

design

"An amusing ode to a method of design that was as subversive as it was sustainable when the book was first published in the early 1970s."

Jane Herman, "Off the Shelf," *New York Times*

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*Kirkus Reviews*

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"Anybody who has ever used a bottle as a candleholder or a nail file to turn a screw is an adhocist—and [Adhocism] is dedicated to this cult of improvisation."

*London Daily Mail*

Cover image: Ad Hoc Chair designed by  
Nathan Silver

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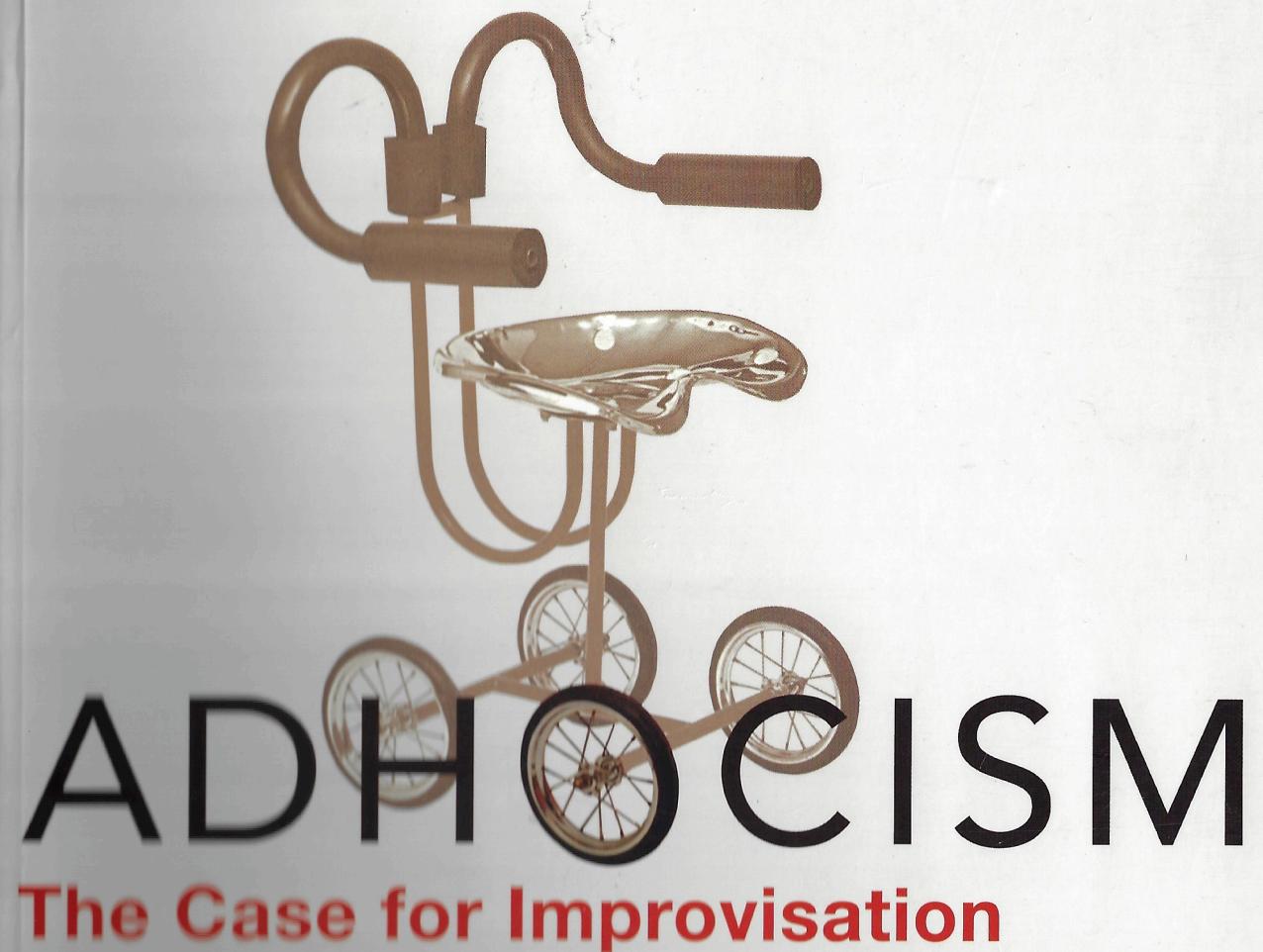
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ADHOCISM

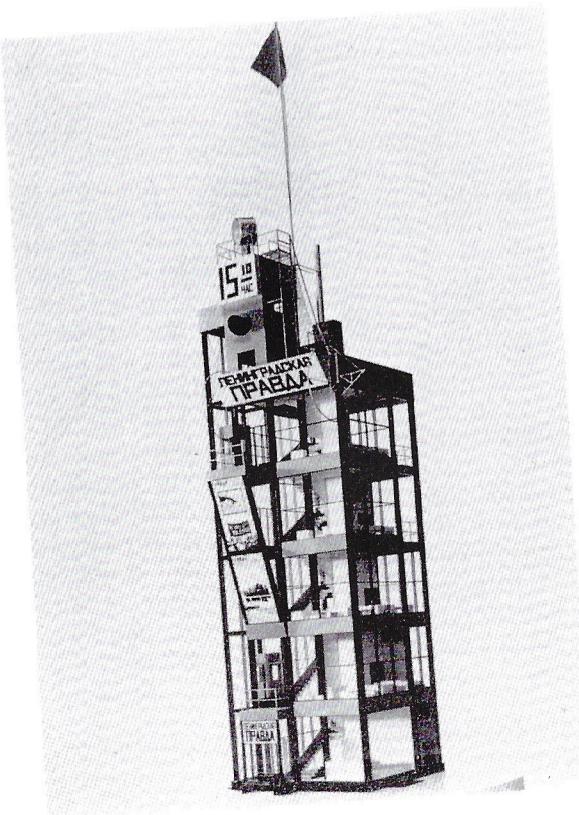
expanded and updated edition

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Charles Jencks and Nathan Silver

## 5 Towards an Articulate Environment



(73) *Anywhere, Park Avenue*, 1970. The present environment is tending towards extreme visual homogeneity. As a result, written signs have to explain buildings—"bank, office, church" etc. It's as absurd as a blank canvas titled "This is a Rembrandt"

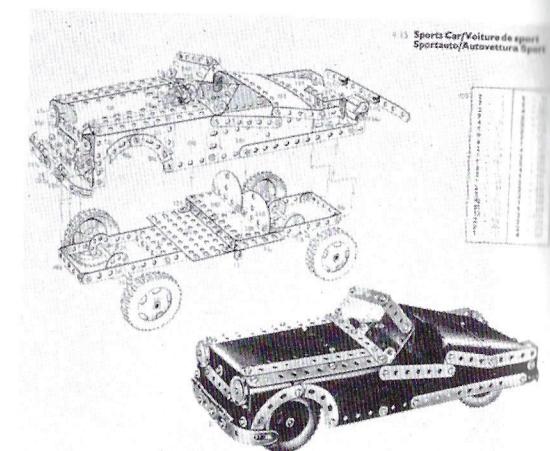
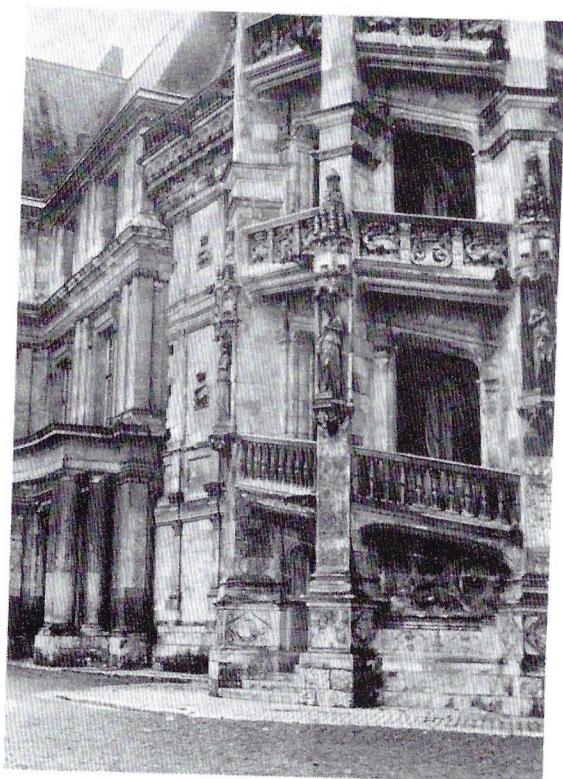
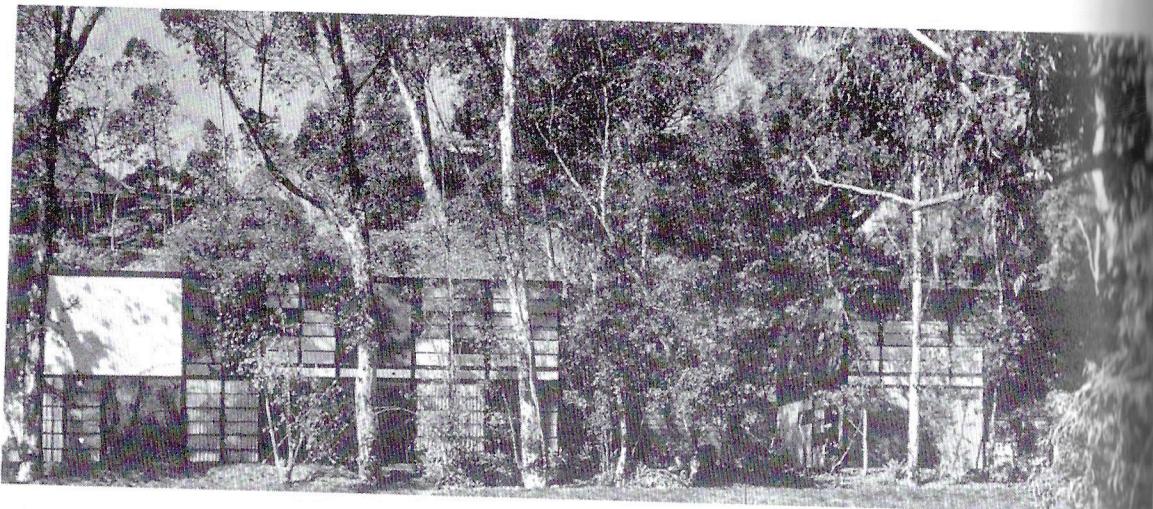
(74) *Vesnin Pravda Building*, 1923. Already in the twenties the Constructivists formed an articulated architecture made up *ad hoc* from heterogeneous objects: loudspeakers, elevators, searchlights, parts of the structure, signs and the projected copy of the daily newspaper

The present environment is tending towards both extreme visual simplicity and extreme functional complexity. This double and opposite movement is eroding our emotional transaction with and comprehension of objects.

In opposition to this, adhocism makes visible the complex workings of the environment. Instead of an homogeneous surface which smooths over all distinctions and difficulties, it looks to the intractable problem as the source of supreme expression. From problems, from the confrontation of diverse subsystems, it drags an art of jagged, articulated cataclysms that shouts out the problem from every corner.

By combining diverse subsystems *ad hoc*, the designer shows *what* their previous history was, *why* they were put together and *how* they work. All this articulation is pleasing to the mind and allows an experience of a higher order.

Meaningful articulation is the goal of adhocism. Opposed to purism and exclusivist design theories, it accepts everyone as an architect and all modes of communication, whether based on nature or culture. The ideal is to provide an environment which can be as visually rich and varied as actual urban life.



(75) Charles and Ray Eames, *Case Study house*, 1949. *Haute Couture* adhocism. All the harmonious parts are out of a catalogue: industrial sash, plywood panels, metal decking, joists, etc. (see also 211)

(76) *Meccano sports car*. The "How" and "Why" are visually dramatized here; compare with photo (83)

(77) *Blois*. The Classical structure at left has been added on to the Renaissance staircase and floors at right; even the cornice and floor lines do not match up, and thus the juncture is clear and direct

(78) Viollet-le-Duc, *Design for a concert hall* in stone, iron and brick (opposite page). A polyhedral roof of iron members and ribbed masonry contrasts with semicircular vaults and canted struts. Viollet-le-Duc argued that exposed iron was best structurally, while masonry was best for climate control

### From an intractable problem comes expression

The double and opposite movement towards extreme visual simplicity and extreme functional complexity is eroding our understanding and appreciation of objects whether they be consumer products or buildings, furniture or vehicles. They are becoming inarticulate on a communicative level while incomprehensible—even invisible—on a technical level. In opposition to this growing visual impoverishment and muteness, adhocism posits a functional expressiveness, the clear, dramatic accentuation of the complex meanings which are pervasive in urban society. Instead of the quiet, sleek hood of a car, it concentrates on the motor within.

One of the most obvious ways of making the environment comprehensible is by accentuating subsystems of which it is composed. On a small scale, the architect Charles Eames has constructed his own house from ready-made subsystems which are mass-produced and displayed through a catalogue (75). This house has all the virtues of classical modern architecture: it is clear, crisp, integrated and beautifully put together even though it combines parts from different sources. Every choice which has gone into its realization has been directed as well by the tenets of visual harmony and good taste, thus showing that even adhocism can produce elegance and simplicity when they are desired. The consistent visual harmony that characterizes the *ad hoc* use of Meccano and Leggo Toy Systems (76) is another example of the integration that is possible. But both these examples show an *a priori* bias towards integrated results symptomatic of the first machine age. They deny the diversity of possible subsystems, smooth over real differences between the parts and tastefully integrate one area into another.

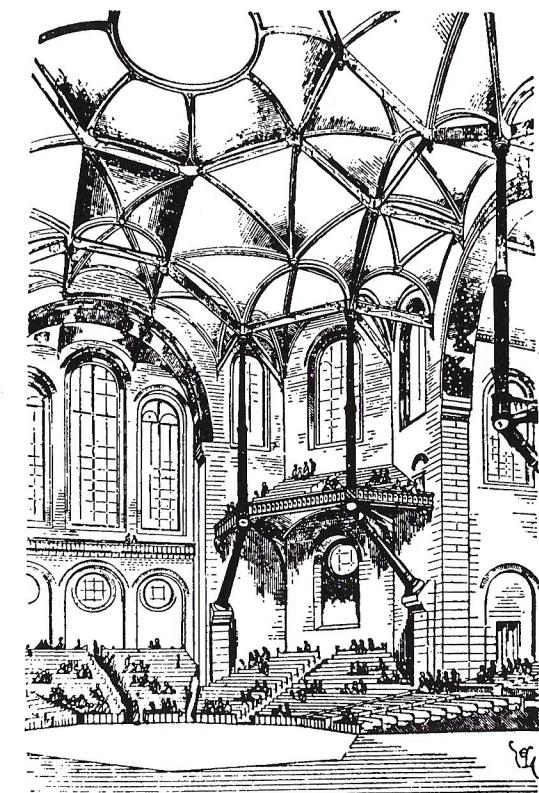
A much more direct approach to the same problem is shown by the accretions which are made in different cultures to buildings. Thus at Blois, in the Loire Valley, through a series of happy accidents over several hundred years each epoch tried to rebuild the whole château but was only able to add on its separate piece (77). Gothic, Renaissance, Classical and Baroque are smashed into each other around a unifying courtyard in a sequential juxtaposi-

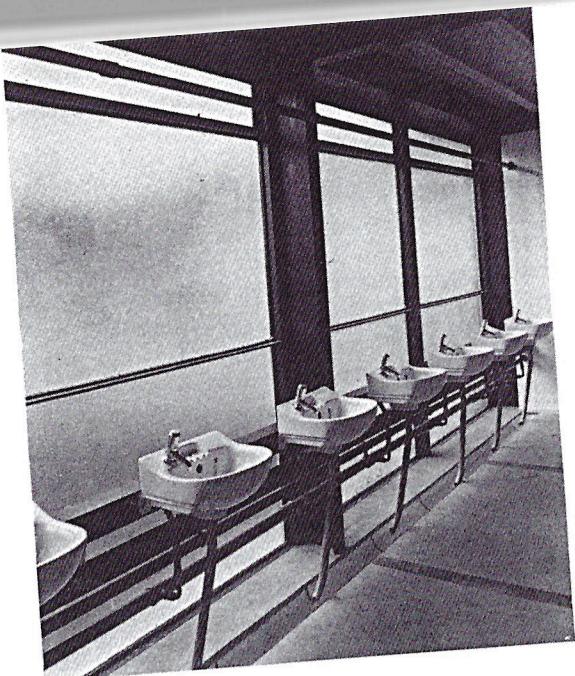
tion of styles. Far from disturbing us, it gives a striking image of each epoch's identity. As is often the case, adhocism resulted not from desire but rather from a recurrent lack of funds.

Usually when modern architects or theorists come across this kind of juxtaposition and medley of forms, all they can see is indecision. Thus Viollet-le-Duc is admired for his contribution of a rational functionalism to modern architecture, but is condemned by the historian Sir John Summerson for the lack of style of his indecisive constructions.

It is all marvelously clever, but I think you will agree that the result [78] is not very moving. It does lack style. It is rather like language invented *ad hoc*: a sort of esperanto evolved from the salient characteristics of other languages but lacking the vital unity which any one language possesses.<sup>1</sup>

<sup>1</sup> John Summerson, "Viollet-le-Duc and the Rational Point of View," in *Heavenly Mansions*, pp. 157–58. New York, 1963.



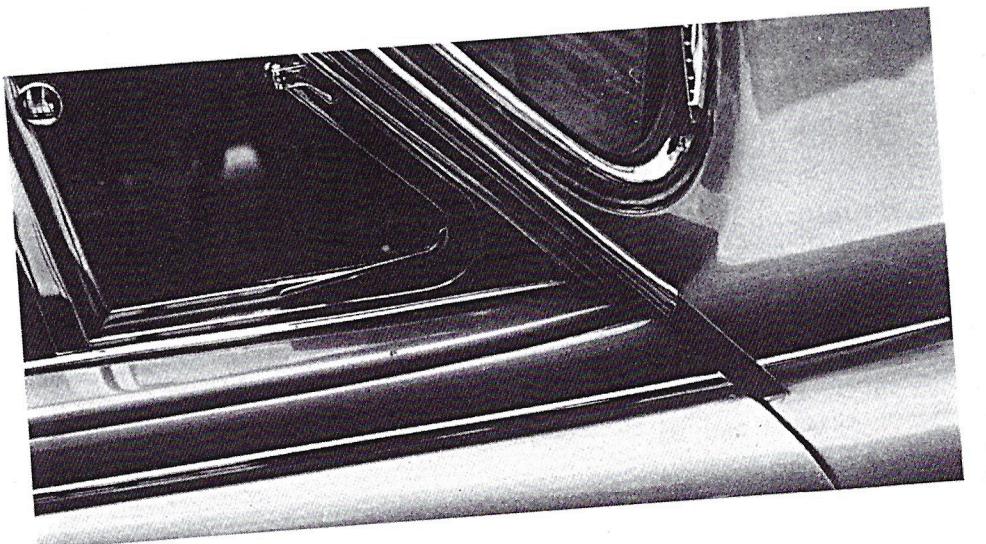


(79) Alison and Peter Smithson, *Hunstanton School bathroom*, 1954. Washbasins and other standard parts of an industrial civilization are used to achieve a stern, striking juxtaposition



(80) Mies van der Rohe, *Internal corner of the Seagram Building*, 1958. The half bay and lack of a corner mullion show a visual and intellectual inconsistency with respect to the rest of the harmonious building; the architect has tried to hide rather than confront this "impossible" problem

(81) Car joint between several consistent systems: rubber gasket, chrome channel, glass window, steel hood—a tortured play of forces results from the interlocking of systems



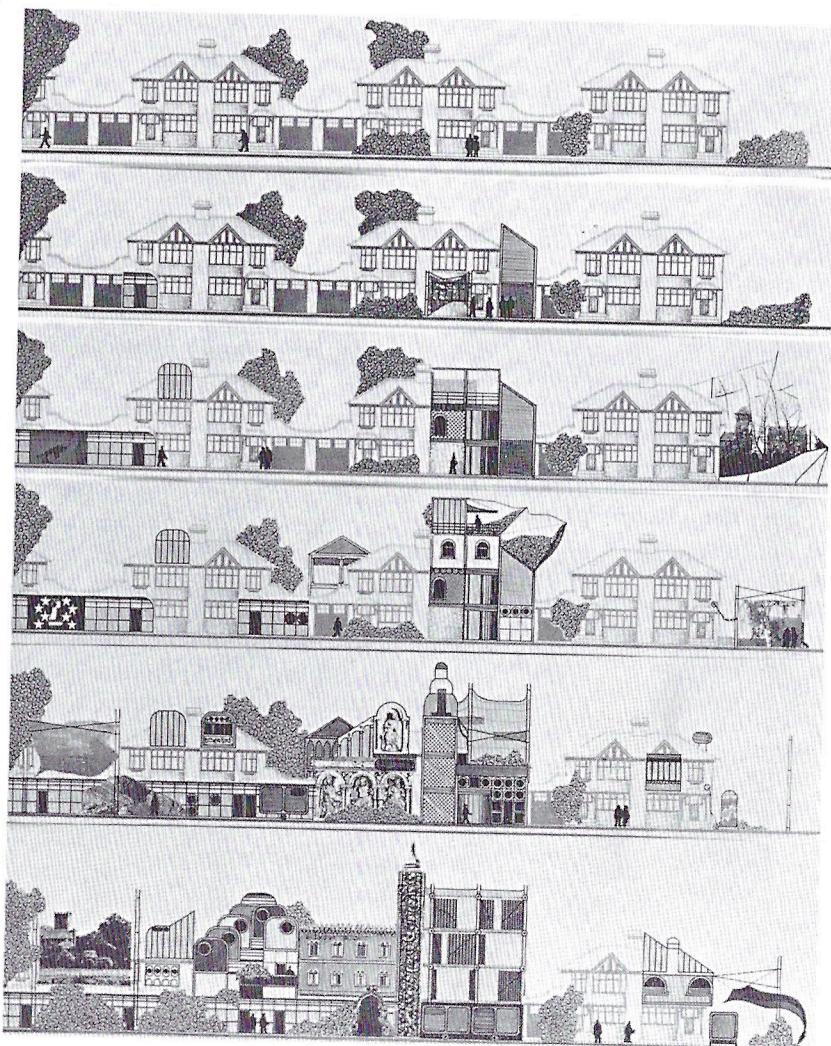
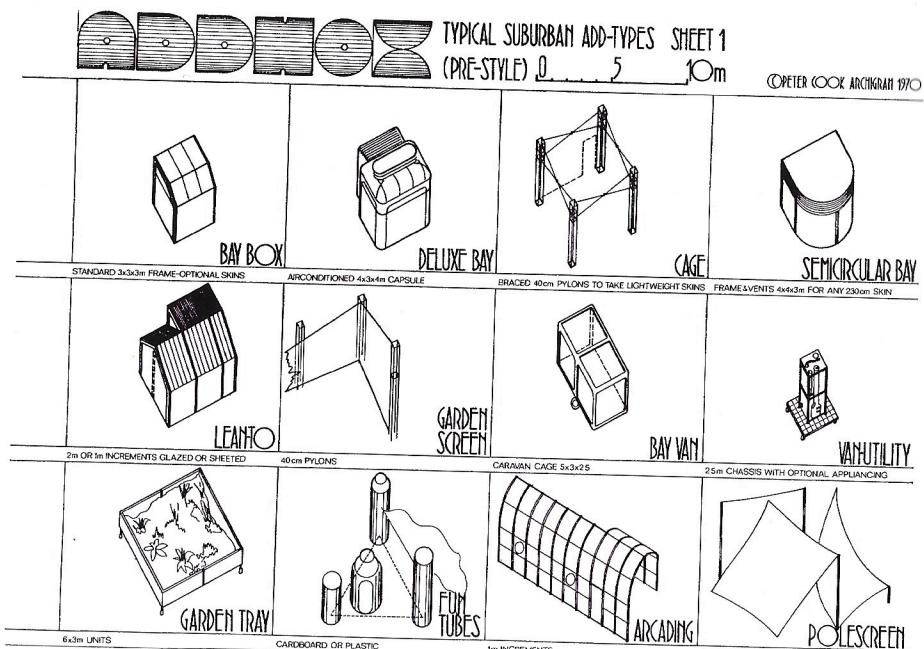
One problem with Summerson's description here is that it overlooks the many functional reasons which Viollet-le-Duc gave for having juxtaposed materials; but as great a fault lies in suggesting that the result is unmoving and without style. True, it is without the integrated style that those trained in "the classical language of architecture" have come to love and expect in any fabrication deserving of their vocation. But that only shows that once a classicist, always a classicist. Classical aesthetics of harmony, integration and consistency go so deep in our culture that even architects who start off by trying to contradict them, such as the Smithsons (79), end up returning to the fold and advocating taste and even the Spartan virtues of the Doric column. In the fifties the Smithsons advocated a form of "Brutalism"—straightforward realism towards industrial society; they saw it triumph around the world as an architectural movement, and saw it feed Pop Art, and then themselves turned on it with a vengeance which the newly converted reserve only for their previous errors. One is reminded of Goethe's classically misguided repudiation of his own brilliantly romantic youth.

Whenever a new problem arises that doesn't fit within accepted solutions, the first, natural reaction is to deny its very existence. This is essentially the ostrich method of solving problems, and its ubiquity in classical periods of the arts cannot be overlooked. Drama is sacrificed for harmony, truth for beauty. A recent case in point is the late work of the classicist modern architect Mies van der Rohe—particularly when faced with such intractable enigmas as the "problem of the corner" (80). Architects wrestling with this problem in the past considered it evidence of the imperfect earthly condition where no completely "correct" or "perfect" solutions exist. Essentially, the problem here is that an internal structural system cannot be reconciled with an external mullion and one or the other has to be made irregular. This inevitable irregularity represented to the classicist Mies a failure, a mistake in the nature of reality, and one that should be hidden from view. Yet unlike Mies certain architects faced this conundrum and tried to make a visual acknowledgment of the problem. They came to terms with the fallibility of the actual world and saw its inconsistency

as a metaphysical essence on a par with harmony. The inconsistency was in fact a spur to invention and the continual growth of the creative mind. Thus the corner, the juncture, the joint between any two consistent systems became for such Renaissance architects as Luciano Laurana and Michelangelo the stage for a cataclysmic struggle.

Instead of asserting in the face of reality that one universal solution, one material and geometry will satisfy all possible cases, it is admitted that some problems are intractable and allow several, botched solutions, none of which is entirely adequate. Problems exist to which there are no perfect solutions. This is just as essential and universal as underlying harmony. Adhocism celebrates the impossible problem, the question for which there is no final answer. From these recurrent enigmas it drags an accentuated conflict which dramatizes the imperfection of things. It acknowledges difficulties and instead of trying to deny them, makes them the subject for expression. Whenever there is a problem, look for the *ad hoc* juncture which results from this problem and mediates between conflicting systems (81). Auguste Perret epitomized the attitude of modern architects when he said "ornament always hides a fault in construction." In fact, as a positive gesture, ornament is the elaboration of an inevitable inconsistency. It articulates the point where structural forces come to a head and change direction, or it acknowledges the point where construction methods differ, where materials change because of a change in function.

In general, modern architects have tried to come up with joints that are consistent with the aesthetic of their building system. Furthermore, they have tried to design an all-purpose, mass-production system which would be low in cost and variable for different jobs. Buckminster Fuller, Le Corbusier and Walter Gropius have designed many such systems and, for instance, in Britain today there are over four hundred on the market. As if to prove that each one is flexible, or even universal, it is shown in a number of different contexts, with different arrangements. Yet no single system has been accepted and used often enough where its inherent economy can be realized. In most cases, brick building is still cheaper than system building. To counter this fact, the de-



(82) Peter Cook, *Add Hox Project 1971—Mon Repos Strip*. Different systems added on over time reflect the several lives of this suburban development

(83) Nathan Silver, *Dining Chair*, 1968. Made up of a tractor seat, insulating foam and wheels from an orthopedic supply house (for easy movement on a brick floor). The serendipitous association with a ram's head is a typically happy accident of adhocism

designer often launches an attack on the primitive mentality of the building industry, its old-fashioned methods and the lack of massive governmental support for his own system—any excuse for denying that his prior commitment to a *single*, harmonious system is itself part of the problem. If, however, designers were to accept four or five different existing systems and put parts of them together where warranted, they might have a total system which was cheap and open enough to work for any project (82). The desired goal is to combine any two closed systems either by designing a third joining system—concrete, rubber or any plastic or elastic material that can be stretched across incommensurable surfaces—or by finding the juncture that already exists. When these industrial systems are placed together and separated by a juncture, we will have a visually rich environment much more responsive to needs and much more exciting in its dramatic juxtaposition. Instead of an art of easy, flowing surfaces that denies the reality of problems, we can have an art of jagged, articulated cataclysms that shouts out the problem from every corner. For a system of packaging that encloses every different function and character behind a similar facade, we can have a mode of articulation that will explain a complex environment to men. By combining diverse subsystems *ad hoc*, the designer shows what their previous history was, why the parts were put together and how they work.

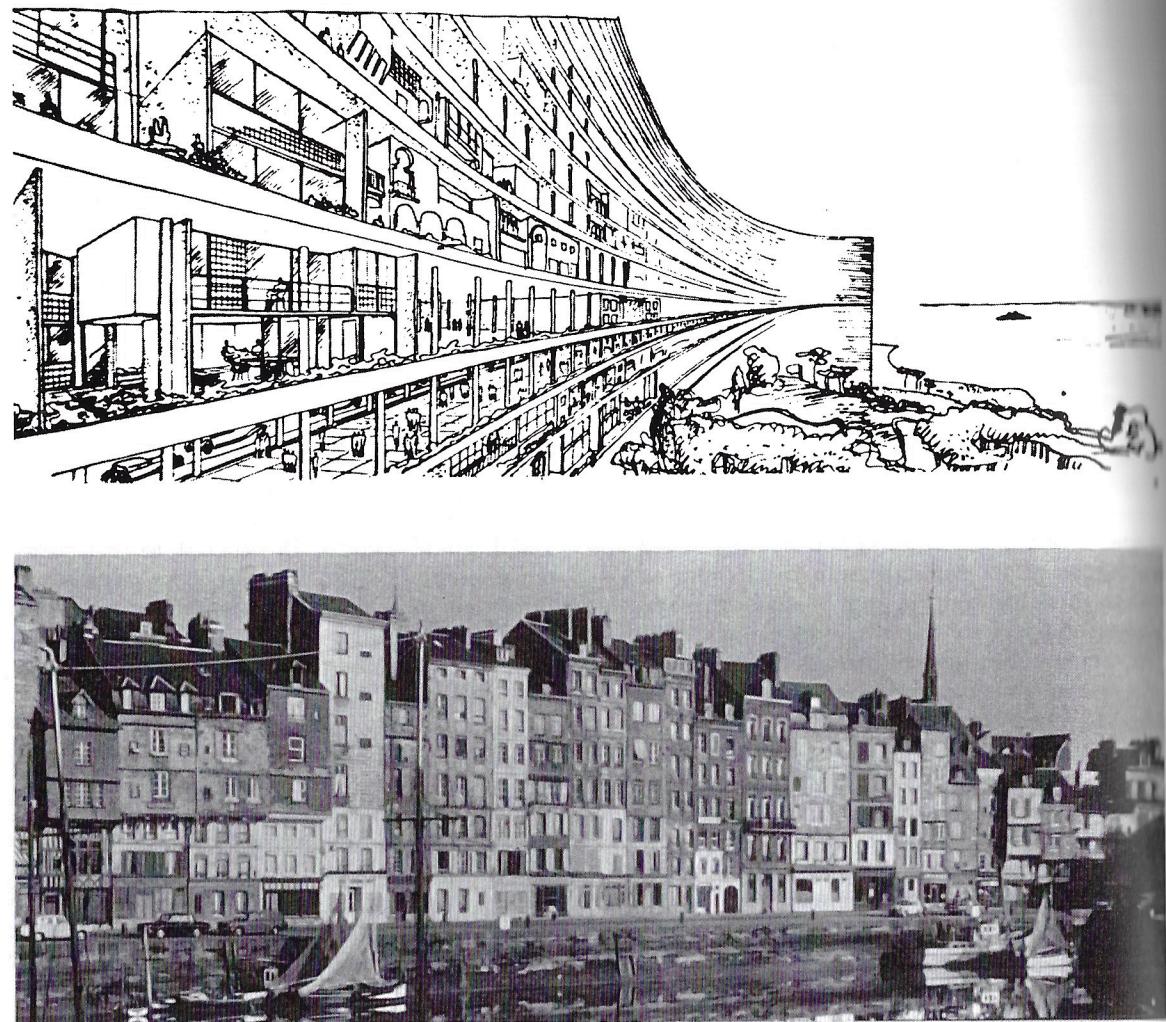
A case in point is the dining chair by Nathan Silver (83). Its tractor seat and wheels retain a memory of their previous history in a farming

and hospital context, in contrast to their present domestic use. Furthermore, the parts manifest their *raison d'être*: the reason why the wheels, seat and insulating foam are all there is as obvious as how the seat works. But beyond this is the density of meanings which such objects can carry simply because their subsystems are designed by more than one person. For instance, the complex moulding of the tractor seat, with its compound curves and weight distribution, shows a knowledge built up over generations. A single designer could hardly reinvent all the subtleties of such an object *ex nihilo*. Furthermore, it contains violent contrasts—rubber and chrome—and striking images—animal horns—which would not ordinarily be carried through by a single designer. He would usually be too constricted within the habitual parameters of a “dining chair” to ever imagine such possibilities. Thus it is in the richness and clarity of combining heterogeneous meanings that adhocism succeeds beyond more integrated methods of design. All of its complex articulation pleases the mind and allows it to comprehend and coordinate a much wider range of experience.

#### Meaningful articulation

... the most valuable states of mind ... are those which involve the widest and most comprehensive co-ordination of activities—the least curtailment, conflict, starvation and restriction.

I. A. Richards



(84) Le Corbusier, *Algiers viaduct block*, 1934. "Here are artificial sites, vertical garden cities. . . . The architectural aspect is stunning. The most absolute diversity within unity. Every architect will build his villa as he likes; what does it matter to the whole if a Moorish-style villa flanks another in Louis XIV or in Italian Renaissance?" (Quote from *Ville Radieuse*, 1934)

(85) Honfleur. The self-regulating system of piecemeal growth is a complex rather than a simple process

The roles of art and education are often justified because they have a positive effect on the developing mind or psyche. Even the few great voices that have attacked civilization—the Iconoclasts, Rousseau, Freud—acknowledged that studying, learning skills and experiencing art have some effect on the individual, whether good or bad. One theory, Platonic in origin but recently upheld by those who would censor art, is that the object experienced has a *direct* influence on the psyche. Thus a melodious tune calms us, a pornographic picture excites us to imitative action, a play about courage incites us to heroism, and dynamic spirals, if we are Marxists, encourage us to usher in the next stage of the revolution. No doubt this theory

has some truth to it, but the fact that it is not completely or even largely true can be easily ascertained after a prize fight or a performance of *Oedipus*. Except for the rare case, everyone goes home passively as usual—calmed, not driven to action, by the performance.

If we are to believe that the experience of art and the learning of skills have any effect on us, then it must be for the most part *indirect*. That is, our mind is developed and changed mostly unconsciously in multiple ways. When we listen to the meaning of an actor's words, we unconsciously note his rhythm, accentuation and tone; when we concentrate on riding a bicycle from one point to another, we unconsciously learn to pedal, balance and steer. If we learned only one skill at a time, or if we were always effected *directly* by a work of art, it would be a very inefficient way to progress and we should always be victims of our environment. Luckily, learning is much more total and flexible than the Platonic theory of direct influence would have it. And yet, if suitably refined by the theory of indirect transfer of organization, the primary virtue of Platonic theory may be kept.

This virtue is basically the idea that learning and culture can be transmitted between different minds, and that qualities of the mind can be transmitted between different psyches. The motivating force is obviously the idea that high organization of intelligence is preferable to low, just as refinement of feeling is preferable to crudity. If states of mind are transferable, then potentially everyone could progress to ever higher stages of organized complexity. We pass from lower to higher stages of organization through the influence of other minds, through the effect of the arts and the environment. Living in a complex and meaningfully articulated environment, we would gain ever greater degrees of psychic organization, whereas in an impoverished environment we would (on the whole) lose stability and regress to more simplistic modes of existence. The effects of "stimulus deprivation" on growing animals has already been mentioned, and one can postulate similar kinds of effect on men.<sup>2</sup> In all

<sup>2</sup> See Hydén, "Biochemical Approaches to Learning and Memory," in *Beyond Reductionism*, edited by Arthur Koestler and J. R. Smythies, pp. 85–103, and references to Skeels. London, 1969.

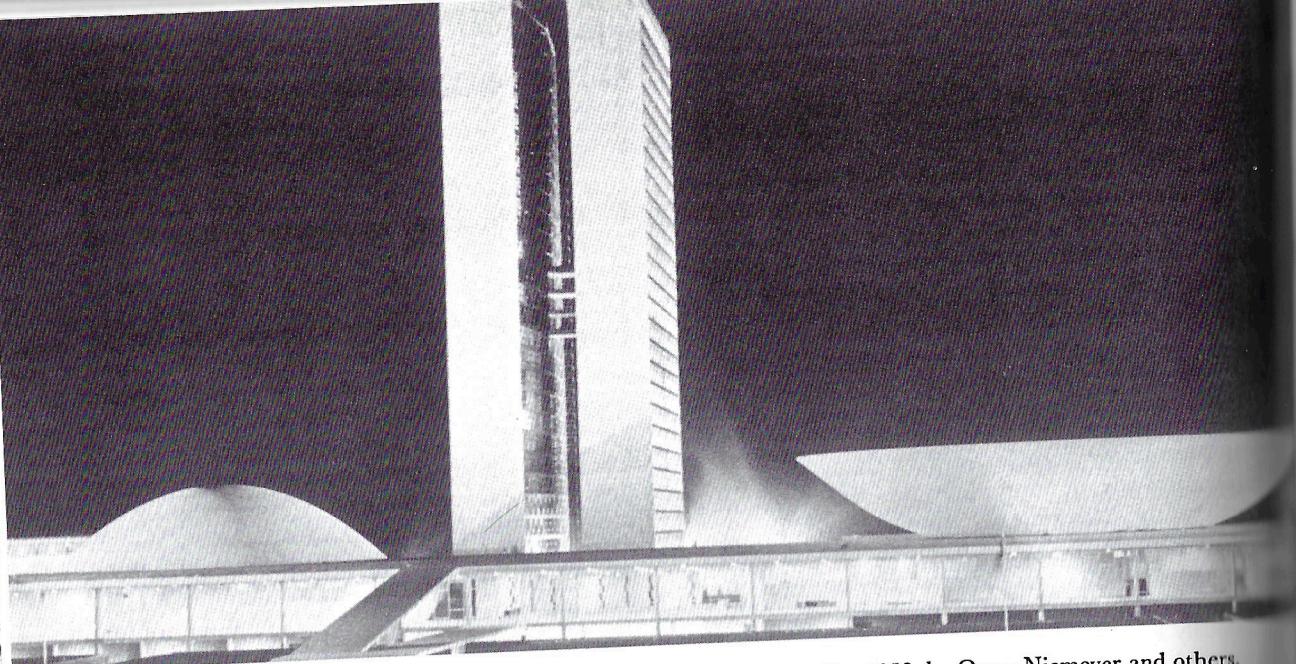
but the rare instance, the impoverished, simplistic environment hinders the growth of the mind.

The next question then becomes, how can we acknowledge and satisfy all the multifarious forces in our environment without oversimplifying them? Obviously there is no easy answer, but from a certain logical extreme one answer has always been clear: let each individual design his local environment within a larger ordering system (84). As the libertarians, liberals and anarchists have insisted, real freedom consists of working in accord with internal laws, and not just accepting the boundaries of external parameters, however wide and permissive. Hence as a logical extreme, one could not achieve a more honest and complex articulation than by giving the individual the legal and financial means to build his own environment. The complex order that would emerge would be adjusted piecemeal to every imbalance in the environment or to the individual's significant need. It would thus undergo continual and small readjustments *ad hoc* until it was finely tuned to the exigencies of life (85). The advantage of this piecemeal method of ordering over totalistic planning is that it allows one to disentangle causes and effects and to learn from mistakes; totalistic planning, in seeking to change everything at once, has no relative order against which to measure progressive change.<sup>3</sup>

One of the difficulties involved in getting people—above all planners—to accept this organized complexity has been purely conventional. They have been taught to believe that complexity is synonymous with chaos and indecision. Thus they assume that the contrary idea too—a simple order, the clear repetition of suburbia or the New Towns—is an answer to urban organization. Jane Jacobs asks of this mentality—

Who would prefer this vapid suburbanization to timeless wonders? . . . An all too familiar kind of mind is obviously at work here; a mind seeing only disorder where a most intricate and unique order exists; the same kind

<sup>3</sup> Karl R. Popper, *The Poverty of Historicism*, pp. 66–67. London, 1957.

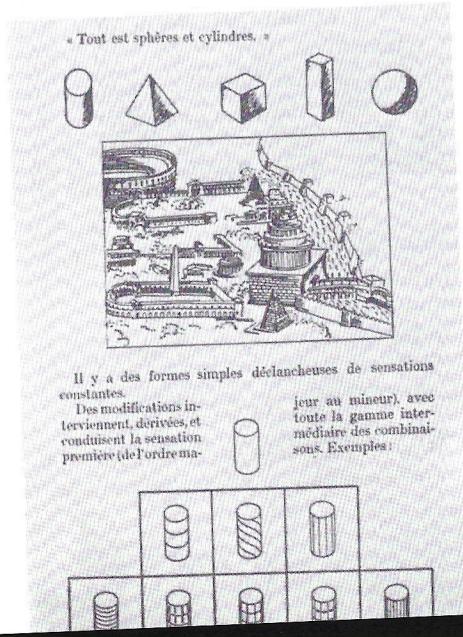


of mind that sees only disorder in the life of city streets, and itches to erase it, standardize it, suburbanize it.<sup>4</sup>

Beyond the purely conventional reasons for this inability to deal with complexity lies the question of reductivism. The urge to reduce complexity and deny that which is not clearly visible has been overpowering in recent times,

<sup>4</sup> Jane Jacobs, *The Death and Life of Great American Cities*, p. 460. Harmondsworth, 1964. See also Nathan Silver's discussion of planning below, pp. 179 ff.

(86) Le Corbusier, illustration of *Purisme*: Simple forms "release" constant primary sensations which are modified by the individual's culture and history (or secondary sensations)



(87) *Brasilia*, 1959, by Oscar Niemeyer and others. An architecture of the Purist language which is erratic in its signification stripped as it is of a conventional cue which would stabilize the meanings

as if men were somehow trying to compensate for the fact that recent discoveries have nearly all been invisible and highly complicated. Whatever the cause may be, this oversimplification and reduction are contrary to the growth of the developing mind which, like complicated urban tissue, is always reaching levels of greater organized complexity. Another explanation of the preference for simplicity is advanced by Gestalt psychologists, who have shown the reductive element in all perception and thought. We simplify forms to the nearest gestalt shape, just as we generalize arguments to higher levels of abstraction. Yet many have taken this partial truth as a moral injunction. For instance, Le Corbusier and Amédée Ozenfant proposed a theory of painting and architecture which would be based primarily on Platonic forms: cones, spheres, cylinders, cubes, etc. They argued that only these simple forms were *universal*, and that they would in fact set off "identical sensations" in "everyone on earth—a Frenchman, a Negro, a Laplander" (86). In essence they were arguing for a universal language of the emotions—*Purisme*—which would cut through the Babel of contending, eclectic languages. The individual words of this language would be the psychological constants found by psychologists. A flat line would mean "repose," a blue color "sadness," a jagged, diagonal line "activity" and so on until the whole gamut of emotion

had been built up. They argued, as Plato often did, that nature had constructed within us a fixed language based on efficiency, geometry and function; this language of the emotions was the most economical and pure one—hence *Purisme*.

No doubt such a language does exist on a very rudimentary level. Some colors are inherently sad, just as some notes and rhythms are intrinsically chipper and gay. Yet to elevate this universal language to a level of priority over conventional languages was a mistake of the first order, because if there is any priority it is just the reverse. A chastening example may serve to make this clear.

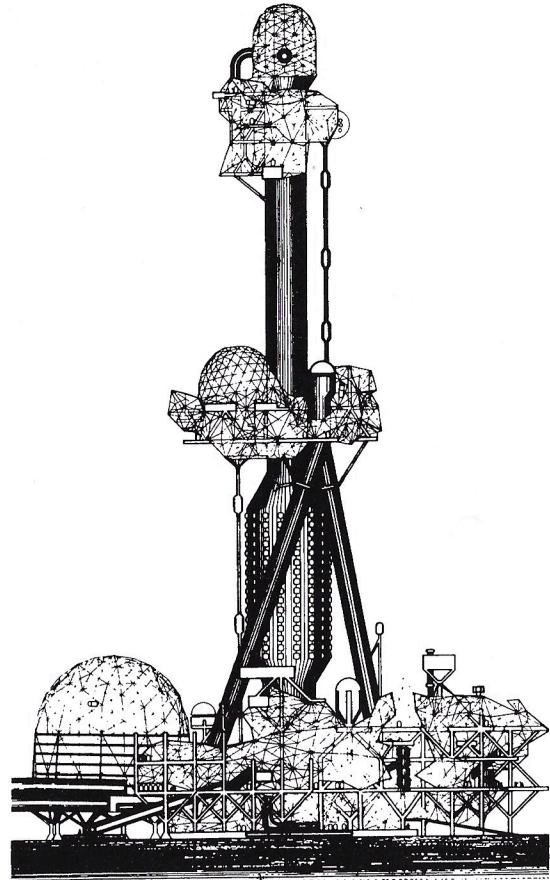
The Palace Complex at Brasilia was constructed, according to Corbusian doctrine, out of pure, primary shapes, all in light colors and simple patterns. The two congress halls were built as semispherical dishes resting on a flat plane of Euclidean splendor (87). As such they should have released the "identical sensation" of harmonious balance in every Brazilian. They should have meant the same thing to everyone: the universal truth of the sphere which is equidistant at every point from its center, the symbol of perfect harmony cut in half and shared by each congress. Yet what in fact did they signify to the Brazilians? They were interpreted as two gigantic salad bowls signifying the government's love of eating up large quantities of the people's lettuce—i.e. much of their Gross National Product had been given over to building these monuments. Thus, contrary to *Purisme*, the purely local and conventional meanings of the society took priority over the universal and natural ones. This is true of all but the most specialized languages, and it accounts for their great power and flexibility. They are codes built up through habit and use which have a conventional connection between form, content and function. The connections can be changed and re-established to suit the situation, rather than the same form always having to delineate the same function or content. The essential strength of forms is not that they have inherent meanings, but that they change function by recombination and so on. Thus architecture is always building up codes and conventions by which it will be understood, whether these codes are styles, building regulations or the Five Orders.

The rigid orders of ancient architecture would seem to be a fairly recalcitrant matrix for the expression of psychological and physiognomic categories; still it makes sense when Vitruvius recommends Doric temples for Minerva, Mars, and Hercules, Corinthian ones for Venus, Flora, and Prosperina, while Juno, Diana, and other divinities who stand in between the two extremes are given Ionic temples. Within the medium at the architect's disposal, Doric is clearly more virile than Corinthian. We say that Doric expresses the god's severity; it does, but only because it is on the more severe end of the scale and not because there is necessarily much in common between the god of war and the Doric order.<sup>5</sup>

It does not matter too much whether these codes have a naturally expressive base or not. What is crucial is whether they are conventional, well understood and used coherently so that at least some meanings can be conveyed. The actual codes that are used today tend to be constructed *ad hoc* from many different sources. Thus the British-based Archigram Group makes up their code from comic books, spaceware, computer nets, soap bubbles and even the flexing tentacles of the octopus. A case in point is their Montreal Tower scheme of 1964 (88) which uses four elements from this code semantically: the pneumatic tube to signify quick vertical movement, the geodesic net to signify wandering circulation, the geodesic dome to signify auditoria and exhibition areas, and the plastic pod to signify individual hotel rooms. Given these four elements, it is appropriate that each one should be used as it is. But, as with the Five Orders, it is not because of any natural or functional relation between, say, auditoria and geodesic domes, but rather just a semantic appropriateness within the given gamut of options. That is, of the four elements the dome is most like an auditorium, a tubelike movement, a pod like a room and so on.

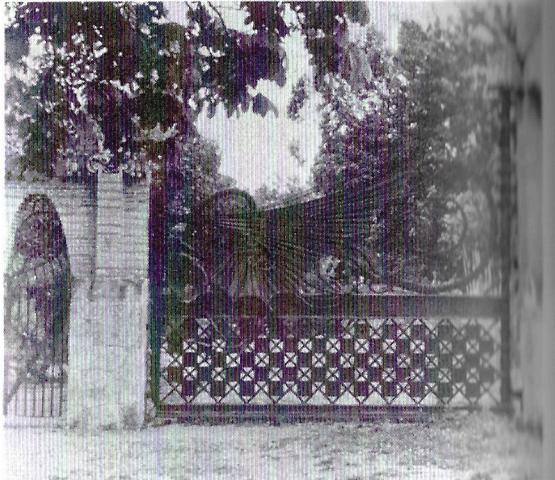
Many people have lamented the passing of the classical language of architecture and the introduction of every possible form and material

<sup>5</sup> E. H. Gombrich, *Art and Illusion*, pp. 316–17. London, 1960.



(88) Peter Cook, *Montreal Tower Project*, 1964. As in most *ad hoc* codes, the sources for the sublanguages are clearly recognizable: oil refineries, pneumatic tubes, exhibition halls, etc.

into the architectural code. In a very real sense these feelings of loss and anxiety are justified, because what has been lost is both a *shared* basis of conventional meaning and the coherent use of motifs or subsystems. Yet the situation is in part inevitable owing to the rapid and constant changes in technology. Hence it becomes necessary for everyone to learn a series of new architectural languages, each one emerging with a new technology and a creative architect who constructs his own code. Indeed, the modern architect as much as the modern poet is expected to "create the audience by which he is judged," and he is considered somewhat anachronistic if he relies on past languages and their audience. The psychological reason for this incessant invention is no doubt due to the quickness with which languages are plagiarized, exhausted and turned into aca-



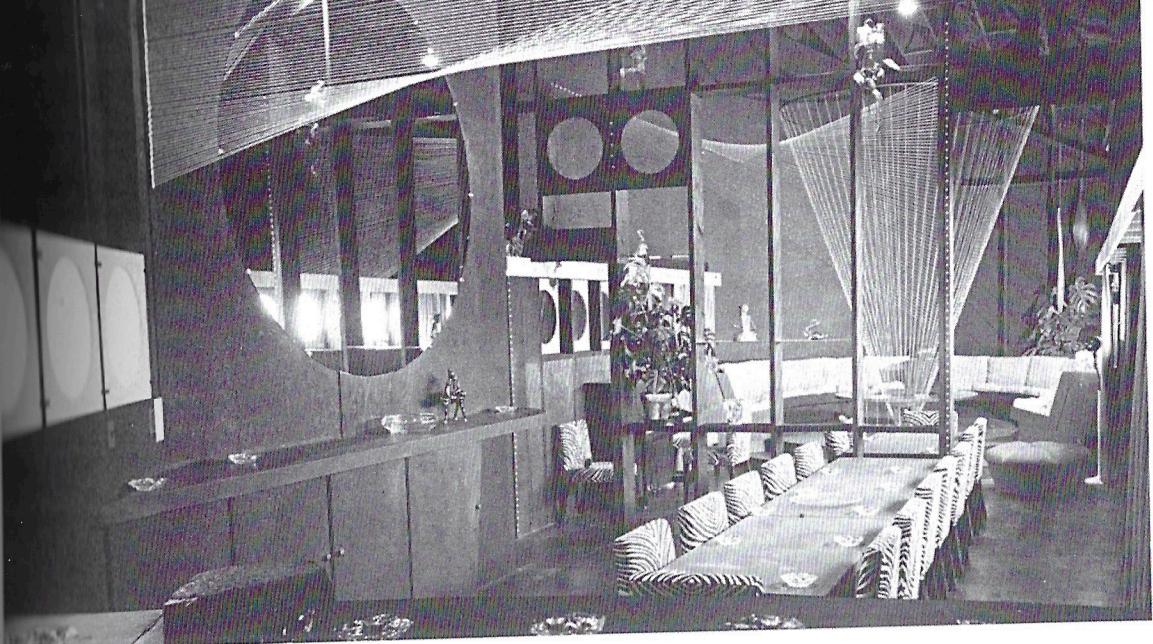
(89) Antonio Gaudí, *Finca Güell* entrance, made from different materials and styles

demic formulae. At any rate, many modern architects have felt it necessary to reconstruct new codes from languages that have been relatively uncontaminated.<sup>6</sup> Gaudí built up a dialect from rough stones, broken glass, iron-work and masonry (89). The Vesnin brothers helped to develop Constructivist language by using mechanical devices and advertisement (74). Architects such as Le Corbusier and Robert Venturi have replenished the modern vernacular with phrases borrowed from airplanes, ocean liners and neon signs. American architects such as Simon Rodilla, Herb Greene and Bruce Goff have constructed their *ad hoc* vocabularies out of such readily available techniques as shingle construction, used Quonset huts, chicken wire and hard coal masonry.

Of all these architects, Bruce Goff is the most clearly adhocist inasmuch as he goes the furthest in accepting heterogeneous material and diverse subsystems. He is not afraid to mix genres and is quite prepared to forgo a consistency which even such adhocists as Gaudí and Rodilla attain. This inclusive approach comes partly from his experience during the war, when he was forced to build with available materials. He wrote me about this:

During my three years in that war as one of the U. S. Navy Seabees, I was often called upon to build, in the

<sup>6</sup> Adhocism in architecture is elaborated further by Nathan Silver, pages 159-71.



(90) Bruce Goff, "Star-Bar," SeaBee Camp, California, 1942. "This bar was improvised off backstage for the entertainment of entertainers. It had to be done for a *low* budget. Hence part of the existing wood structure was left exposed. Scrap plywood was cut into squares for floor tiles and finished with shoe polish. Grocery string was used for spatial decorative lines. The white wire cone had an electric fan in the floor to provide ventilation and activate colored balloons inside the cone—a balloon fountain!"

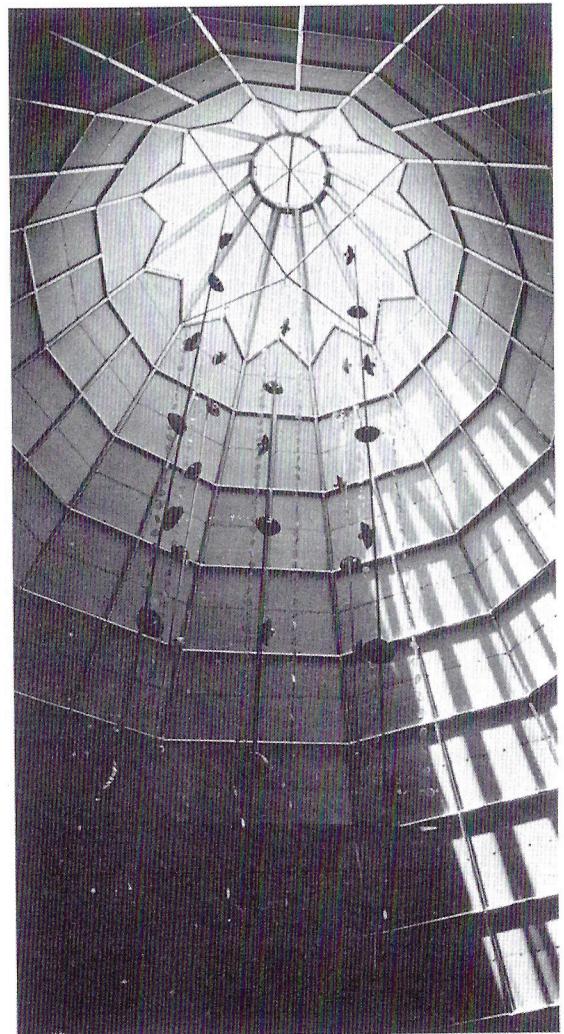
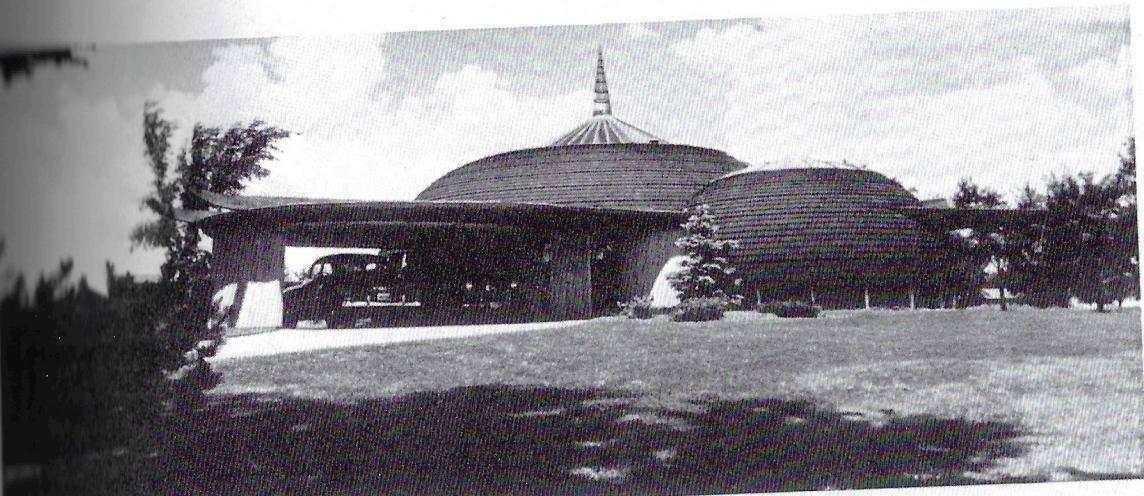
Aleutians and later in California, with whatever materials were available. Thus, in Dutch Harbor, I was faced with the problem of remodelling the officer's club. All plywood was fir, usually stained. To give it more distinction I had it sandblasted which brought out the grain in relief. This was, after the war, later manufactured by a large company as "etched wood." I discovered an entire warehouse full of molded door and window casings, of no use whatever in any of the military buildings being built. I used them to cover poorly executed posts and beams, then in place, placing them about an inch apart in which was inserted an inch strip of copper-plated Sisalkraft paper, usually used for flexible flashings. There was a part roll of this material which had been discarded. I also made use of welded wire, blue glass navy ashtrays and plastic tracing paper for light fixtures. I kept my eyes on scrap piles for possible discarded items which might be usable (90). I became fascinated with the potential of

such "found" materials and still use them when they seem appropriate.

I know that usually *ad hoc* refers more to using parts of made objects than to materials themselves. However there are certain materials such as glass cullet, hard coal, etc. which are not ordinary building materials, but may be used as such. . . . Quite often I have used glass dishes, ashtrays, plastic cake plates, etc. for decorative accents in doors, windows, light fixtures, etc. (91, 92).

In other projects, Goff has used prefabricated metal spheres which are available from the oil industry and concrete sewer tiles—filled with reinforced concrete—as structural columns.

In terms of semantic articulation, his most successful scheme is the Ford House (93). Again built from a variety of available materials—hard coal and Quonset ribs—he uses this diversity to manifest the character of each function. The private bedrooms are enclosed in shingled quarter domes, the semipublic living area is framed in Quonset ribs and is half sheathed in glass, and the more intimate parts of this area are encased in wood and coal—with the occasional lighting accent produced by insets of rough glass cullet. The points of transition, as well as those areas with which one has close contact, are softened by patterns of stained rope and fish net (94). Essentially, Goff is inventing a coherent visual language



(91, 92) Bruce Goff, *Hopewell Baptist Church*, Oklahoma, 1952. "Exterior frame of welded drill stem pipe salvaged from the oil fields (the church is for oil field workers)."

based on unusual forms and materials which he uses in a semantically articulate way. Yet a certain price has been paid for this unconventionality. The Fords finally put up a sign outside their "Umbrella House" (as it came to be known): "we don't like your house, either," and Goff has remained without recognition within the architectural profession. The semantic richness and precision of his work is taken for irrationality and whimsy by many architectural critics. Whereas art critics are ready to accept—indeed are looking for—the new fabrication of a consistent visual language, architectural critics, like the general public, are much more conservative and unwilling to accept the introduction of new codes.



Yet in spite of the conservatism, these new codes will continue to be generated by each new generation of architects and by every change in technology. The total stock of architectural resources is always being replenished with unusual elements; it is those few architects, such as Goff, who can use these new options *ad hoc* in a semantically appropriate way who are opening up the real possibilities for a rich and articulate environment. Only such articulation is equal to the pluralism, delightful heterogeneity and complexity of modern life.

(93) Bruce Goff, *Ford House*, Aurora, Illinois, 1949. Coherent articulation with diverse subsystems (see also 207)

(94) Quonset ribs used for the dome, hard coal and glass cullet for the walls, and salvaged creosoted, stained rope for the frames and soffits