accorded heresy. The Aristotelian system was favored and further refined by Ptolemy (Claudius Ptolemaeus, Alexandrian astronomer of the 2nd cent. A.D.) with the devices of a *deferent* and *epicycles*. St. Thomas Aquinas incorporated the *Ptolemaic system* into his *Summa Theologica,* virtually raising it to an article of faith during the Middle Ages and for centuries to come.

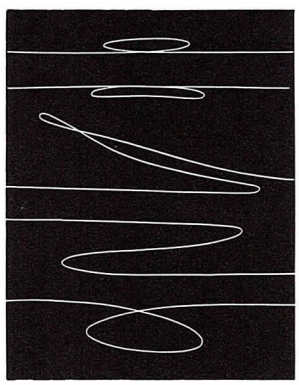
The Copernican universe: In 1616 the Catholic Church forbad the reading or teaching of Copernicus' (1543) *De Revolutionibus Orbium Coelestium*. Prior to this, the Church not only tolerated it but even displayed interest in the concept; and it was Luther, followed by Calvin, who first attacked it on theological grounds. Kepler heard of it as a student of theology at the University of Tübingen and published a defense of it in his *Prodromus* (1596). Again, it is thought that Kepler's interest stems in part, at least, from Platonic thinking which preferred to center in the universe the Generator of Light and of Life.

Page 4.7 *illustrations*
A comb of the paper wasp.
*photograph by* Tomás Gonda.

An 18th century representation of a snowflake, displaying a low degree of observation and a high degree of fantasy.
*from* M. Diderot, *Les Sciences, les Arts Liberaux, et les Arts Mechaniques, avec leur Explication* (Paris: 1767) Vol. V of Plates, *Physique pl. 2.*

Instructions for cannon ball stacking.
*from* Courtlandt Canby, "A History of Weaponry," *The New Illustrated Library of Science and Invention* (New York: Hawthorn Books, 1963) Vol. 4, p. 66, illus. III.

The paths of Saturn, Jupiter, Mars, and the Sun describing epicycles around Earth, were Earth fixed at the center of the universe. It was observed from antiquity that the planets moved eastward in a fitful manner, occasionally looping backwards to the west before returning to their eastward journeys. Though unlike this 18th cent. flight of fancy Copernicus had two centuries before centered his universe with the Sun, not the Earth, he nonetheless resorted to epicyclic movements to explain the planets' apparent erratic deviations from pure, circular orbits.
*from* Richard Proctor, *Old and New Astronomy* (London: Longmans, Green & Co., 1892) p. 167, fig. 115.



Some loops, mapped in the late 19th century as the planets traversed the sky. From top to bottom: a loop of Saturn, of Jupiter, Mars, Venus, and of Mercury.
*from* ibid., p. 158, fig. 109.

Page 4.7 *notes*
Much in the manner he questioned *why there were only six planets,* Kepler also questioned *why the snowflake had six corners*. While the former question was falsely posed and should rather have asked *whether there wasn't a seventh,* the latter is considered to have novel and significant scientific meaning, even though Kepler had to admit not to have found the answer. His brilliant essay, *A New Year's Gift,* on the snowflake included at least two other remarkable investigations.
On close-packing: *Kepler's essay provides the first published evidence of the ideas of regular arrangements and close-packing* (in three dimensional space) *which have proved fundamental to crystallography.* (Lancelot Law Whyte, "Foreword" to *The Six-Cornered Snowflake,* p. v.) Kepler's investigation of close-packing was not, however, definitive.
On the honeycomb: *Kepler had deduced from the space-filling symmetry of the honeycomb that the angles must be those of the rhombic dodecahedron. But Kepler's discovery passed unnoticed, and Maraldi has the credit.* (D'Arcy W. Thompson, *On Growth and Form,* Vol. II, p. 528.) Johannes Kepler, *The Six-Cornered Snowflake,* trans. Colin Hardie with Foreword and Essay by Lancelot Law Whyte (Oxford Press, 1966)—(orig. ed., Ioannis Kepleris, *Strena, sev de Nive Sexangula,* Francofurti: 1611).

Page 4.8 *illustration*
Kepler's First and Second Laws on the movements of the planets.
*from* The Bettmann Archives.

Page 4.8 *notes*
The Mars calculations ran from 1600 to 1606 (without the assistance of logarithms), but were not published until 1609 in *Astronomia Nova.*

Kepler's Third Law, *The square of the time of revolution of each planet is proportional to the cube of its mean distance from the sun,* was discovered in 1618 and published in *Harmonices Mundi,* Liber V, 1619. This Law concerns the relationship of the velocity of modern satellites with their distance from Earth, as well as the planets and the Sun, or the Moon and the Earth. The unusual combination of a factor to the 2nd power with a factor to the 3rd power suggests that this discovery was a consequence of Kepler's unflagging Pythagoreanism.

*Why should I mince my words?* . . : A quotation from Kepler's *Astronomia Nova,* IV, Cap. 58. Arthur Koestler, "The Watershed," *The Sleepwalkers* (New York: Macmillan, 1959) p. 333.

The discovery of the outer planets and the asteroids: Uranus in 1781; asteroids, Ceres in 1801, Pallas in 1802, Juno in 1804, Vesta in 1807, Astrea in 1845; Neptune in 1846; Pluto in 1930.

The ellipse is said to have a symmetry of *order 4*: two mirror axes (vertical and horizontal) and a two-fold rotor.

Page 4.9 *illustrations*
Dome of Michaelangelo's Medici Chapel, 1523-1529, Florence.
*from collection of* Alinari-Art Reference Bureau.

Dome of Borromini's San Carlo alle Quattro Fontane, 1634-1641, Rome.
*from collection of* Alinari-Art Reference Bureau.

Page 4.10 *illustrations*
Gamow's 4-d apple: a model of a concept of a hypersphere. Two apples, "put through one another," are joined along their outer surfaces. Each apple has a separate labyrinth of worm passages, wherein the two systems connect with each other only at the common surface. This is analagous to the superimposition of 2-d planar projections of the two hemispheres of the globe upon one another. An airplane, starting at New York, must travel to the rim of the one disc in order to connect with Moscow on the other disc, even though the projections have it appear that the two cities lie in closer proximity to one another.
*from* George Gamow, *One Two Three. . . . . Infinity* (New York: Viking Press, 1948) p. 54, fig. 18 (Illustrated by author).

The spiral path of an electron in the magnetic field of a 15-inch bubble chamber.
*photograph by* Lawrence Radiation Laboratory, University of California, Berkeley.

Page 4.10 *notes*
*animal:* "Timaeus," *The Dialogues of Plato,* trans. B. Jowett (New York: Random House, 1937) Vol. II, p. 15 (section 33).

*its extremes in every direction: ibid.* p. 16 (section 33).

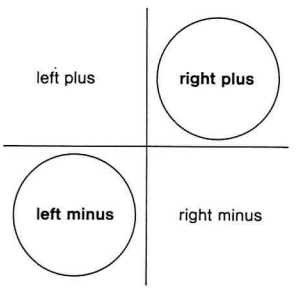
The Conservation of Matter-Energy, the first law of thermodynamics: *Energy can neither be created nor destroyed.* Since Einstein ($E=Mc^2$), Matter has been equated with Energy.

According to the *Law of Parity:* Objects which are mirror images of each other must obey the same physical laws. A particle, then, such as a mu meson should shoot out an equal number of electrons in both directions along its axis of spin as it disintegrates. Actually, it was found that the mu meson shot out twice as many electrons in one direction as it did in the other. If the spin were reversed, it would favor the opposite direction. *Sense* was, consequently, found to be preserved, as with a screw, and the mirror-twin eliminated as a likely constituent of this world we know.

Cheng Ning Yang, 1922-
b. Hofei, Anhwei province, China.
Tsung Dao Lee, 1926-
b. Shanghai, China.
Yang and Lee shared the Nobel Prize in Physics in 1957.

*Sense* or *handedness:* a planar object that possesses no bilateral symmetry is readily recognized for its handed quality, as long as it remains in the plane. But a flat right-handed object can be transformed into a left-handed object merely by rotating it 180° out of the plane. In 3-d space, then, the *handedness* of an object is described by its *screw* tendency.

Page 4.11 *illustrations*




The four nebulae represent the four combinatorial possibilities: right-plus (our world), left-plus, right-minus, left-minus. It is conjectured that the left-minus world is the only one of the three other worlds that is compatible with the laws of the right-plus world and that the other two worlds could, therefore, not exist.
Spiral nebula in Ursa Major.
200-inch *photograph by* Mount Wilson and Palomar Observatories.

A right and a left-handed white whirl (positive) and a right and left-handed black whirl (negative) reflect one another across vertical and horizontal axes. Each has the same *sense* as does each of the four nebulae of the companion illustration. The upper right and the lower left mesh into a unified *yin-yang* emblem. (Two such mirrors preserve *sense* and produce a two-fold rotation.)

Page 4.12 *illustrations*
A stellar dodecahedron, symbolic of the Classical Western concept of the universe.
*from* The Percier and Fontaine Collection, Burnham Library, Art Institute of Chicago.

Pentagrams in pentagons, displaying many Golden Section relationships, served as a secret emblem for the Pythagoreans.
*redrawn after a figure from* Matila Ghyka, *The Geometry of Art and Life* (New York: Sheed & Ward, 1946) p. 15, fig. 14.

A sphere with a non-orientable surface, i.e. having the continuous one-sided quality of the Moebius band.
*photograph by* Wolfgang Siol of a student work in basic design. Hochschule für Gestaltung, Ulm, 1956.

The *T'ai-chi tu,* a Taoist emblem, established during the Sung dynasty (11th-12th cent. A.D.), symbolizes the *yin-and-yang* principle.
*By being opposites, the two principles generate the phenomena of Nature. They are not separate from each other, nor do they simply add up to the whole.* Rudolf Arnheim, "Perceptual Analysis of a Cosmological Symbol," *SYN 1* (Baden-Baden: Agis, Apr. 1965) pp. 48-50.

*A black dot appears within the light yang, symbolic of the embryonic yin, and a light dot within the dark yin, symbolic of the embryonic yang.* Derk Bodde, *China's Cultural Tradition* (New York: Reinhart, 1957) p. 35.

Page 4.12 *note*
*Nothing can be beautiful:* "Timaeus," *The Dialogues of Plato,* trans. B. Jowett (New York: Random House, 1937) p. 14 (section 30).

**Architecture**
**Architecture II: The Foreigners**

Il Gruppo 7

Introduction and Translation by
Ellen R. Shapiro

With the reappearance at the 1973 Milan Triennale of the term *'architettura razionale,"* the entire history of the Italian Modern Movement has become a subject of immediate interest. Long buried by liberal historians and scholars as a period of darkness, it has suddenly been resurrected along with such names as M.I.A.R. and Gruppo Sette.

In publishing the first two of the four articles that constitute the now well-known Gruppo Sette manifesto, *Oppositions* attempts to make available to its American readers some of the primary source material from this period. Again, as has been said previously in these pages, the object of publishing such material is not to create a new historicism, but rather to allow for a more adequate assessment by our readers of what have become seemingly mythical texts.

The first of the two articles seems to be of greater import than the second, which merely categorized the Modern Movement in terms of the then existing European context. It confronts, albeit in a highly polemical manner, many of the issues fundamental to any architecture, a number of which have again become a central focus in Italy today. While such issues as architecture as a manifestation of the spirit of the age, and architecture as born of necessity, may have little impact on us today, it is still worth noting their appearance in an Italian context in 1927; one has only to look at the pages of *Domus* or *Casabella* of about that time to realize how poignant Gruppo Sette's remarks must have been. However, other issues that appear in the text, such as the question of type, and the question of fundamental elements, seem especially pertinent to our concerns today. It is only after reading of Gruppo Sette's insistence on type in this first article that we can realize the architectural patrimony of Rossi, Scolari, Aymonino, and Bonfanti.

Ellen Shapiro, a graduate student in Art History at Yale, has provided us with an excellent introduction and translation for the texts. However, it is not without irony for the editors of *Oppositions* that Gruppo Sette and Giuseppe Terragni should now become a subject of interest at the Yale Art History Department. In our view, to reduce the difference between the rationalism of Gruppo Sette and the monumental rhetoric of Piacentini to mere questions of personality and social history is to miss the critical difference between the actual architecture of, say, Terragni's Casa del Fascio and Piacentini's University building in Rome.

It has been said that it was *not* for aesthetic reasons that Hitler closed the Bauhaus. It must be said that it *was* because of a certain anxiety brought on by aesthetics—and not by politics—that Mussolini preferred Piacentini to Terragni.
PDE

The architects who originally comprised Il Gruppo 7 were: Ubaldo Castagnoli, Luigi Figini, Guido Frette, Sebastiano Larco, Gino Pollini, Carlo Enrico Rava, and Giuseppe Terragni.

Ellen R. Shapiro is a graduate student in art history at Yale University, New Haven, Connecticut. She has just completed her Master's Thesis on "La Casa del Fascio di Como and the Fascist Aesthetic," and is currently working on a dissertation on Fascist building programs.

*"Architecture" and "Architecture (II): The Foreigners" are the first and second of four articles published in* Rassegna Italiana *from December 1926 to May 1927. The four articles were titled as follows: "Architettura" ("Architecture"); "Architettura (II): Gli Stranieri" ("Architecture II: The Foreigners"); "Architettura (III): Impreparazione, Incomprensione, Pregiudizi" ("Architecture III: Unpreparedness, Incomprehension, Prejudices"); and "Architettura (IV): Una Nuova Epoca Arcaica" ("Architecture IV: A New Archaic Era").*

## Introduction

Ellen R. Shapiro



The members of Il Gruppo 7, Ubaldo Castagnoli,[1] Luigi Figini, Guido Frette, Sebastiano Larco, Carlo Enrico Rava, Gino Pollini, and Giuseppe Terragni, had recently graduated in the same class from the Milan Politecnico when they wrote their series of articles, in 1926, that later became known as the Gruppo Sette Manifesto. Their espousal of the International Style appeared at a time when the artistic situation in Italy would have seemed to be against such a definitive affirmation of that aesthetic. Carlo Belli, writing in *Quadrante* in 1935, even insisted that some members of the group had dropped out of school in protest of its backward approach to the teaching of architecture.[2] That Gruppo 7's aesthetic was absolutely counter to the contemporary teaching in the architectural schools should come as no surprise. The seven, while they were at the Politecnico, vehemently repudiated the more or less Beaux Arts instruction, which engendered a "mediocre and sterile atmosphere."[3] It is true that, at that time, the Milan Politecnico was less reactionary than the school in Rome, but there can be no doubt, if one looks at the work produced, that the teaching of architecture in Italy in general during the twenties was based on an outdated system. Under the direction of its leader Giuseppe Terragni, Gruppo 7 attempted to transcend the ideals of Renaissance Classicism which the Politecnico propagated. Even Terragni's thesis on the "*stile Michelangiolesco*" was, in a way, a protest against the dogmatic Classicism of the school.

But if their architectural teaching offered the members of Gruppo 7 no models for modernism, the work of architects, such as Walter Gropius and Le Corbusier, certainly did, and the Group's wording of the manifesto owed much to the polemic of the latter.

Their first article derives its inspiration in many ways from Le Corbusier's *Vers une Architecture*. Both insisted on the advent of a "new spirit," and Gruppo 7 was careful to differentiate this new spirit from that of its immediate predecessor, Antonio Sant'Elia. "Some of our predecessors," the article reads, "turning to the future, preached destruction in favor of the false new." By destruction, they referred to Sant'Elia's hysterical call for the abolition of all aspects of traditional Italian culture. And they equated the "false new" with Sant'Elia's grandiose, unrealized architectural dreams. In this sense, the group's theories cannot be seen to derive from Sant'Elia. Nevertheless, its members were careful to insist on the "Italian" character of their rationalist proposals. The work of Peter Behrens, Erich Mendelsohn, Walter Gropius, and Le Corbusier, they proclaimed, had all embodied elements of the architects' appropriate national character. In general, therefore, Gruppo 7's chauvinism was only part of the pervasive nationalism of postwar Europe. But it was also a natural component of Fascism. It is in an intrinsic Fascist rhetoric that Gruppo 7 announced the Italian character of their architecture: "In any case, Italy, because of its nature, tradition, and most of all, because of the victorious period it is passing through, is most worthy of the mission of renewal. It remains for Italy to give maximum development to the new spirit, to carry it to its logical conclusion, until it dictates a style to other nations, as it has in the great periods of the past."

Gruppo 7, then, sought to establish a foothold in Italian culture by promoting the nationalistic elements of their aesthetic. Yet, in spite of the efforts to accomplish this members of the group and the so-called *stile razionalista* were accused of taking their elements from international architectural currents. One of the group, Carlo Enrico Rava, answered one of many such accusations subsequent to the publication of the manifesto. In December, 1927, he offered a concise defense of Gruppo 7: "in reality our spirit is so different from that which informs German, French, Swiss, Dutch, or Russian architecture, that this difference is immediately obvious to foreigners . . . by now, to accuse someone of plagiarism . . . has become a custom in the artistic field. Instead, it would be useful to distinguish *influence*, an unconscious phenomenon . . . like a conversation among a privileged few. . . ."[4]

Rava's argument was obviously directed against the most outspoken antagonist of Rationalism, Marcello Piacentini. Although not mentioned by name in the article, Piacentini was obviously the person referred to in Rava's condemnation of official, traditionalist architecture "made up of the false classical, of stuccoed rhetoric and poorly digested archaeological reminiscences." He concluded: "This architec

1.

*1. Administration Building, University of Rome. Marcello Piacentini, architect, 1936.*

*2, 3. Novocomum apartments, Como, Italy. Giuseppe Terragni, architect, 1929.*

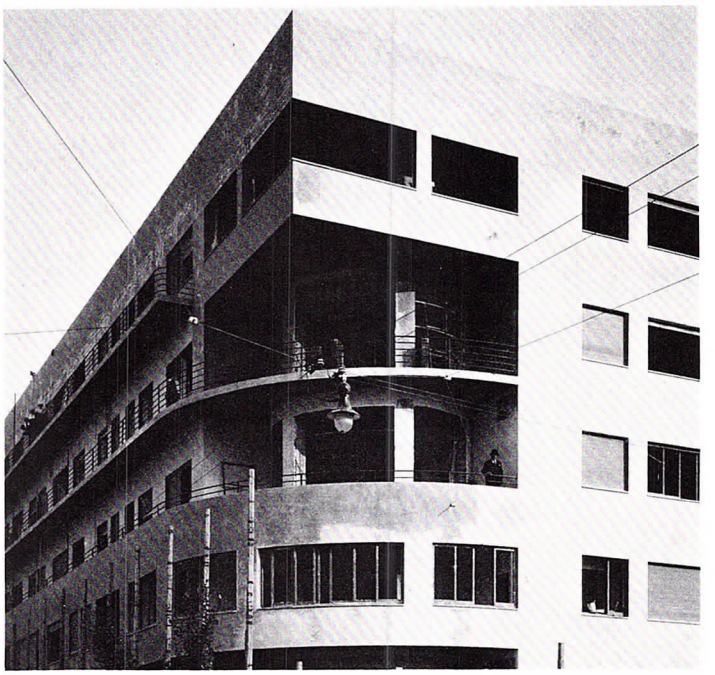
*4. Project for a garage. Luigi Figini and Gino Pollini, architects, 1927.*



ture prides itself on representing *imperial* Italy while it has as much to do with imperialism as Rationalist architecture does with Communism."[5]

This, then, was one of the issues which dominated both artistic and political circles in Italy for more than a decade. Piacentini, who became Mussolini's official builder in the thirties, was a source of constant irritation to Terragni and his followers. He condemned their use of reinforced concrete, and accused them of adopting Nordic elements which were totally foreign to the Mediterranean sensibility. Piacentini also decried his colleagues' lack of sensitivity to the Italian climate. "They have absorbed forms," he wrote, "which are absurd for us. . . . No shutters (farewell, sweet relief of cool air in the burning summer afternoons) . . . and no roofs: the top floors will have to suffer the heat and cold in homage to triumphal rationalism" (fig. 4).[6]

Yet, in spite of Piacentini's polemics, the group did enjoy some modest success. It reached an international audience through exhibitions in Monza, Essen, Milan, Bolzano, Breslau, Budapest, Rome, and New York, from 1928 to 1931, and also through their connection with the CIAM group, especially aboard the *S.S. Patris* at the Athens Conference. However, while they enjoyed this international exposure, their position was rapidly eroded after 1931 in Italy. This did not come about so much because of theoretical inconsistency, but rather from the clever political maneuvering of Piacentini, and others. Gruppo 7 had sought to establish the national character of the modern architectural idiom. Its nationalism was based on a left-wing interpretation of Fascism, centered on the concept of revolution, and as such precluding any aspirations toward a purely Italian or nationalistic architecture. The attacks by Piacentini on this attitude began as early as 1929 in such well-established journals as *Dedalo*. In that year, Terragni completed his Novocomum apartments in Como (figs. 2, 3), a work probably derived from external sources. Its completion marked the beginning of the politics which eventually diminished the Rationalist movement. Through his maneuvering, Piacentini ultimately won the support of the regime and with it formed the National Union of Fascist Architects. From this was to follow many of Piacentini's important



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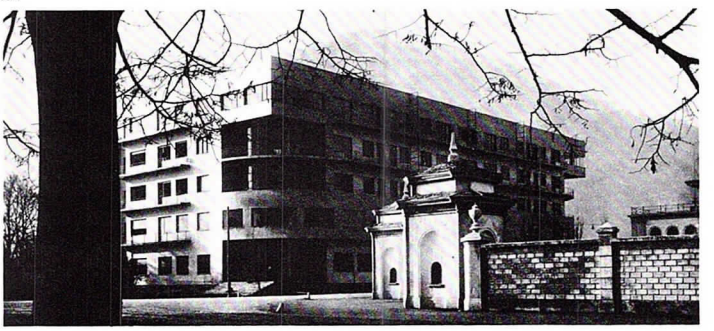

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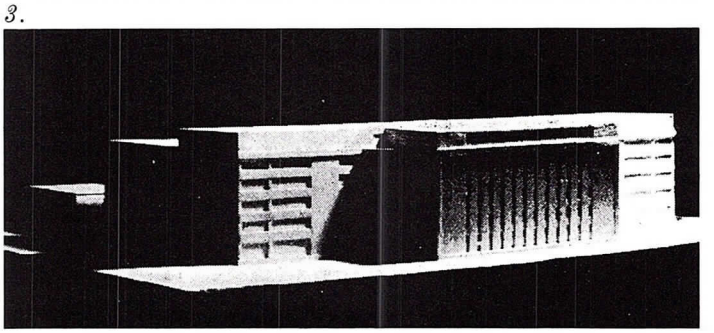


4.

government commissions in the thirties. The Rationalists gradually lost the support of the regime which had sponsored them in the twenties—Mussolini, in fact, had inaugurated their first exhibition in Rome in 1928. The Duce's shift to his support of Piacentini resulted from what Bruno Zevi justly described as Piacentini's "threats, corruption, and compromise."[7] Even the Rationalists' insistence on the traditional, Mediterranean quality of their architecture was futile in the face of the increasing political power of Piacentini and his architectural union. With the beginning of Italy's imperialistic expansion in 1935, Mussolini logically supported the "neo-imperialist" architects, and Piacentini was made *arbiter elegantiarum* of official architecture. From then on, works like Piacentini's University of Rome Administration Building of 1936 became the most important public manifestation of the regime (fig. 1). Like politics, architecture, too, was finally blown up to a gigantic scale.

Gruppo 7's four articles, then, were part of an heroic attempt to bring the International Style—however modified—to Italy. But it was natural that the artistic factions supported by Mussolini eventually brought about the demise of the Rationalist movement. Gruppo 7's left-wing revolutionary interpretation of Fascist doctrine and its analogous revolutionary architectural forms were rejected in favor of the generally pompous, over-scaled, "imperialist" rhetoric which came to populate the Fascist world throughout the thirties.

"Fascism," Mussolini once wrote, "must be a glass house into which everyone can see."[8] Unfortunately, the Duce's architectural metaphor was realized in neither the artistic nor the political sphere. In rejecting the Rationalists' position, the regime virtually destroyed any chance of liberating Italy from its then long-established artistic stagnation. And Mussolini's hysterical cultural protectionism ensured the ultimate failure of the establishment of a modern, Italian, architectural idiom proposed by the Milanese "seven."

Notes

1. Adalberto Libera joined Gruppo 7 in 1927, after Ubald Castagnoli had left.
2. Carlo Belli, "Origini del Gruppo 7," *Quadrante*, n.2 1935.
3. Ibid.
4. Carlo Enrico Rava, "Dell'europeismo in architettura, *Rassegna Italiana*, December, 1927.
5. Ibid.
6. Marcello Piacentini, "Dov'è Irragionevole L'Archite tura Razionale," *Dedalo*, II, 1931.
7. Bruno Zevi, *Storia dell'Architettura Moderna* (Turi Einaudi, 1955), p. 239.
8. *Quadrante*, n.35, p. 15.

Figure Credits

1–3. Courtesy Peter Eisenman.
4. Reprinted from *La Casa 6* (Rome: Edizioni de Luca).

## Architecture

Il Gruppo 7

Translation by Ellen R. Shapiro

Current opinion holds that our time is one of confusion and disorder in the field of art. This was so, and perhaps it was so even recently, but today it is certainly not the case.

We have gone through a period of formation which has now matured, and it was the work of this formative period that caused a general sense of disorientation (perhaps even the men of the first years of the Quattrocento felt disoriented: a comparison cannot be too bold, since we are truly on the threshold of a great period).

A "new spirit" has been born.[1] It exists, we would like to say, in the air, like a thing by itself, independent of single individuals, in all countries, with different appearances and forms, but with the same foundation—a prodigious gift which not all art epochs or historical periods have possessed. We live, therefore, in privileged times since we can witness the birth of a whole new order of ideas. Proof that we are at the beginning of an epoch that will finally have its own well-defined character can be seen in the frequent repetition of the perfect correspondence of the various forms of art, and the influence that the one exercises upon the other—precisely those characteristics of periods in which a style was created.

All over Europe, such a characteristic is now well-known. The exchange of influences among Cocteau, Picasso, and Stravinsky is very evident in the way in which their works complement each other. In addition, the influence Cocteau had on the "Six" is well-known, as is his influence in general on the evolution of French music. What is striking, however, is the correspondence between Le Corbusier, who is without doubt one of the most noteworthy initiators of a rational architecture, and Cocteau. Le Corbusier writes his very clear-cut polemical books, talking about architecture in the style of Cocteau, and constructs his houses according to an identical ideal of rigid, clear, crystalline logic. Cocteau, in his turn, constructs his writings according to a completely architectonic scheme of conciseness and "Corbusian" simplicity. And also, note how a painting, say, by Juan Gris, is perfectly at home in a room by Le Corbusier—only in that kind of ambience can the new spirit appear in all its value.[2]

In their turn, Germany and Austria offer a magnificent example of another type: the example of the refinement of art which a country can attain when the sense of a new architecture is understood by an entire nation, and dominates all decorative forms, so that all objects down to the most modest carry its imprint. From the monumental building to the cover of a book, Germany and Austria possess a *style*. This style, more solid in Germany, more refined and precious in Austria, has an absolute personality: it may please or displease, but *it asserts itself*. What is more, it has a distinct nationalistic character, and this should suffice, where there might not have existed other reasons, to show how wrong were those who believed they were renewing architecture by transplanting German styles, which are very noble ones to be sure, but which are out of place in this country.



In an analogous fashion, in Holland there is a blossoming of architectural forms composed of the most rigorous and constructive rationality, perfectly attuned to the country's climate and landscape. And so, each with its own characteristics, the Nordic countries Sweden and Finland also contribute to the "new spirit."

A group of famous European architects—Behrens, Mies van der Rohe, Mendelsohn, Gropius, Le Corbusier—create architecture tightly connected to the necessities of our time, and from these necessities extract a new aesthetic. Therefore there *exists*, particularly in architecture, a new spirit.

And in Italy? Without doubt even here correspondences can be seen, like those cited above, among the various forms of art. There exists, for example, an affinity between certain of Bontempelli's abstractions and certain strange paintings of De Chirico, Carrà, and Sironi. Their attitude, having assumed the name "Novecento," would appear to foreshadow a coordination of forces. In any case, Italy, because of its nature, tradition, and most of all because of the victorious period it is passing through, is most worthy of the mission of renewal. It remains for Italy to give maximum development to the new spirit, to carry it to its logical conclusion, until it dictates a *style* to other nations,

as it has in the great periods of the past.

There is a certain obstinacy, however, particularly in architecture, in not wanting to recognize this new spirit, at least for the moment. Perhaps only the young understand it and feel a pressing necessity for it; and this constitutes their force, and ours. In general we, youth, meet with general diffidence, which is understandable and even excusable in part; the word "avant-garde" has by now assumed an equivocal sense in art, and until now the young have not given it much definition. It is necessary to understand, to persuade oneself, that our very tightly-knit postwar generation is far from its predecessors. The Futurist and early Cubist experiences, even with their advantages, have stung the public and disillusioned those who expected a better result from them. And how far away they already seem to us, particularly the former, with its attitude of the systematic destruction of the past—still a very romantic concept.

The youth of today follows a completely different road. We all feel a great necessity for clarity, revision and *order*. The new generation *thinks*; and its seriousness is so unexpected that it appears as presumption and as cynicism.

The legacy of the avant-garde that preceded us was an artificial impulse—an empty, destructive fury that confused good and bad. The natural right of the youth of today is a desire for *lucidity*, for *wisdom*. We must convince ourselves of it.

It is well-known that the cultural level of the new generation is notably superior to those preceding it. Above all, the sphere of interest for art in general has been infinitely widened among students; youth whose studies lead them into totally other fields are interested in music and painting, are well informed about foreign literature; they diligently attend art exhibitions, concerts, and book sales. And only very few are an exception to this. Therefore the desire for a new spirit among the young is based on a solid knowledge of the past, and is not founded on nothing.

Particularly in architecture we have perhaps arrived at this sensation of an absolute necessity for the new, through a saturation of knowledge. In studying the past, the young have not been content simply to question built architecture, but have investigated art forms in their most hidden spirit: the Quattrocento in the wood engravings of the "Hypnerotomachia Poliphili" and in the drawings of Maso Finiguerra; Byzantium in its enamel, glass, ivories, and in a pilgrimage of admiration through the treasures of the cathedrals; the medieval East in the Armenian Codices, the Syrian Gospels, Persian miniatures, Coptic fabrics—and exactly this much culture of the museum and the old bookstore overwhelms our thought and causes us to invoke *simplicity*. This has nothing to do with our admiration for the past; nothing hinders us from admiring the Giottesque backgrounds and the illustrated Tarot cards of the Quattrocento, and to understand and defend the extraordinarily decorative part that shining advertising plays in the modern city. Nothing prohibits us from admiring the architectural marquetry of Francesco di Giorgio and the wood engravings of Serlio, and to understand the rhythm, the almost Greek purity of certain factories with walls of glass. There is no incompatibility between our past and our present. We do not want to break with tradition; it is tradition which transforms itself, and assumes new aspects, few people may recognize it.

We have had a sincere admiration for the architects who immediately preceded us. We recognize them for having been the first to break with a tradition of superficiality and bad taste, which ruled for too long. Also, we have in part followed our predecessors; but we will no longer. Their architecture has given everything new it could. In effect we can distinguish two great tendencies in Italy: the Roman and the Milanese. The former have patterned themselves after our classic great Cinquecento, achieving at times a serene nobility. But by now their style has degenerated into a too simple code, and they limit themselves to the opposition of ashlar planes and blank surfaces. The latter have turned to neo-classic elegance, and have derived from it undoubtedly refined and pleasing results. They, however, have fallen into pure decoration, into the insincerity of an architecture which varies its effects by means of expediencies, alternating broken facades, candelabra, cupolas, and crowning obelisks. Both tendencies are by now a *dead end*

that repeat themselves in a sterile manner, with no way out. How frequently do buildings, even by very well-known architects and even if pleasing when finished, show while under construction, in the nudity of their skeleton, all the wretchedness of an architecture without rhythm, which saves itself only with decorative application.

We can no longer be satisfied with this. The new architecture, the true architecture, must result from a rigid adherence to logic, to rationality. A rigid constructivism must dictate the rules. The new forms of architecture must receive aesthetic value exclusively from the character of *necessity*, and only afterwards, by way of *selection*, will a style be born. Since we don't pretend at all to create a style (similar attempts of creation from nothing lead to results such as the "Liberty Style"); but rather to allow, from the constant use of rationality, from the perfect correspondence between the structure of the building and the purposes it serves, a style to be born through selection. We must succeed in this: to ennoble with indefinable and abstract perfection of pure *rhythm* the simple construction, which alone would not constitute beauty.

We said "by selection." This is surprising. We add: we must persuade ourselves of the necessity of creating *types*, a few *fundamental* types. This necessary, inevitable law encounters the greatest hostility, the most absolute incomprehension. But let us look behind ourselves. All the architecture which made the name of Rome glorious in the world was based on four or five types: the temple, the basilica, the circus, the rotunda, the cupola, and the bath. And all of its force stands in having maintained these schemes, repeating them in the farthest provinces, and perfecting them, exactly *by selection*. All this is very well-known, but no one seems to remember: *Rome built in series*.

And in Greece? The Parthenon is the greatest result, the greatest fruit of a single type chosen through the centuries. Note the distance between the doric of Aegina and the doric of the Acropolis. Thus, the basilica of the first Christian centuries had a single type, as did the Eastern church. Who cannot see in the Churches of Saints Sergio and Bacco the beginnings of Saint Sophia, and in this, in its turn, the origin of a type for the great mosques of Constantinople? And are not all the Tuscan and Umbrian houses of the Duecento and Trecento perhaps alike? And isn't the bare, already modern nobility of the Florentine *palazzi* of the Quattrocento of a single type?

Yet, the idea of a *house-type* disconcerts, gives rise to the most grottesque and absurd comments. One believes that making house-types, houses in series, means mechanizing them, building buildings that look like steamships or airplanes. What a deplorable misunderstanding! We have never thought of taking inspiration for architecture from the machine. Architecture must adhere to the new necessities, just as new machines are born from new necessities, and are perfected with time. The house will have its own new aesthetic, just as the airplane has its own aesthetic, but the house will not have the aesthetic of the airplane.

Too often we equate talent with facility, genius with talent; so, naturally, the concept of the house-type is not appealing to many people who have a cult of their own personality, which they suppose to be exceptional. They cannot adapt themselves to the new problems. We *must* persuade ourselves that at least for a while the new architecture will be made in part by *renunciation. We must have this courage. Architecture can no longer be individual.* In the coordinated effort to save it, to lead it back to the most rigid logic, to the direct derivation from the problems of our times, we must sacrifice our own personalities; and only through this temporary standardization, through this fusion of all tendencies into one, can a new architecture, *truly ours*, be born. The history of architecture has known only a few geniuses; only they had the right to create from nothing, following inspiration only.

In particular, then, our times have certain problems, greater problems, extremely urgent problems. We must follow them, and we, youth, are ready to follow them, ready to renounce our individuality for the creation of "types." To the elegant eclecticism of the individual we oppose the spirit of construction in series—a renunciation of individuality. It will be said that the new architecture will fare poorly; we should not confuse *simplicity* with poverty; it will be

simple—perfecting simplicity is the *greatest* refinement.

Certainly the time is near when industrial buildings—factories, docks, silos—will have the same appearance throughout the world. Such internationalization is inevitable, and, what is more, if monotony results, it will not lack a grandiose sense. Other aspects of architecture, on the other hand, in spite of their absolute modernity, will keep *national* characteristics in every country, as is already happening.

Here, in particular, there exists a classical foundation. The spirit (not the forms, which is something different) of tradition is so profound in Italy that evidently, and almost mechanically, the new architecture will preserve a stamp which is typically *ours*. And this is already a great force, since tradition, as we said, does not disappear, but changes appearance. Note how certain factories can acquire a rhythm of Greek purity because, like the Parthenon, they are stripped of all that is superfluous and respond only to the character of necessity. In this sense, the Parthenon has mechanical value.

The new generation seems to proclaim an architectonic revolution, a seemingly total revolution. A desire for truth, logic, order, and Hellenic lucidity—here is the true character of the new spirit. Some of our predecessors, turning to the future, preached destruction in favor of the false new. Others, turning to the past, believed they were saving themselves with a return to the classical. We wish solely, exclusively, and *exactly* to belong to our time, and our art is to be that which the time requires. To have belonged to it—entirely with its good qualities and its defects—this will be our pride.

Notes

1. Cf. "Il existe un esprit nouveau." Le Corbusier, *Vers une Architecture*, 1923.
2. We could also cite the perfect correspondence between music such as "Le Pacific n. 31" by Honnegger, and literary extracts such as certain pages and descriptions by Cendrars in "Moravagine"; between the obsessive rhythm of "Prikaz" by Salmon and certain dizzying music, derived from that very slanderous "Jazz," which, too, is one of the characteristics of our time; so much for the analogies. And as for the influences of painters such as Marie Laurencin or Pruna had on composers like Aurig or Poulenc, in staging their works; or the influence of these new scene-paintings on the old Russian ballet, the last remainder of the orientalizing infatuations from before the War. Naturally, not all modern works are in the modern spirit; the surrealists signal a regression from this point of view, with the sort of neo-romanticism which is extremely noticeable in Soupault. Instead, the Radiguet phenomenon is an example of the new spirit.

## Architecture (II): The Foreigners

Il Gruppo 7

Translation by Ellen R. Shapiro



At the end of our first article, we said that, "a desire for truth, logic, order, and Hellenic lucidity"[1] stand at the base of every inquiry of the young generation. This desire for lucidity urges us on, and it is only right to investigate the reasons for the apparent uncertainty in which Italian architecture is still being discussed, and to establish what exactly is the truly absolute and significant *role* in the work realized abroad. It is a question, then, of two directions of study that, by different means, wish to reach the same end: that is, to completely enlighten the present architectural moment. And it seems to us that since there has been so much discussion of the question of foreign influence, of its greater or lesser opportunity and plausibility, a brief analysis of foreign tendencies in architecture is the first problem to confront.[2]

In the introductory essay of our group, the mention of contemporary architecture outside Italy (little more than a simple list of names and facts placed in relation to some general attitudes of European art) ended with this conclusion: "There exists, particularly in architecture, a new spirit." It remains for us now to establish *which* of these works have *absolute* value; that is, which ones, independently from the country that first created them, are born from a *spirit of necessity*, such that it attributes to them an *international* range as *base-elements* of the new architecture in all countries.

Germany is one of the countries in which architectural renewal has reached a more complete expansion; we shall therefore concern ourselves with Germany first, also because it seems that there has been too little discussion of a recent and symptomatic *phenomenon* in the evolution of German architecture.

Until the recent past, two great tendencies could be distinguished; one was made up of a modernized interpretation of classical Italian architecture from 1500 to 1800 that, by a process of simplification, an enlargement of a few principle elements, and a particular abundance of moulding, achieved value as an interesting personality still preserving a certain vaguely Palladian spirit. From the many examples of this tendency, we cite the noteworthy Verwaltungsgebaude by Hermann Frede at Halle (1921–1923), that is worthy of comment above all for the purity of its classical sense, for the row of small pillars which encloses the courtyard, and for the base section.[3] The other tendency applies to the German national patrimony which, through a verticality of structure that adapts itself very well to modern buildings with many stories, and through an almost wooden stylization employed in Gothic structures, and, even more, for a general movement of masses of medieval value (in spirit, naturally) but understood in the most absolute modernity, arrived at typical results of undeniable value. Look, for example, at the Thaliahaus by the architect Gerson in Hamburg (1921); a towered skyscraper by Wilhelm Kreis in Düsseldorf (1922–1924), and Kreis' coal depository at the Krupp factories (1920); another large coal depository by Alfred Fischer and Hamm (1922–1923) (fig. 1);[4] and, most noteworthy of all, the project by the architect Distel in the competition for the Messehaus in Hamburg (1924), in which the Gothic quality of the large tower is already merged with the rationalistic style of the lower part with its visible reinforced concrete skeleton.[5]

Parallel to these two great tendencies, German decorative art developed closely with architecture but with an even greater inclination to make use of the national patrimony. From this and, above all, from the Middle Ages, it used the angular style in the interpretation of both figures and foliage which produced an unexpected disjointedness—something it has in common with Austria. But what most distinguishes this decorative art is a revived sensibility from the pure hieroglyphic, a new satisfaction in the abstract arabesque that gives to this very typical art a particular character. The German decorator is continually fleeing from the straight line, he is an acrobat who magically holds himself in balance in the middle of a continuous play of angles. It is an art which is very far from ours, but perfect of its kind. Among the numerous examples that one could cite, we will limit ourselves to a few of the most personal and tasteful: the interiors of Otto Rudolf Salvisberg, the very erudite decorations of Hermann Frede, so soberly distributed in the building at Halle, and the stuccoes of August Breuhaus. A stucco panel by the latter, in the dining room of a club in Düsseldorf, seems to us to

embody the essence of such art: in this we see, through a labyrinth of broken up panels, beasts and birds in an improbable chase under strange trees in a tropical setting *à la* Rousseau, all of which seems to have stiffened into angular rhythms.[6]

Returning to architecture, whether because the two tendencies we talked about are still derivative of the past (however much they use an extreme modernity of form and spirit), or because of the perfection reached by decorative art, these tendencies were allowed to dominate the exterior of buildings. In many cases, they fell into errors of partial decorativism and the arbitrary application of unnecessary elements. Or else, they fell into another kind of arbitrariness, treating the façades artificially by means of a repeated and, not always, justified movement of the architectural mass in a purely plastic investigation of the play of shades and shadows.

Now it seems to us, and this is the *phenomenon* about which we spoke in the beginning, that German architecture, even though it had achieved a notable refinement and perfection, underwent a renewal; and that this came about from an influence of the strictly *technical* on the monumental. A group of architects, Gropius, Kosina, Mendelsohn, Korn, and Luckhardt—experienced experts in the construction of purely industrial buildings—seem to have extracted from this the essence of pure rationality. They applied the spirit of a necessity and an extreme constructive sincerity (indispensable foundations for an architecture that does not want to fall into the arbitrary) to an area already extremely well prepared by German architecture, and from this they have produced a new style truly close to logical perfection. And from such perfection was born some of those absolute forms of an *international* value. It is this which is the purpose of our investigation.

Look at the model for the electric center by the architect Kosina (1925); at the structure of the turbines—bare, elementary, and without shadows. The structure is squarely grafted onto the building with ceilings that project out from the mass of the building, placed one above the other so that horizontal bands of light and shade alternate rhythmically. This system is balanced by the vertical division of the cells: three motive types. On this the pure rhythm of the building is built by the flowing lines (fig. 2).[7]

The overlapping and protruding planes, the play of *banded* windows and jutting balconies united in a horizontal stratification is the central theme here and among others, such as the project of the Philosophenheim by Walter Gropius (1923), the villa near Berlin by Arthur Korn (1922–1923), and the Weichmann shop at Gleiwitz by Erich Mendelsohn (1922).

And so, from the factory by Gropius at Dessau (fig. 4) which goes back to 1914, with its two volumes of iron and glass ending in curves at their extremities that let loose such a lively sense of the ultramodern technical aesthetic, the beautiful and very rational solution by Arthur Korn of the competition model for the "Districts for Large Stores" is derived.[8] This places, around a central nucleus, a series of exhibition windows overlapping for four floors and forming a fantastic semicircular tower in iron and glass. And again from the same motif, the curved and mainly glass body in the project by the architects Zwinscher and Peters for the competition of the Messehaus (1924), was inspired.

So we see, in an extremely interesting model by Kosina for a large airport in Berlin (1924),[9] both the play of plastic masses and that motif of the very high towered structure open from top to bottom with an immense window between the two protruding bodies (fig. 3). This has many practical applications for the lighting of the interior spaces and staircase and, at the same time, has a very pleasing aesthetic.

From a system of the *structural skeleton* of reinforced concrete visible from the exterior of the building—a very useful system for factories—which is merged with a system of jutting balconies, the very beautiful mass of the famous project by Walter Gropius for the competition of the Chicago Tribune (1922) is born (fig. 5).[10] From one analogous part, the project by Wilhelm Kreis for the competition of the Messehaus (1924) was derived in which he achieves a true grandness in the rhythmic play of projecting masses in the tower form that is combined with an effect of a mechani-

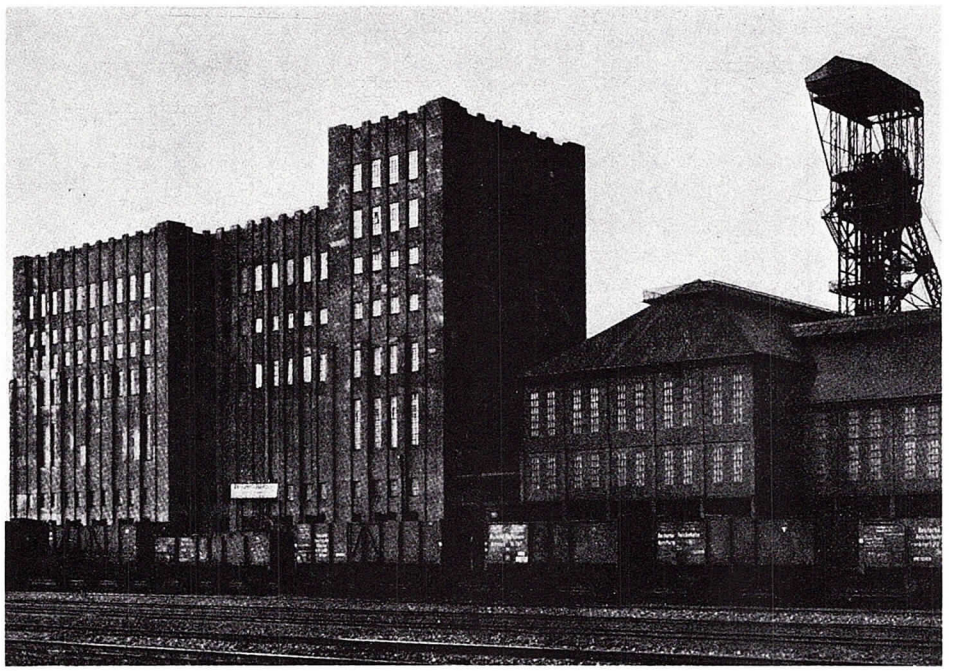
*1. Coal depository. Alfred Fischer and Hamm, architects, 1922–1923.*

*2. Electric center, Berlin. H. Kosina, architect, 1925.*

*3. Airport, Berlin. H. Kosina, architect, 1924.*

*4. "Fagus" factory, Dessau. Walter Gropius, architect, 1911.*

*5. Chicago Tribune competition. Walter Gropius and Adolf Meyer architects, 1922.*



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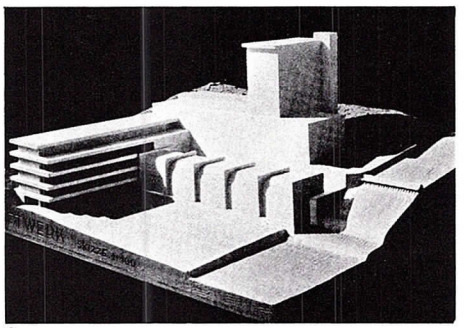

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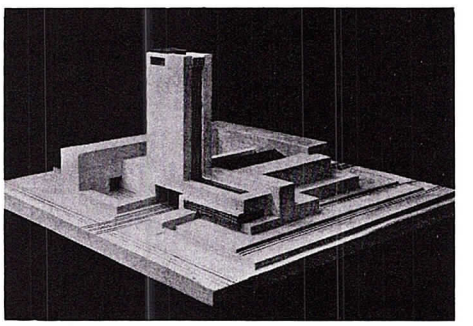

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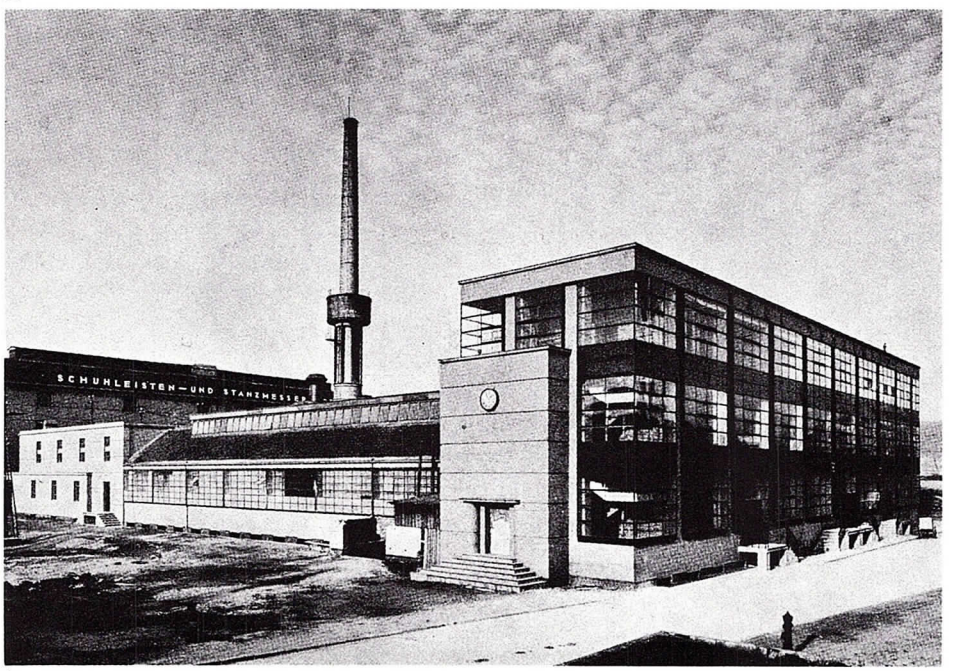


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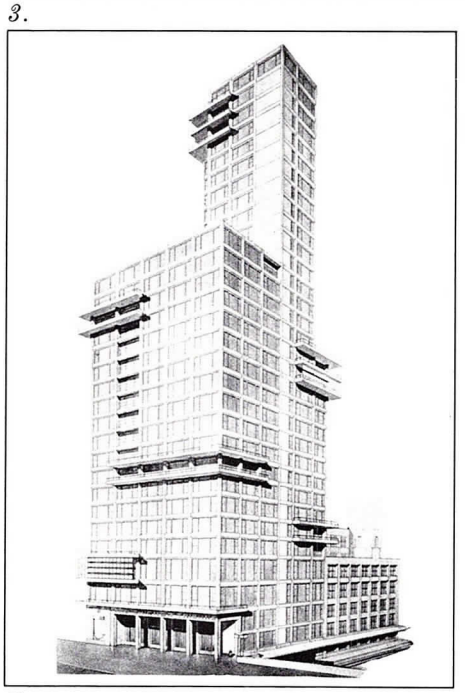


*5.*

cal purity—all of which is perfectly justified by the given conditions.[11]

And finally, the project by Richard Döcker for the Large Stores in Stuttgart (1921–1922) that is a similar investigation of masses, of particular interest for the two towered bodies that intersect in a perfect balancing of planes (fig. 7).[12]

In the aesthetic solution of factories, the most modern German architects have arrived at exceptional groupings: look, for example, at the almost monumental colonnade of the four chimneys of the thermal-electric center by Bensel in Hamburg (1914–1915) and, even more, the general rhythm distributed in the large Zschornewitz factory by the architects Klingenberg and Issel. Also, the group of hangers in Hannover by Peter Behrens in its pure adherence to the necessities of the problem, the immense rectangular opening closed between two parallelepipeds, comes close to a Greek rhythm.

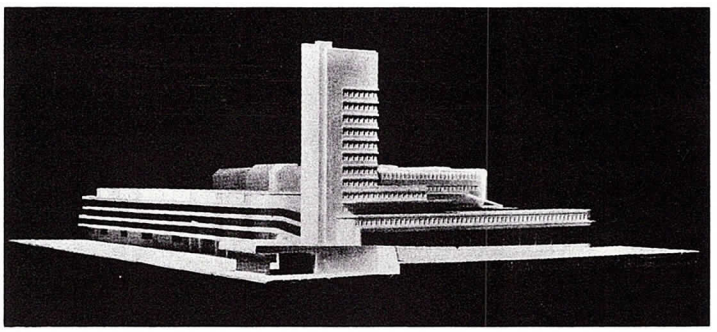
One of the most significant works in this area of *Hellenic proportional relationships* is found in the distinctive courtyard of the "Gesolei" in Düsseldorf: in the two symmetrical bodies, a truly Hellenic sensation of horizontal rest originates in the single, uninterrupted, continuous row of windows—clear crystal with white framing—that surrounds the entire mass of the building and provides an alternation in the absolute fullness of the higher and lower dark masses.

Some of the latest German buildings by major architects, such as Luckhardt, Mendelsohn, and Gropius, bring together all of the characteristics of this rational and logical architecture, and offer a way to reveal all those new elements created by the possibilities of reinforced concrete that have, in themselves, an *absolute* value. Among the works of Luckhardt is the noteworthy garage for 1,000 automobiles in Berlin (1924):[13] perfect in terms of its sculptural value, the mass of the building is dominated by a high tower on which the bands of the windows create that motif of a backwards "L" which is also typical of Mendelsohn; four huge ceilings signal the entire mass (a clever

*6. Garage for 1,000 automobiles. Luckhardt brothers and Alfons Anker, architects, 1924.*

*7. Large stores in Stuttgart, project. Richard Döcker, architect, 1921–1922.*

*8. Weichmann silk store, Gleiwitz. Erich Mendelsohn, architect, 1922.*



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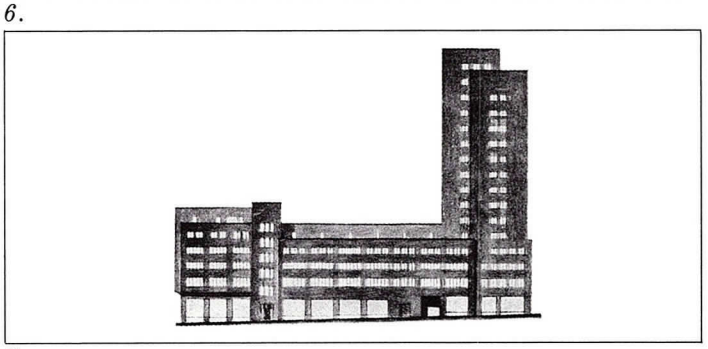

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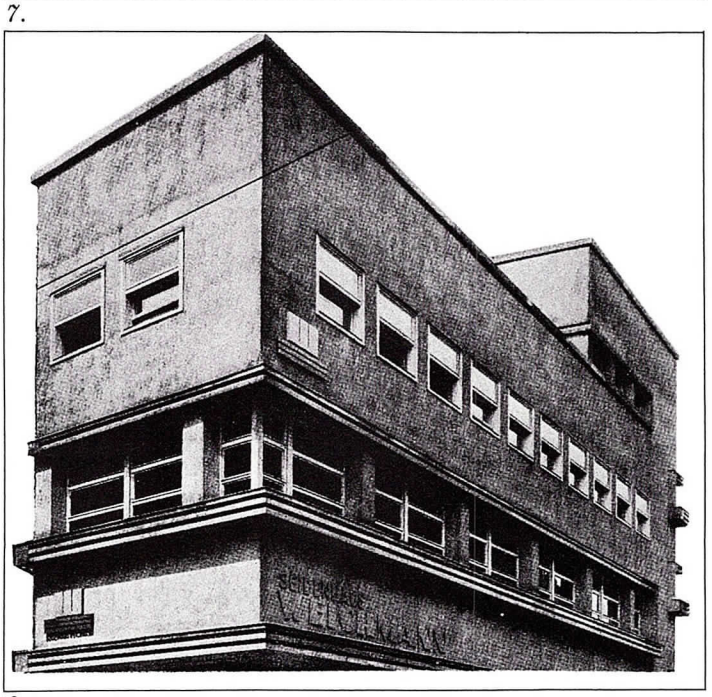


*8.*

composition of parallelepipeds near one another in a parallel series) and projecting all around create of the five floors a double order of garages, tracks, and dismantling rooms. On the other side, a very long band of open windows in a projecting volume is connected to the rhythm of the tower (fig. 6).

We have already mentioned the balconied windows, with their overlapping bands, of the Weichmann silk store at Gleiwitz (fig. 8).[14] This very interesting building, among the most rectilinear works by Mendelsohn, offers us on the narrow side, delineated and subdivided by certain stripped mouldings, a strangely metallic effect typical of this architect, another of those *absolute* forms realized by reinforced concrete, the *angular* window,[15] an element logically born from the new possibilities of construction, which lightens the corners of buildings and which, besides its rationality, offers a double advantage; the greatest amount of light and the very new aesthetic benefit that can be derived from it.

But of all the works by Mendelsohn and, for the longest time, the most perfect and perhaps the most complete architectural realization achieved by the technical aesthetic, is the huge dye-works projected for Leningrad. We are pleased to be able to print an unpublished reproduction of the model of this building: note in it, the alternation of the projecting vertical masses and the tall glass structures with their visible skeletal structure; the perfect and logical closing of the rhythm formed by the body to the tower; in this, the typical motif of the backwards "L," the symmetrical distribution of the three drying rooms which, with the two overlapping masses of differing angles, almost take on the value of abstract geometric forms. Finally in the rear, the mechanical complex terminated by one of those semicircular structures with overlapping bands is also an achievement of the new architecture. And such is the rhythmic perfection achieved by the complex of buildings that an undefinable Greek emotion is let loose from it—a sensation of Attic rest, of nude and abstract beauty, that is the supreme result of today's architecture.

These very pure and mathematical creations are as distant from a great part of *Austrian architecture* as Byzantium was far from the Doric spirit. Certainly, Austria and Germany have a common point of departure and, at times, it is still noticeable; but the former has always accentuated decoration at the expense of rationality and, when this decoration has reached an extraordinary degree of refinement, an elegance and a perfection in detail as is rarely seen, it has been at the expense of solid constructive logic. Roberto Papini observes quite rightly, in one of his articles on the Exposition of Decorative Arts in Paris, that contemporary Austrian art has all the characteristics of Byzantium. We should add that its very perfection had, in itself, the seeds of decadence, since we can already see symptoms of decline. This is an inimitable art (and not to be imitated), with a talent even greater than the Germans' and a fastidiousness of chisel that Germany does not know. Austria uses this in a much vaster field of inspiration that borrows many forms from the Orient and from colonial traditions and achieves a degree of virtuosity in subduing and fusing the rarest materials beyond which nothing is possible except, perhaps, decadence. And already, certain decorations with fretwork, certain Japanese designs which vary between the Baroque and the schematized, have passed from the realm of the precious to an extravagance of doubtful taste. However, in the field of pure decoration, some artists have achieved very good results. We can cite Prutscher, and certain of his walls that are entirely covered with rare woods in which, at times, the magnificence of a low marble chimney is embedded; or Hoffmann, and the way he divides ceiling walls in subtle stucco squares, at the center of which a tiny animal or flower emblem stands out; or Peche, the most elegant of all, and certain of his glasses, small furniture, and frames, in which the arabesque is treated, to the delight of the eye, with such apparent ease, with such a sweet and flexible fantasy, that it makes clear how, if it went one more step, it must fall into the grotesque.

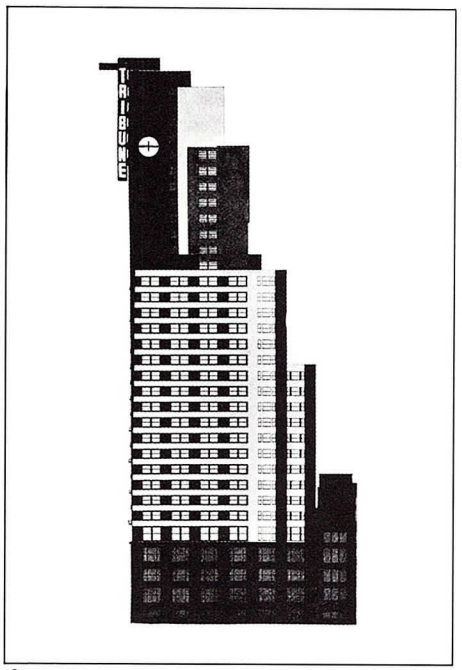
Because of the importance given to decorative value, even the best representative of Austrian architecture has a certain arbitrary character which does not always correspond to rational construction. In the same very refined Hoffman, we see him starting out from fantasies—such as his first project for the transformation of the Credit Bank of Vienna

*9, 10. Chicago Tribune competition. Knut Lömberg Holm, architect, 1922.*

*11. Chicago Tribune competition. B. Byvoet and J. Duiker, architects, 1922.*

*12. View of model for private house. Theo van Doesburg, and C. van Eesteren, architects, 1922.*

*13. Labor Exchange, Moscow. V. Vesnin, architect, 1923.*

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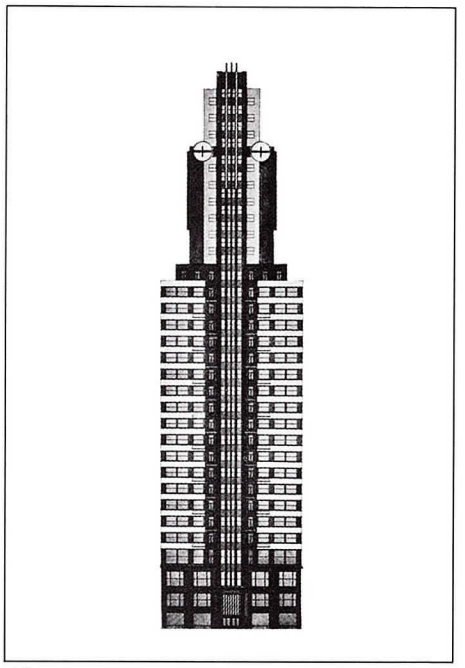

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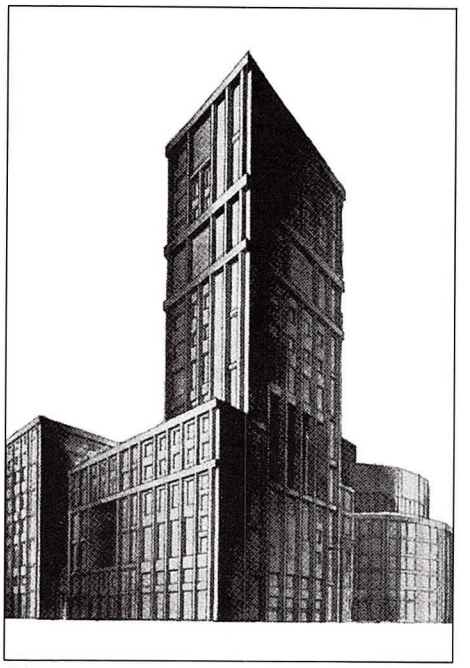

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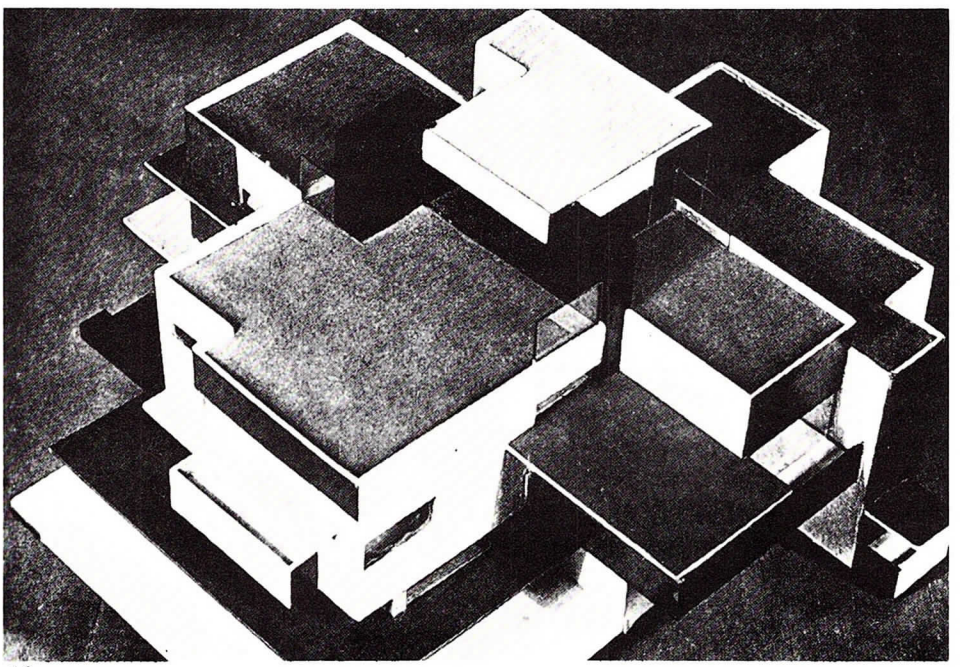

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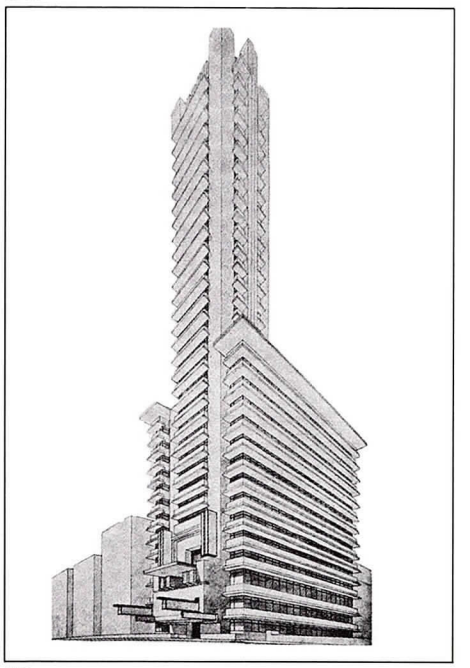


*13.*

(1924), which describes on the façade of the building, in polychrome decoration, a voyage "Aux Iles," in a spirit of a modernized *Paul et Virginie*; in the second project for the same bank, there is a preference for the overlapping of horizontal undulating planes, a motif he frequently used which has, in the end, a more decorative than architectural value.[16] Thus, Erich Leichner, in a large private house in Vienna seems to concern himself with moving the façades vertically in a succession of angles to produce a graphic effect that is, more than anything else, a series of velvety shadows.

Certainly, at times, the fusion of decorativism with architecture gives very pleasing results, as in the large house by Theiss and Jaksch in Vienna that has figures of stylized women in very low relief, perfectly inscribed between one window and another in a continuous band of decoration on the corners of the angular window.

But these compositions go beyond our investigation; and where Austrian architecture offers us examples of the rational application of those *absolute* elements with which we are concerned, they enter into types proposed by German architecture that we have already examined. For example, in the new public housing by Engelbert Mann in Vienna with its continuous overlapping balconies and great flat surfaces, or in the perfect Thaliabad (1923–1924)[17] that is one of the most beautiful buildings in Vienna and has an alternation of continuous windows and white bands that achieves, with the elimination of every superfluous detail, an absolute rhythm. Austria, then, offered nothing particularly new to our investigations.

The best buildings of Denmark and Sweden are derived from Germany, with an affinity for the Nordic spirit. In their interiors, they began from some characteristic Danish re-elaborations of local flavor that reveal the demand to derive from the classical a personal interpretation of a very stylized simplicity; this is particularly the case in certain decorations of Aage Rafn that use an archaic spirit with very modern results.

Among the Danish architects, Knut Lömberg Holm gives us, in his project for the competition for the Chicago Tribune (1922),[18] a building of great interest (figs. 9, 10). There is an absolute modernity in coupling the purity of the visible structure of reinforced concrete with the investigation of color that, especially in the movement of the masses of the high part, produces a double sculptural and tonal rhythm; the accentuation of the enormous shining words of the Tribune sign produces a complex mechanical beauty which has not yet been surpassed.

Holland, one of the first countries to understand the need to return to a rational spirit in architecture, represents among all these countries a place where perhaps the new ideas have reached a more radical application. In any case, one cannot deny that its architecture seems to have a perfect relation with the surroundings. However, because of the heavy and dark appearance produced by the use of traditional brick, or because of the mistake of frequently pushing this rationalism beyond the limits that an aesthetic rhythm ought to impose, their work is at some distance from our spirit.

An intermediate tendency, that merges the constructive purity of the latest German styles with the mathematical rationalism of Le Corbusier, seems the most interesting. We can cite the large house (1922)[19] by the architects Van Doesburg, Van Eesteren, and Rietveld (of the De Stijl group) that, in spite of the excessive concessions to effects of a scholarly but slightly arbitrary Cubism, realizes a noteworthy rhythm of volume and floors (fig. 12). The huge projections of the penthouse and terraces make clear the possibilities of the new material. On the other hand, a house built only by Rietveld in Utrecht (1924–1925) demonstrates the excesses the tendency can reach when pushed to extreme limits. Here, architecture is reduced to an abstract play of planes with no constructive value that, alternating with exposed elements in iron and wooden frames, transforms the house into the appearance of a curious precision instrument—an effect that does not go beyond that of scene painting for mechanical ballet.

In any case, even the best examples of Dutch architecture offer us no new elements that are not already revealed in

German architecture. To these significant characteristics of Dutch architecture we can add the project by the architects Byvoet and Duiker for the Chicago Tribune competition (1922).[20] The massive, if not excessive, application of the alternation of entire glass walls is carried out with the enormous projections of continuous jutting balconies. All the same, it gives an impression of considerable rhythmic impulse (fig. 11).

The recent architectural rebirth in Russia deserves more than a slight mention. To be sure, even here, the influence of the latest German tendencies is noticeable, at least from its beginnings. However, a spirit of independence and personality is also revealed, a great zeal for investigation that, if it sometimes goes beyond constructive and aesthetic logic, nevertheless exposes many and, perhaps, realizable possibilities.

As a perfect example of these new investigations, we cite the project by Vesnin for a Labor Exchange in Moscow (1923),[21] that achieves results that are independent of the German style (fig. 13). One has to look at the diversity of rhythmic volumes given to the motif of the skeletal structure visible on the outside, particularly in the tower; the sound distribution of the windows; the preoccupation with the plastic composition of the movement of angular and polygonal masses; and the very new idea of broken voids at certain points of the façades. And there is a true warning for our architecture schools in the projects for Industrial Buildings of the Upper School of Art and Industry in Moscow,[22] in which the technical aesthetic, still much too ignored by us, appears in a full and flourishing development.

We have left France for last and for two reasons: first, its particular position with respect to other contemporary architecture concerning that mathematical tendency which we would like to call "Corbusian"; second, some inferences this lets us make that will also serve as a conclusion.

It is known that the Le Corbusier phenomenon is an isolated one; it appears that he has now begun to have some followers in France. In any case, it had no precedents as the architectural movement there represents in its entirety—in spite of Perret and, in a lesser sense, Roux-Spitz and Tony Garnier—a *retardataire* spirit. The theories of Le Corbusier are too well-known to be discussed here particularly since so much has already been said about them. The greatest error was in considering him as a kind of Futurist, while instead he is fundamentally a *traditionalist*, inclined by exactly the essence of his traditionalism to proclaim that, as *in every great era*, the architecture of today must be perfectly modelled on today's necessities. In this sense, he said that "we live under the sign of the machine," a phrase which, misunderstood, provoked a thousand absurd interpretations. We have already said in our first article how the mechanical influence must be *logically* understood.

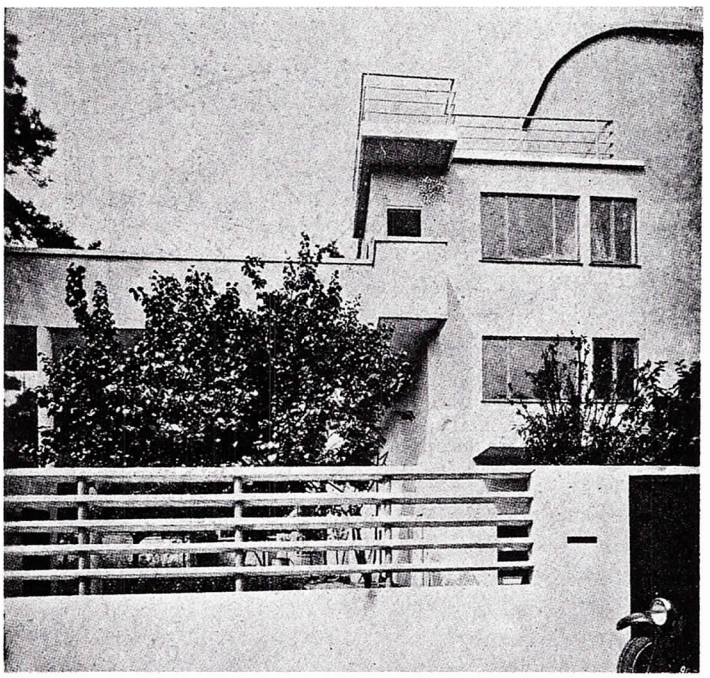
We admit that these theories, pushed to their extreme limit, have even been carried to excesses; and that, especially in certain of Le Corbusier's interiors, when these are not content with investigation of a refined, though still Cubist spirit and undergo a too rigorous application of pure rationality, they can produce impressions of a clinic. But, in the whole of his practical and polemical work, Le Corbusier is an exceptional *innovator* among the flourishing of so many false geniuses. The example of this man will never be adequately admired. He is a man who dares to declare, in perfect humility, that he is content to furnish his architecture with a simple skeleton as a primary basis upon which future times will be able to elaborate complete forms of beauty. We repeat: Le Corbusier is an *innovator*, and if all his theories cannot be interpreted to the letter, his tendency is considered, nevertheless, as a providential cure against architectural rhetoric and as a prodigious antidote against the old and, what is worse, the false new.

We shall not describe those works of Le Corbusier and Jeanneret which are very well-known; rather, we want to bring into evidence that while, at times, some detail—for example, the large wrought iron balcony of the villa at Vaucresson (1922–1923)—can be argued about, in most cases *rarely* has contemporary architecture reached the perfect proportion, the truly Hellenic purity of the two individual houses in Auteuil (1924) in which the mathematical relationship of the various parts generates an impres-

*14. Lipschitz and Mietchaninoff houses, Boulogne-sur-Seine. Le Corbusier and Pierre Jeanneret, architects, 1924–1925.*

*15. Model for a "Citrohan" house. Le Corbusier, architect, 1921.*

*16. Houses in Dessau. Walter Gropius, architect, 1926.*



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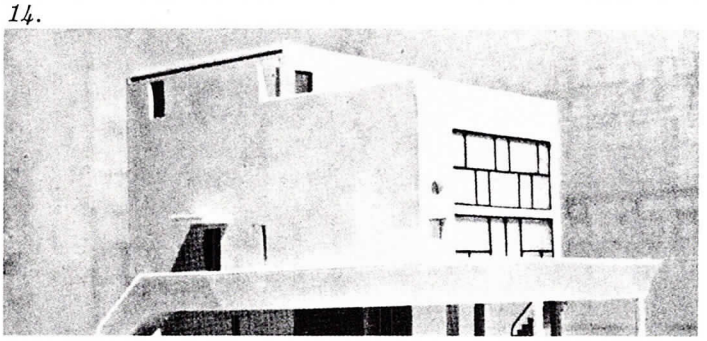

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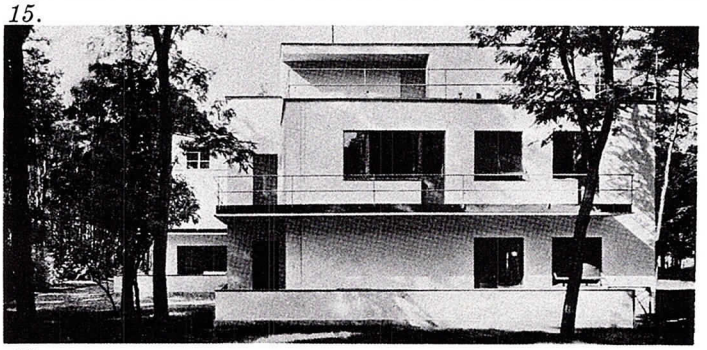


*16.*



sion of abstract rhythm. It is also worth noting the aesthetic of the beautiful curved mass *"sur pilotis"* of the same building in Auteuil, and that of the side of the Lipschitz house in Boulogne-sur-Seine (1924–1925)[23] in which the same new spirit appears (fig. 14).

With a totally different intonation from the German, in fact with a typically French character, Le Corbusier avails himself of those same fundamental elements we have already shown: the *immense window* (the interesting *atélier* of the painter Ozenfant [1923] and the houses in Auteuil); the *horizontally banded windows* (in all Corbusian buildings and particularly in the small villa on Lake Geneva [1923–1924]); the *continuous jutting balconies* (model for the Citrohan houses [1921]) (fig. 15);[24] the *big vertical window* which splits the façades from top to bottom (the villa at Vaucresson [1922–1923]).

And now the *evidence* we hinted at: among the models of the small Citrohan houses of Le Corbusier, certain small models by Walter Gropius for houses in series (fig. 16) and, more generally, among all the works of Le Corbusier and those of Gropius and of the school or group which derives from them, there exists a *similarity of certain forms* which is very noticeable, which anybody can verify. Therefore, in countries of a much different character, *from the logical and rational solution of analogous problems, analogous creations are necessarily born.*[25]

We have already said that "it is soon the time of an internationalization in the appearance of industrial buildings." Observe, in fact, how all silos, from those in Europe to the magnificent ones in the United States and Canada, already have the same appearance (perhaps these have the most perfect technical aesthetic and one that, not only for its occasional resemblance to the tomb of Eurisace, is informed with a true classicism):

The truth is that reinforced concrete, in presenting the possibility of a *new* aesthetic, has overturned architectural research on *its own foundations* and has already been able to establish some of those *absolute forms* which we have revealed in *all* countries, and which are its *foundation*.

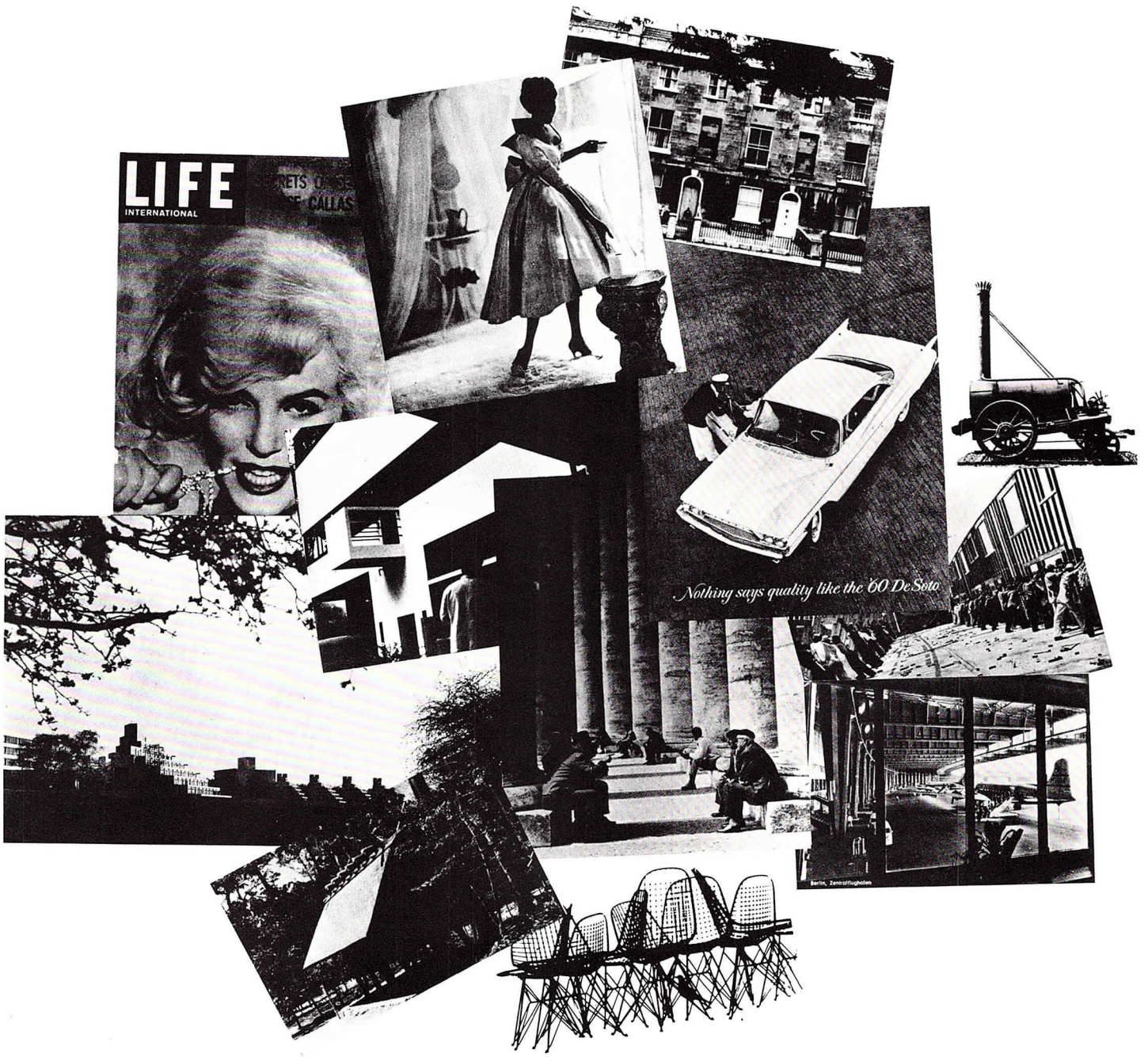
102 The proof of the perfection to which ancient architecture arrived rests in the creation of new *fundamental* forms—almost an alphabet of architecture—that became the patrimony of all civilizations. Today, from the new necessities and from a rational employment of materials, some *forms*, as we have seen, have already been *born* that represent the perfect and only solution to the given necessities, and can be considered as an *international patrimony* in the same way that the elements of the column and arch formed the basis of past architecture.

Figure Credits

1, 8. Walter Müller Wulckow, *Bauten der Arbeit und des Verkehrs* (Königstein im Taunus and Leipzig: Karl Robert Langewiesche Verlag, 1929).
2–7, 9–11, 13. Walter Gropius, ed., *Bauhausbücher I: Internationale Architektur* (Munich: Albert Langen Verlag, 1925).
12. Joost Baljeu, *Theo van Doesburg* (New York: MacMillan Publishing Co., Inc., 1974).
14. Le Corbusier, *L'Esprit Nouveau: Almanach d'Architecture Moderne* (Paris: Les Editions G. Crès et Cie., 1925).
15. Le Corbusier, *Towards a New Architecture* (New York and Washington: Praeger Publishers Inc., 1960).
16. Walter Müller-Wulckow, *Wohnbauten und Siedlungen* (Königstein im Taunus and Leipzig: Karl Robert Langewiesche Verlag, 1928).

1. See Il Gruppo 7, "Architettura," *Rassegna Italiana*, December 1926.
2. Given the nature of the magazine [*Rassegna Italiana*] which is our host and which does not allow illustrations to be inserted in the text, which would be desirable in an article of this type, we are forced to refer the reader, for the most important buildings which we will discuss, to books or architectural magazines. We shall try, for the principle ones, to substitute a succinct description for this lack of illustration.
*Oppositions Editors' Note. Most of the illustrations mentioned in these notes and in the text have now been inserted into the text.*
3. See *Moderne Bauformen*, October 1925, p. 321.
4. *Bauten der Arbeit*, p. 23.
5. We wanted to refer to this gothicizing tendency when we hinted in the preceding article to the "distinct character of nationalism" of certain German buildings, and to the error of those who believed they were renewing Italian architecture by transplanting these structures in a way which was "disoriented among us."
6. *Moderne Bauformen*, January–February 1926, p. 33.
7. Gropius, *Internationale Architektur*, p. 52.
8. Ibid., p. 22.
9. Ibid., p. 21.
10. Ibid.
11. *Der Messehaus-Wettbewerb*, p. 59.
12. Gropius, *Internationale Architektur*, p. 23.
13. We are grateful to be able to point out some very recent and noteworthy buildings of the architect Erwin Gutkind in the Laukwitz and Paukow quarters in Berlin, for which he kindly sent us photographs.
14. Gropius, *Internationale Architektur*, p. 29.
15. *Bauten der Arbeit*, p. 41.
16. *Moderne Bauformen*, September 1925, pp. 295–296.
17. *Moderne Bauformen*, November 1925, p. 361.
18. Gropius, *Internationale Architektur*, pp. 42–43.
19. *L'Architecture Vivante*, Autumn 1925, Plate VII.
20. Gropius, *Internationale Architektur*, p. 40.
21. Ibid.
22. *L'Architecture Vivante*, 1926.
23. *Almanach d'Architecture Moderne: L'Esprit Nouveau*, 1926, p. 108.
24. Le Corbusier, *Vers une Architecture*, p. 201.
25. Architect Walter Gropius kindly sent us photographs of his latest buildings at Dessau which strengthen our research.

# Reviews, Letters and Forum


LIFE
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Nothing says quality like the '60 DeSoto
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**On Alison and Peter Smithsons' Without Rhetoric: An Architectural Aesthetic 1955–1972**

Alison and Peter Smithson. *Without Rhetoric: An Architectural Aesthetic 1955–1972*. 1974, Cambridge, Mass., The MIT Press. 97 pp., $6.95.

Kenneth Frampton

*Kenneth Frampton is a Fellow of the Institute for Architecture and Urban Studies and an Associate Professor at Columbia University, New York. He is presently in Europe on a Guggenheim Fellowship working on a study of Purism.*



In his introduction of 1966, Vincent Scully acclaimed Robert Venturi's *Complexity and Contradiction in Architecture* as one of the most seminal works on architecture to have appeared since Le Corbusier's *Vers Une Architecture* of 1923. Now, a decade later, the publication of Alison and Peter Smithson's *Without Rhetoric: An Architectural Aesthetic 1955–1972* brings one to the threshold of an equally extravagant claim and, while resisting the temptations of such a broad comparison, one still may argue that this text is one of the most significant and fertile pieces that the Smithsons have produced to date; significant because it demonstrates in an elliptical way the gross vulgarity and irrelevance of much of our present architectural sensibility, and fertile because it indicates with considerable subtlety some strategies for transcending this *impasse*.

In as much as it is an essay in architectural sensibility, *Without Rhetoric* is a rarity in itself. One could surely count on the fingers of one's hands the number of works that have dealt profoundly with this topic. From the twentieth century, one thinks of Loos, of Mies, of Le Corbusier, of Duiker, of Neutra, possibly of Adrian Stokes, and even of Worringer. From the nineteenth century, one surely turns to Pugin, Viollet-le-Duc, to Ruskin, and in a negative sense to Morris. Other than such illustrious figures, most architectural writers, be they architects or critics, have had neither the temerity nor the capacity to attempt and achieve so awesome a task. The Smithsons then are to be doubly applauded; firstly, for achieving that which for others has all too often proved impossible and secondly, for the delicacy of the sensibility they proffer.

It seems essential to the Smithson sensibility that *Without Rhetoric* is formulated as a continuous text, loosely organized around retrospective themes—ranging from a recapitulation of their initial perceptions of the 'pop world', first celebrated under the evocative title of "But Today We Collect Ads," down to their long standing re-evaluation of Mies van der Rohe; here introduced under the title "Without Rhetoric/Calm as an ideal." As with their *Team 10 Primer* of 1956, the continuous text, studded as it is with asides, footnotes, and framed quotes, cannot help but present itself as a looped discourse which, like a composition with changing parts, may be entered at any point to almost equal effect. The implicit lack of rhetoric finds its reflection here in the non-hierarchic structure of the text, which stresses the delicate and synthetic nature of the argument.

It is necessary to distinguish between sensibility and style and to note that what the Smithsons have in mind is not so much the style of Mies *per se*, as that which is contingent to his approach, either by way of material expression or as a result of the particular way relationships are established in space. "We should not," they write, "look at his buildings for what can be lifted off to paper over the next client's programme or to lose our aesthetic problem: they are to be seen as a vehicle conveying the self construction, the self control and the reticence now needed by an architect" (p. 44). Given this *caveat*, it is hardly surprising that the Smithsons should choose by way of illustrating "Calm as an ideal" a scheme as self-effacing and unfamiliar as Lafayette Park, Detroit, designed by Mies in association with the planner Ludwig Hilberseimer. Here the neo-Radburn juxtaposition of housing and parking is as direct as it is appropriate, neither element gaining dominance over the other; while a certain absence of plastic subterfuge, masquerading as art, seems to have had the capacity of assuring both the built form and the layout a certain freedom from excess in either rhetoric or sentiment. It says much for the Smithsons' discretion that they should accord priority to Mies' residential work in the States and to his inexplicably repressed and extremely *sachlich* silk factory built at Krefeld in 1932, rather than to the well-known monumental pieces of his final years, such as the Seagram Building in New York or Crown Hall at IIT in Chicago.

Mies, for the Smithsons, is obviously to be valued not so much for his latent neoclassicism or even for his typological approach, as he is for his mastery of technique and for his anti-rhetorical attitude to form. Thus the Smithsons write of their sensibility, deriving from Mies that; "Mies had a special feeling for *materials as luxury*; it is seen in an obvious way in the photographs of early exhibition work, in the Tugendhat House and the later Seagram Building, but it is in all his work: it is there in the flat, wide, rendered wall surface at the Afrikanischestrasse Housing (1925), bringing out the essence of cement rendering as such and playing a part in the way whereby the ordinariness of the programme and the site is raised to a kind of dignity. And, the brick of the Lange House (1928) is as brick as brick can be . . . dour, puritan, absolute . . . the luxury rests in the fact that the observer is made aware of the essence of each material; in this attitude Mies was amazingly consistent" (pp. 20–23).

For the Smithsons, the importance of Mies and equally the School of Mies—they cite the Chase Manhattan Bank in New York with clear approval—lies not only in its perfection of technique (in its "cargo-cult architecture of technology") but also in its habitual concealment of services—its provision of well-serviced anonymity. The reflection of this same sensibility and motivation in their own work after the mid-fifties, makes it clear that what the Smithsons have aspired to after Mies has been the provision of a technically efficient and comprehensive *beinahe nichts* environment; that 'almost nothing' status of Miesian coinage, such as they were first to attempt in their Economist Building, London, of 1966. That this mature evaluation of *beinahe nichts* must of necessity put the self-conscious industrially-de-

signed consumer object in its place (irrespective of whether its formal affinities are 'popular' or 'objective') is clearly evident from their postmortem to the Economist. "So too with the control of mechanisms and services in a large building; the range of needs to be served, the unpredictability of the methods of connecting together, the styling of the casings and so on, of quite simple things like switch gear, thermostats, etc., etc., tend to produce a confused jumble which speaks not at all of their purpose but rather about the futility of *design* which reminds us all too clearly why we used the word in a derogatory sense in the late 'forties and early 'fifties. And what are these things doing? Controlling the light, and the air, and the disposal of waste products. The light *fitting* is acceptable in the hall or parlour of the small house, and the bulb and the shade are the symbols of the drawing rooms of the Stars, the 'thirties cinema image of the bright lights of the city—but five hundred of them in an office building are ridiculous and distracting. So too with the radiator: one in a room is substitute for a fire, something to angle the chairs to, but five thousand in a hospital becomes coelocanthic . . . like being a prisoner of the nineteenth century. . . . Ambient light, ambient air, no fuss about detail—awareness in a quiet way of sweet functioning: that is architecture; and in a large building its achievement involves us with the organising of the mechanisms and services with a clear formal objective in mind. For, as Kahn says, 'the suspended ceiling' speaks about nothing—not of the services it hides, not of the structure which is above, not of the space below—nothing, except perhaps the manufacturer's taste" (pp. 47–48).

Nothing to my mind is more central to the Smithsons' thesis than this complex and almost casual passage which evokes, without once mentioning his name, all the prime cultural anxieties of Adolf Loos. For what do we have here if not Loos' anti-*Gesamtkunstwerk* disgust at all the artificial compensatory aspirations of total design? Or what, if not Loos' stoical nostalgia for the lost agrarian vernacular (c.f. his "Architektur 1910") here faintly echoed in a passing but sentimental reference to the folk virtues of Hollywood's mid-cult or what, if not Loos' parallel and opposed concern for the public authority of classicism, here subtly invoked in the public context of a large structure, as the attribution of virtue to the repetitive anonymous norm? And the paramount issue here is the inevitability of repetition and the necessity for the architect to come to terms with this, through the triumph of the larger whole over the sheer replication of the parts. Mies plays a salient role at this juncture in the formation of the Smithsons' aesthetic; most particularly for his capacity to achieve a normative high level of built production through his ordered assembly of objects fabricated *en serie*.

Irrespective of the demands and capabilities of industrial production, however, repetition for the Smithsons is the essence of architecture, as essential to the colonial foundations of the Hellenic world as to the speculative urban developments of the nineteenth century; a supra-architectural quality that depends for its ultimate significance on the way in which the repetition is handled. Paradoxically enough, it is on this issue that the Smithsonian aesthetic begins to part company with the Miesian, for the emphasis shifts here from the one-off building of the later Chicago School to the continuous urban fabric as a 'living' habitat. The Smithsons turn to Bath for a community comprised of cohesive repetitive fragments and to its houses, which for them approximate to an ideal; an ideal wherein an outer classic formality is more than adequately compensated by an inner organic informality; a house which "we can make our own, within the limits of the fashion of the time, and without feeling pressure either to communicate our trivial uniqueness or to conform absurdly" (p. 66). What is this if not a re-assertion of the importance of the collective façade? The front and the back, the mask and the face, the public and the private, the dialectical attributes of building and urban form which stand today in need of intelligent revival. For, as the Smithsons go on to point out, our future urban environment will increasingly consist of nothing but houses; an imminent situation where the supermarket will have replaced the corner shop to yield an environment consisting of little else save the generic dwelling unit. This, as they say, should not alarm us unduly, since in Bath there are "many hundreds of 'just houses' as liveable in and as relaxed as anywhere, achieved through a rich and flexible form—language based entirely on the *house*. . ." (p. 75).

Thus we find the Smithsons at one with the Miesian sensibility, in as much as it guarantees a well-serviced anonymity, and divided from it, in as much as existentialism must always find itself opposed to the repressive tendencies of ruling taste. However, it is the Smithsons and not Mies who are to suffer this split for there is surely nothing in the least existentialist about Mies. To this end the Smithsons seem to unconsciously proffer a third term; one that appears to be capable of mediating between anonymity and being. In one guise, this term is the city of Bath; in another, it is the classical *Ur* forms of the Greek *temenos* and the Doric column—a kind of aboriginal classicism that is as foreign to existentialism as it is to the repressive domain of ruling taste.

The whole argument acquires a metaphysical color at this juncture. The Doric column is asserted as a primal western metaphor for architectural structure, comparable in its dense archetypal form to the pregnant profiles of the Ise Shrine. They write: "The essence of the Doric is rectangularity of platform and an unusually dense formulated language. . . . It is dense in the sense of doing a lot of internal explaining, of telling us what to expect:

for example the angle of slope of the underside of the soffit of the cornice lets us know, without it being necessary for us to move away from the flank of the temple, the slope of the roof and therefore the pediment. A wall with an incised line, or a tiny projection, tells us to expect a column around the corner. Even the pitching of the floor lets us sense where the outside is. . . . It is no exaggeration to say that a single fragment of the temple can put us in touch with the whole form through eyes, feet, skin sensation. This is not metaphysical nonsense; we are actually told about dimensions, angles, proportions of the whole in the fragment, which is not an absolute part in the Renaissance sense, it is an *explaining* part in the primitive sense. This is what makes the parallel with the Ise shrines as extraordinary, for at Ise not only are we told of the whole by a stretch of fence for example, but the same sense of affront can be experienced—of loss of meaning, of sacrilege? —when the Order drifts away from its explanatory role" (p. 52).

This all but Heideggerian feeling for the primitive essence of both the Acropolis and the Ise shrine, or in terms of their primal elements, for the Doric column and the timber *jomon*, finds its reflection in the authors' highly perceptive analysis of Greek site planning; namely their speculations of the late fifties which, in close anticipation of Vincent Scully's *The Earth, The Temple, and the Gods,* were prescient in the realization that *place* and not *space* was the sole inflection by which the pantheistic artifacts of the Ancient World could have come into being.

The authors argue that only an idiosyncratic location would have been capable of imbuing the *temenos* with adequate resonance, for only by its incision into the earth could it have acquired its essentially mythical significance. As the Smithsons write: "We came to the conclusion that there was no Greek space in his sense [the South African architect, Rex Martienssen]; that is, things were simply put down into the charged void" (p. 55). Such a conclusion would surely be equally applicable to the sacrosanct forest site of the Ise shrine.

For Heidegger the very appropriation of place by man is sufficient to render it sacred and something of the same sensibility clearly informs the latter half of *Without Rhetoric*, serving to associate in an unexpected way the ruins of the Argive Heraeum with the 'living' remains of Bath. Nothing could be less Miesian than the Smithsons' appraisal of Bath, particularly when they write of it as exemplifying a rapidly vanishing form of urban persistence; "There are very few places in the world where one can still see and feel the force of past form. Places where through choice or poverty the past still lives in the present—the doorsteps still in place, the first stones on the pavements and roads, the original locks and hinges—not all there, but neither too elaborately restored or replaced by counterfeits" (p. 66).

But then a paragraph later we read something that could be thought of as evoking once again the Miesian notion of *type*: "In many old cities much of the feeling of 'control', of conscious design, is due to few materials traditionally used. An easy example: look on the roofs of nineteenth-century London or Paris . . . a sea of roofs, all *different*, but in fact all the same . . . the same roofing material at the same pitch, with roof-lights built in the same way (but in different sizes) and so on; . . . a strong feeling of order and control: but in Bath the sense of control is the result of the conscious application of formal rules. In the course of time the rules become part of craft thinking; the formal language being understood by all and contributed to by all. That the rules were understood by all meant they were extended far beyond the text-books" (p. 67).

And here surely the enduring problematic of this anti-rhetorical sensibility is rendered complete, for the argument has been brought full circle. For here what first appears to be *type* is asserted as *vernacular*, and then what appears to be *vernacular* is finally asserted as *type*, and we are left to ask is it one or is it the other? Or is it neither or is it both? And, finally, what significance could any answers to these questions have for the way we might build in the future? The delicacy of the sensibility remains but the manifold problems that are contingent on it are nowhere fully enjoined. For the prime dilemma posed by both *typification* and the vernacular surely lies in this; in circumstances where the vernacular has long been vanquished and in which the discrete type object is the pre-condition for serial production, how may we yet enjoy the normative 'ambient' advantages of industrialization and still sustain those figurative conditions of temporal and physical continuity that are essential to the psychological appropriation of *place*. This is the issue that *Without Rhetoric* has the temerity to pose but, as might be expected, it falls short of offering a definitive answer. It proffers instead a complex sensibility for that moment in creation where logic falls short.

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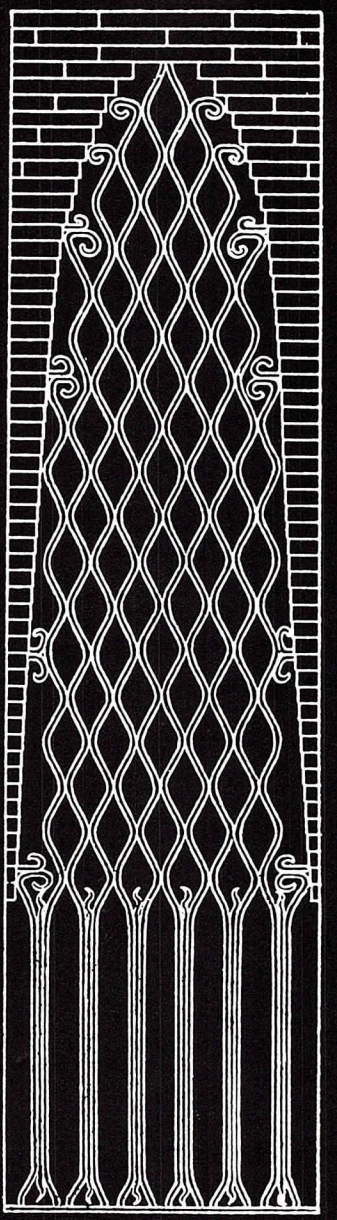

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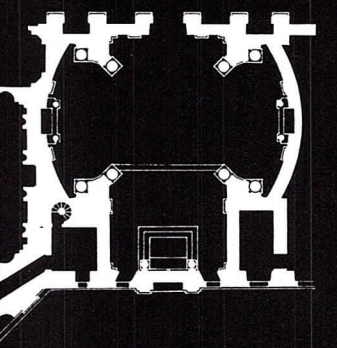

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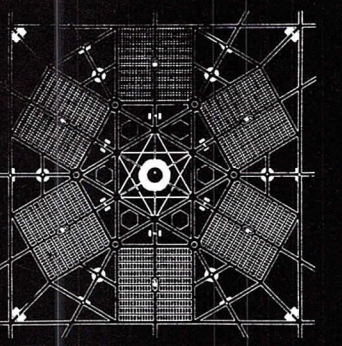

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