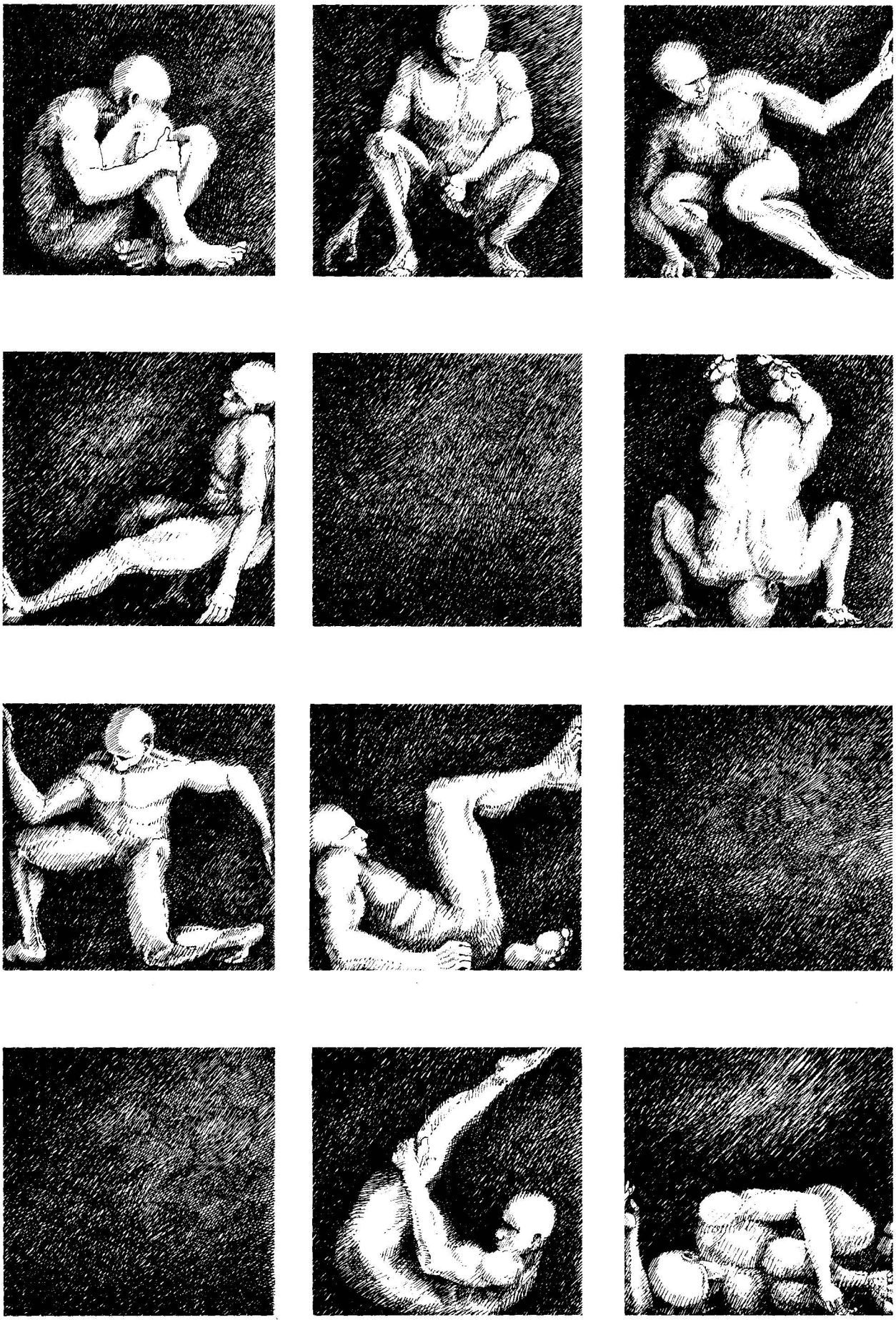
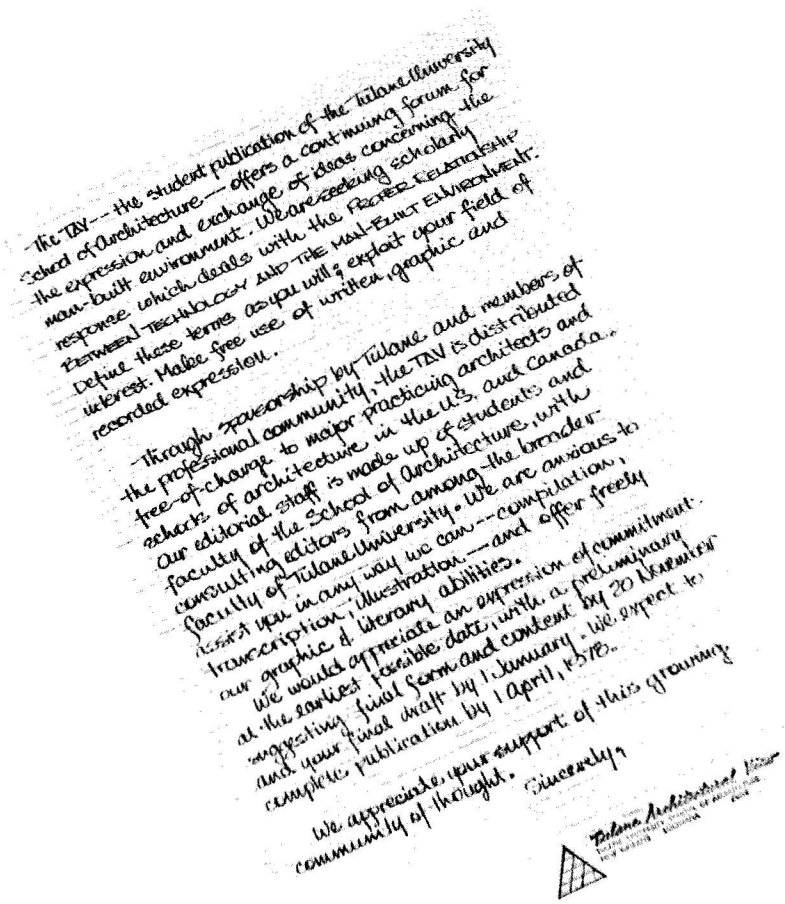


Tulane Architectural View



With the '60's came a period of intense questioning in the U.S. The intensity has since faded, at least from the popular press, but the questioning remains. The experience of the '60's was indicative of a continuing and pervasive disillusionment with the premises underlying modernism in all of its forms in the first half of the century. Books such as Brent C. Brolin's *The Failure of Modern Architecture,* Peter Blake's *Form Follows Fiasco* and Daniel Bell's *The Coming of Post-Industrial Society* mark the questioning of our heretofore unswerving faith in social planning, technology and elite decision-making.

Seeking to explore this questioning and the responses to it, which of late have come under the rubric "Post-Modernism," in a multi-disciplinary way, we sought a central, representative issue which transcended professional boundaries. The issue which we chose and developed was that of technology and its relationship to the man-built environment. Much of the criticism of social, political, and architectural activity of the past fifty years has been concerned with this relationship. We asked students and faculty of Tulane University and members of the professional community to consider the question of the proper relationship between technology and the built environment.

We sought to restrict the freedom of response as little as possible, trying to develop a forum. Consequently, the responses we received cover a broad range of disciplines and points of view. Many express fully developed attitudes about the use of technology in the contemporary world; others only imply such attitudes. Many of the authors, as well, hold ideas in common; some, as we had hoped, disagree.

Michael Zimmerman reviews two recent strains of thought on man's relation to his technology–the Marxian and the Heideggerian. He expands upon the latter, which holds that our attitude toward technology in modern society is indicative of a pervasive philosophy of domination, which ultimately makes man himself an object of domination. He suggests specifically that a more humanistic stance must necessarily eschew the arrogance of recent Modern thought.

Hugh Browning discusses the development of a British new-town, Thamesmead, describing the enthusiastic social planning which went into it, and the subsequent failure of that project in terms of its actual human sensitivity. He supplies an example of his more recent work, which seeks a more "modest"

attitude toward social engineering through architecture.

Browning's article begins, as well, to touch upon the relationship between technology and the political process of building. Three articles, those of Michael P. Smith, Sandy Walkington and Timir Datta, continue to explore this relationship. Smith discusses the use of technology and its mystique to obscure citizen participation in the urban renewal process. Walkington describes the present world energy situation and then discusses the ramifications of the energy crisis on urban planning and policy making. Again on the world scale, Timir Datta discusses political control of technology in the third world, as a part of a general critique of the placing of arbitrary limits on the role of technology. His contention is that technological development should not be artifically limited. Mr. Datta goes on to predict the increasing use of technology as a purely expressive medium. As one example of the expressive capabilities of technics, Charles Fritchie presents the results to date of his research in cybernetic art.

Two more specifically architectural pieces follow. Chris Peragine, in a critique of Post-Modern Architecture, warns against too reactionary a response to Modernism and against the possibility that too facile a pluralism may become pedestrian and meaningless. He suggests the development and maintenance of an "enabling mythology" for our time. Finally, Chris Fawcett explores the works of Arata Isozaki and draws some conclusions about man's alienation from his own built world echoing the thoughts put forth by Michael Zimmerman in his opening article. Fawcett expresses modern man's feeling of helplessness in the face of his own work, and leaves us, as himself, without any sure direction.

Most of the authors represented here are reacting against the too-sure acceptance and glorification of technology that accompanied Modern thought on architecture, social and urban planning, and world politics. Although Datta explicitly and Fritchie implicitly see technology primarily as a highly valuable tool, they both subordinate it to the greater human endeavor of artistic expression. It is indicative of a multi-disciplinary consensus that all portray a more modest stance toward the use of technology than the authors of the 1950's would have.

As editors, we are in sympathy with such a stance. We reject the optimistic prediction of future technology as a purely expressive medium. Such an assessment fails to acknowledge irreconcilable political, social and economic complexities. The tendency to negate technological developments is equally extreme and unrealistic.

Technology can be conceived of as a means to facilitate cooperation on all levels: between man and the natural world and between man and man. As an example, Charles Moore has recently employed public television "designathons" to achieve a populist based design for the Dayton, Ohio, riverfront. In this situation, through technics–specifically television and telephone–the design team was practically expanded to include all willing participants in a vital political process.

Continued questioning of the proper relationship between technology and the man-built environment is essential to the construction of a humane architecture, and ultimately of a humane world. If there has been a common defect of modern thought in all fields–sociology, economics and political and military science as well as architecture–it is the reappearance of the spectre of Greek tragedy, ***hubris:*** unmitigated pride and self-assurance. We are not so self-assured these days, but it may be an encouraging sign that our realization need not be tragic in nature; that, unlike, Oedipus, we have not blinded ourselves in our dismay.

R. A. Jones, Jr.
Tim Bob
Joseph Ford III

CONTENTS

Tulane Architectural View
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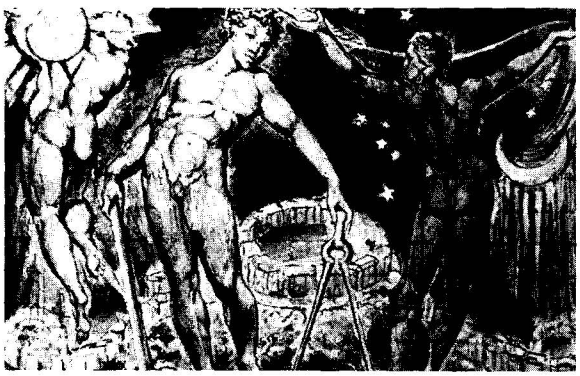
ARCHITECTURE AND THE TECHNOLOGICAL CULTURE



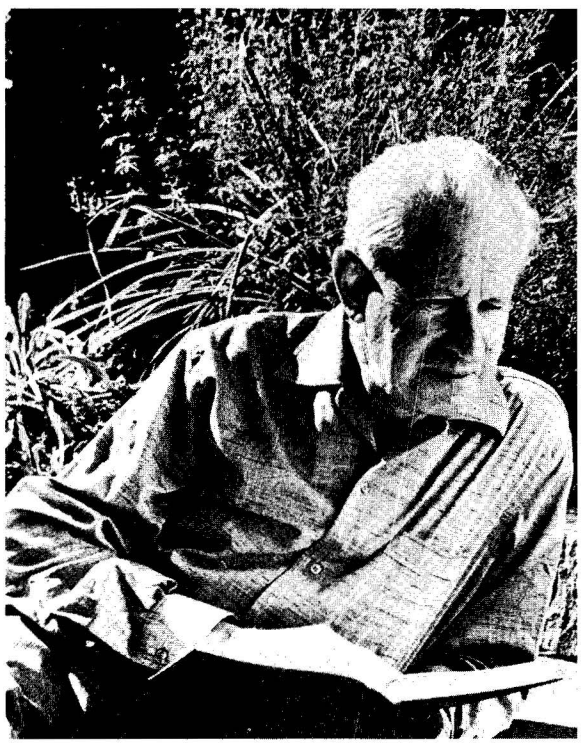
Michael E. Zimmerman of the Newcomb College Department of Philosophy has published in such journals as "Research in Phenomenology," "Man and World" and "Philosophy Today." Dr. Zimmerman is interested in the writings of Karl Marx and the German philosopher, Martin Heidegger, and is currently concluding work on a book dealing with Heidegger's ideas on authenticity. Among Dr. Zimmerman's publications is a comparison of Marx and Heidegger on the domination of nature. Here, he relates their arguments to man's attitude towards the creation of his built environment.

Like most expressions of the human spirit, architecture--the conscious design by human beings of the structures within which they will live, work, and play--is very much a part of its historical epoch. The architect cannot avoid being influenced by the possibilities, limitations, and directions of his own epoch. If we are to come to some understanding of the problem and promise of modern architecture, we must gain a basic understanding of the nature of the modern epoch, which I shall call "technological culture." Technological culture, as I shall argue in this essay, arose from Western man's drive to dominate Nature for the enhancement of human power. The key to this headlong exploitation of the globe is the instrumental rationality, which makes possible "machine technology", by which I understand the rationalized system of production and distribution which underlies contemporary life. Although I cannot claim expertise in the field of the history of architecture, it seems evident enough to me that modern architecture has been affected in two ways by this instrumental understanding of Nature. First, this understanding has led to the development of materials and construction techniques which have made possible buildings of incomparable size, complexity, and precision. Second, because efficiency is one of the highest standards of instumental rationality, modern architecture is often compelled to sacrifice human and ecological needs to the demands of such efficiency. In the technological culture, architects and all the rest of us need to begin to pose anew such questions as: Just what is human existence? Can human life unfold itself appropriately in the kinds of structures and complexes which are demanded by the technological imperative to dominate Nature by way of instrumental rationality? Does the drive to the mastery of natural objects eventually lead to the drive to the mastery of man

himself as just another natural object? In this essay, I hope to provide some of the background within which such questioning can take place.

Let us begin by inquiring into the origin and nature of instrumental rationality. Then let us turn to the question of whether and how modern architecture is influenced by that rationality. Instrumental rationality, as Herbert Marcuse, Martin Heidegger, and others have pointed out, is that calculating intelligence which regards Nature as the field of objects which can be exhaustively known and thus dominated by the human subject.[1] Marcuse has asserted that modern science, often held to be a "value-free" mode of apprehending the structures of the natural world , is itself one aspect of this instrumental rationality, which is *intrinsically* domineering. For modern science holds that to be means "to be an object," i.e., anything which really *is* must be "objectively" knowable by the inquiring subject, whose self-certain rationality is the final tribunal before which are decided questions about the structures of reality. Because mathematical knowledge exhibits such strict certainty and rigor, the ideal of all modern science has been to express knowledge claims in mathematical or quantified terms. Acceptance of this ideal has led to the commonplace notion that whatever cannot be quantified or measured in light of the principles of a well-grounded science, is simply not real, or is merely an object of superstition or emotion. Calculative rationality is the final and absolute measure for the reality of the real.

This supposition about the power of calculative rationlity is itself grounded in the typically modern idea that man himself is the real maker of history and the potential master of Nature. Once man released himself from his bonds to traditional authority (scripture, custom, etc.), and once he denied that he is rooted in a destiny which transcends his own activity, then man was able to raise himself to the position of supreme evaluator and judge of Nature, and the master of his own destiny. Although modern science began to be utilized in the development of machine technology only in the nineteenth century, many have held that science inherently lends itself to such application, for the same "subjectivism" which lies at the basis of science (the rationality of the human subject is the standard by which to judge claims about the nature of reality), is also found at the basis of the modern drive to reduce the planet to a pure object of consumption for the insatiable appetite of the human subject. The *will to know* is thus held to be directly connected with the *will to power*.[2]



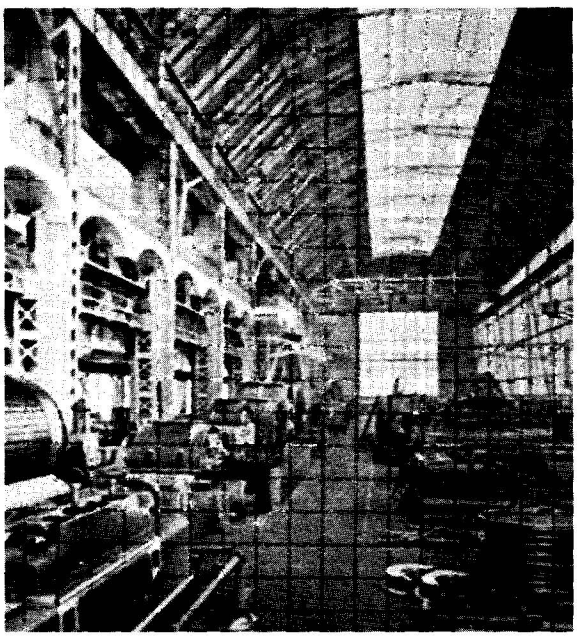
Herbert Marcuse.

Martin Heidegger.

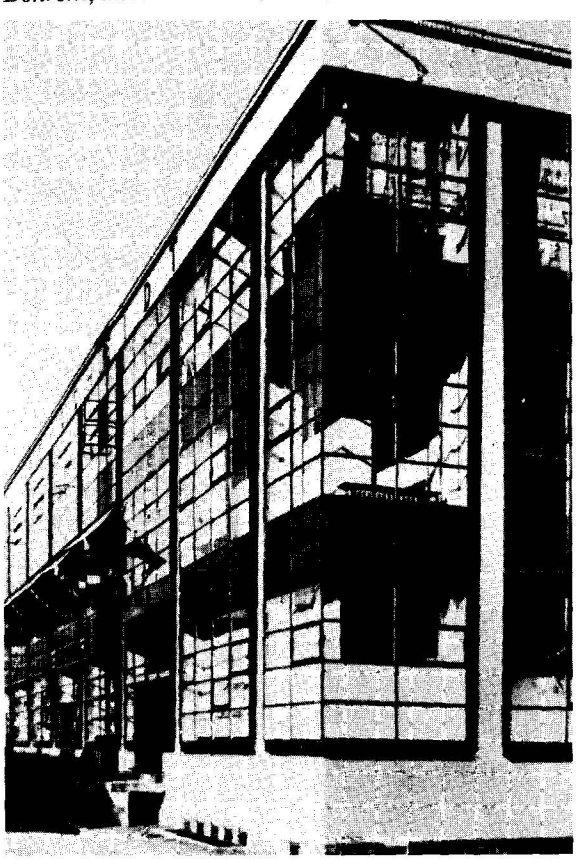
Those who find it hard to accept this description of Western man's understanding of Nature as an object for consumption and domination, need only reflect on the history of the West for the past two hundred years. There is plenty of evidence to support the claim that Western man has made himself out to be the center and goal of history, as well as the master and possessor of Nature. To say that man regards himself as the goal of history means that there are no transcendent values, non-human standards or values to which appeal can be made in determining the validity of human deeds. In the past few generations, this nihilism (collapse of transcendent values) has found its most destructive expression in the nationalism which has arisen in the place of eroded values, and which has justified unimaginable cruelty and devastation in the quest for national power. Heidegger has suggested that the same unlimited will to power which spurs on the exploitation of the natural world, was at work in the systematic manipulation and mobilization of "human resources" in Germany during the 1930's and 1940's.[3]

For contemporary man, Nature stands revealed as a stockpile of raw materials, whose only "value" lies in its ability to contribute to the increase of human power (productivity, "progress"). It is true, of course, that man has always been compelled to make use of Nature in order to provide the means necessary for life. But in previous eras, Nature was never regarded *merely* as an object for human use. Only in the modern age has all intrinsic value been extruded from the natural world. For values are not "objective" or calculable properties of the cosmos; hence, they are lacking in "reality." Because man himself can be treated as a natural "object," he too can become manipulated by the same instrumental rationality which is used to dominate the rest of Nature. In the modern, technological culture this instrumental rationality is exhibited quite clearly in the emergence of "scientific mamagement,"[4] the atomization of human work (the "division of labor"), the application of behavioral "engineering" to the training and organization of the "masses," the use of sophisticated methods of propaganda (including advertising), the total rationalization of production and distribution, the assessment of all action in light of the standards of efficiency and profitability, and the prevalent attitude that Nature is an object which must be compelled to yield to human will.

The domination of man and Nature by instrumental rationality can be understood in at least two ways. The first way, which has been guiding my analysis to this point, might be called "technological determinism"' The second way is followed by many

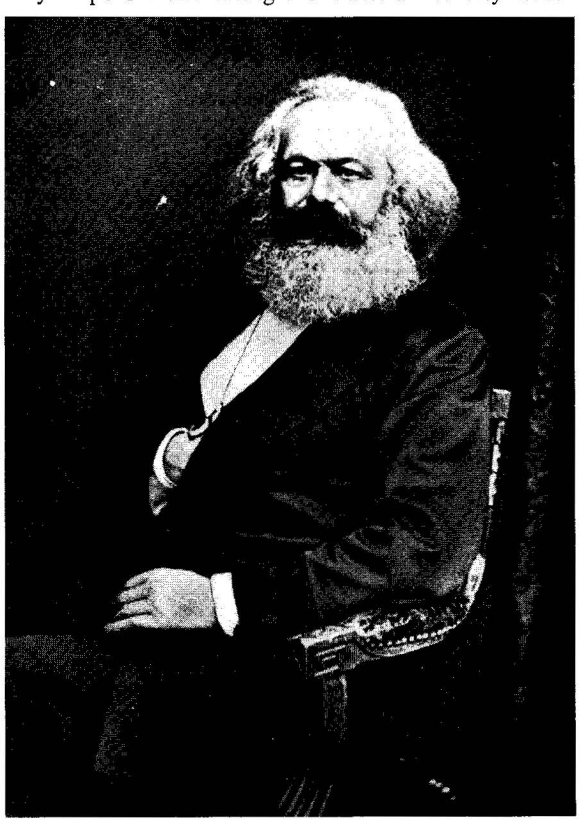


The early years of industrial architecture in Germany: Behrens, AEG Turbinenfabrik, Berlin, 1909.



Gropius, Fagus factory, Aalfeld, 1911.

Marxists. According to the first way, instrumental rationality contains a kind of internal "logic" or pre-figured plan which tends inevitably toward the development of ever greater means for controlling natural processes. To mobilize the population to further this goal, a new kind of "ideology" emerges, viz., that Nature is raw material to be mastered for the benefit of mankind. Thus the exploitation and devastation of Nature, and the engineering of human society become legitimated by the politically "neutral" goal of "Progress." The effectiveness of instrumental rationality in the sphere of production is so great, that the temptation arises to treat ***all*** problems--including social and political ones--as essentially ***technical***. Consequently, it has been suggested that the United States and the Soviet Union are becoming much the same, in that both are supposedly starting to be run by "technocrats" or "managers," whose primary affiliation is not to any political ideology, but to efficiency in production and distribution of goods and services. The "utopian" view of this technological determinism holds that instrumental rationality (as embodied, for example, in the gigantic multi-national corporations) is the only hope for alleviating the material scarcity which



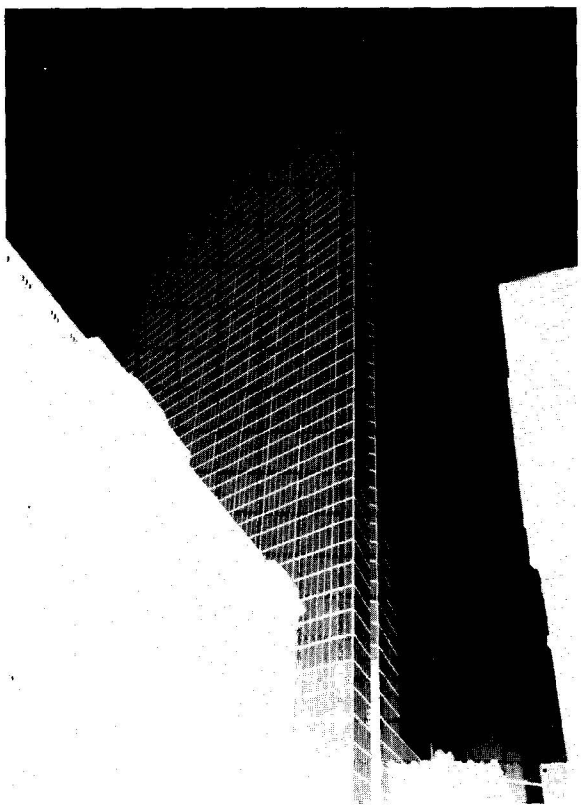
Karl Marx.

lies at the heart of all human problems. The "dystopian" view of technological determinism (as represented by thinkers such as Marcuse) claims that man ends by making himself the servant of the activity of domination through which man had once hoped to free himself from another kind of bondage, viz., to the harsh demands of Nature. "One-dimensional" culture, in which all opposing views are eliminated in favor of the ideology of constant Progress and in which all human activity is mobilized to keep the "system" in high-gear, is (according to Marcuse) the inevitable result of the working out of the "logic of domination" inherent in instrumental rationality.[5]

An alternative way of explaining the exploitation of man and Nature is offered by Marx and his followers. Marx would say that the talk of "technological determinism" is a smokescreen which conceals the truth, viz., that far from being some kind of autonomous force, instrumental rationality is always directed by human beings. In capitalist countries, such rationality is in the service of particular class interests bent upon exploiting the labor of others in the quest for profit. The machine technology developed by the capitalists in the drive for greater efficiency in production, and thus for higher rates of profit, makes possible the overcoming of the scarcity which until now has necessitated back-breaking labor and has thus prevented the development of the free, creative capacities of individuals. But the question is: Will a change in the ownership of the means of production (machine technology) bring about an end to the division of labor, the quest for efficiency, the domination and exploitation of Nature? Are not all technological/industrial cultures--both capitalist and socialist--guided by the imperatives of instrumental rationality? Does not Marx's own thinking form part of the tradition which holds that man is the measure of all things, the meaning of history, the potential master of his fate, and that Nature must be "humanized" (i.e., transformed into a domain suitable for the gratification of human needs) before man can achieve his own potential as a genuine individual? Such questions could be multiplied, but the point is that it is not at all clear that instrumental rationality and its ideology of human dominance over Nature are beneficial for the development of human potential, or for the preservation of the natural environment upon which man in the end depends completely for survival. With this introduction to some of the features of technological culture, we are prepared to consider the relation between modern architecture and instrumental rationality.

Le Corbusier's famous statement that the house is a "machine to live in" expresses effectively the functionalism which continues to determine so much of the architecture in technological culture (both socialist and capitalist). In the United States, this functionalism demands efficiency in design. Efficiency refers to the most economic and profitable use of men and material, both in the construction and the maintenance of a particular structure. Why is it that efficiency is of such importance in determing the structures within which we must lead our lives? Because by the standards imposed by instrumental rationality, it would be "irrational" to place other values ahead of efficiency. So long as Western man regards himself as the subject in the process of subjugating the object (Nature) of his desire, we shall be forced to act in accordance with the standards which most effectively promote that subjugation. So completely are we ourselves dominated by the ideology of instrumental rationality, that we find it almost impossible to imagine an alternative to efficiency in any sphere of human endeavour. There is no doubt that this ideology of progress and efficiency has had terribly destructive results to the natural and human environments. One need only to study the history of the American city to discover the thoughtless eradication of magnificent buildings and even entire neighborhoods, and the replacement of them by ever-more-profitable and efficient buildings, highways, parking lots, etc.

Great architects, of course, are rarely satisfied with the image of man as invincible consumer-producer, i.e., as yet another object in the increasingly one-dimensional world of instrumental rationality. For the architect is (or ought to be) a kind of artist, whose designs are expressions of his own understanding of the nature of man. The artist recognizes that man has a creative, playful, spiritual dimension which is omitted in the prevailing cultural understanding of man. Without adequate insight into the nature of man, the architect beomes a mere technician, whose work is determined in a large measure by the expectations of a culture bent upon the efficient domination of man and Nature. Marx, of course, might describe the situation in a somewhat different manner. Most American architects cannot help being influenced by the facts that 1) our economic system regards man as a commodity, able to be bought and sold like other commodities; and that 2) architects are themselves commodities which are bought ("hired") only if they are willing to design structural commodities, whose profitability is guaranteed by their efficiency or "instrumentality." This means, of course that in our society it is difficult

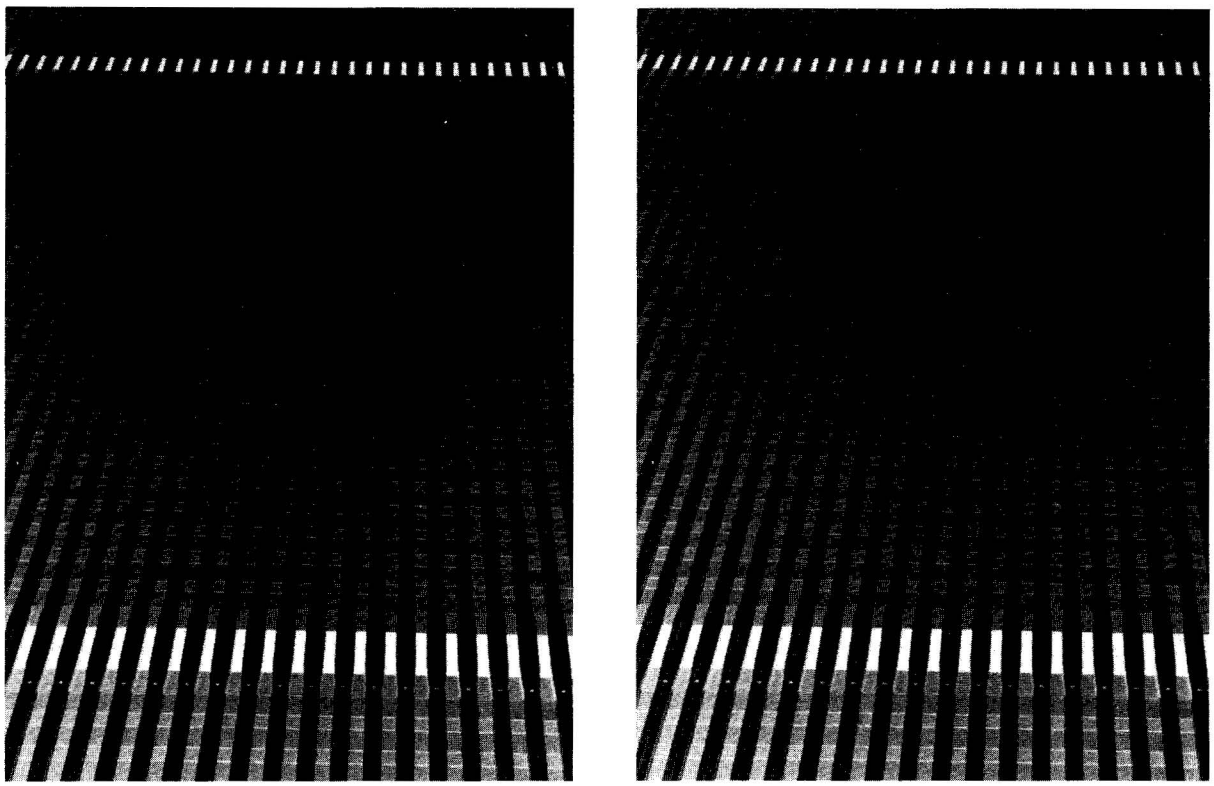


John Hancock Building, Boston

to discover and sustain an understanding of man as other than a commodity. Architects who persist in designing buildings for the enhancement of human *life* (instead of for the sake of profitability or efficiency), find themselves with few opportunities to see their designs carried out.

In our time, there have been architects who, by the sheer force of their own personal vision and artistic-technical abilities, have managed to create "spaces" which provide the arena for human beings to exist as other than commodities or objects. Such efforts are not sufficient, however, to overcome the dominant influence of the understanding of man as an object to be organized and manipulated like everything else. An individual building or space may offer an alternative vision of man which calls into question the prevailing vision, but architects will find themselves frustrated in their hopes of re-designing the world in a humane way, until there occur some fundamental changes in our culture's attitude toward man and Nature.

As Martin Heidegger has pointed out, it is essential to man that he "dwell" within the world. To dwell in the world means more than to be a functioning object



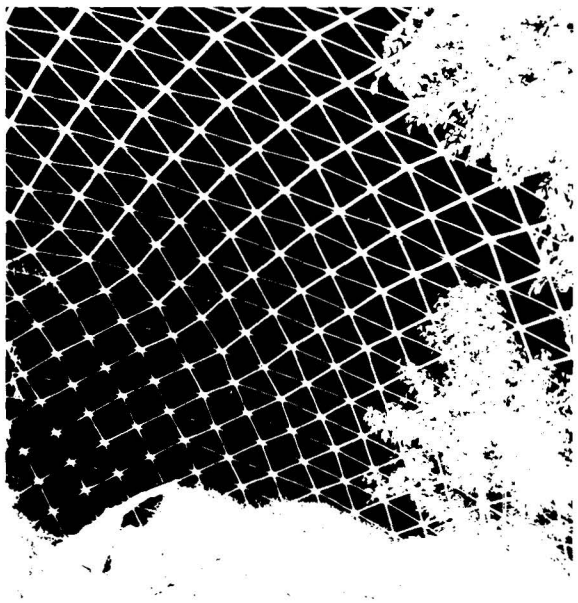
World Trade Towers, N.Y.C.

within a machine. To dwell in the world means to have some sort of "wholesome" or "healthy" or "holy" (all these words have the same root) relation to the beings which surround and sustain us.[6] To dwell in the world includes making some sort of "space," but here space does not mean the abstract, isotropic, homogeneous, three-dimensional space of classical physics. For in such a space there can exist only mathematically-calculable and controllable objects. By eliminating all other understanding or experience of space, man has condemned himself to exist like an object in a space devoid of intrinsic meaning and purpose. We finance the construction of buildings which offer spaces in which human beings can act most efficiently, as well-trained machines who participate in the continuing process of transforming the entire globe into one gigantic, centrally organized factory. What place is there for "meaning" in such spaces, designed not for human beings whose lives are characterized by the *need* for meaning, but for efficient human machines, whose lives are treated as means to increasing productivity?

There are already some hopeful signs that some architects are attempting to carry out in practice the developing attitude that man is *not* the all-powerful subject who stands outside of Nature in his quest for mastery of Nature, but instead that man is one aspect of the ecological sphere which he has already despoiled so badly. As part of Nature, man must learn to dwell in the world in a way which is not inherently destructive of the environment, and which promotes meaning in human life. This will require something more than a lowering of our sights. It will not be enough to cut back our exploitation of Nature, simply to avoid the exhaustion of raw materials and the complete pollution of the planet. For if this cutback in the domination of Nature does not include an alternative understanding of man, then we shall continue to organize human society and to construct spaces in line with the notion that man himself is the most important raw material, able to be trained and shaped for service in the great war against Nature. The new understanding of man could not simply reject machine technology, but the deployment of that technology would take place in accordance with principles other than "efficiency" and the blind demand for "greater productivity."

If man is understood as the meaningful being, the being endowed with the gift of understanding himself and his place within the great cosmos all about him,

then future spaces would be designed and constructed in ways which enhance the development of meaning in life. If one aspect of man is to bear witness to the splendor of Nature, to allow the wonderous cosmos to display itself in its multitudinous ways, future structures will have to provide man a way to dwell in harmony with that cosmos, instead of in opposition to it. The recovery of a sense of humility and the end to arrogance are the first steps necessary for the establishment of a new mode of dwelling in the world. The contemporary architect is in the position to make himself aware of the kind of destructive attitudes which determine the consciousness of modern man, and to try to guide his own work as much as possible in accordance with alternative attitudes which he believes are more in tune with human and natural possibilities. This presupposes, of course, that the architect is not a mere technical expert, but a sensitive human being with the capacity and need to understand the *meaning* of his own life, and hence that of others.



1 Cf. Martin Heidegger, *The Question Concerning Technology and Other Essays,* translated by William Lovitt (New York: Harper & Row, 1977); *The End of Philosophy,* translated by Joan Stambaugh (New York: Harper & Row, 1973); *What Is Called Thinking?,* translated by Fred D. Wieck and J. Glenn Gray (New York: Harper & Row, 1969). Cf. also Herbert Marcuse, *One-Dimensional Man* (Boston: Beacon Press, 1964); *Eros and Civilization* (Boston: Beacon Press, 1966). Cf. also my own essays, "Heidegger on Nihilism and Technique," in *Man and World,* VII (November, 1975), pp. 395-414; "Beyond 'Humanism': Heidegger's Understanding of Technology," in *Listening,* XII (Fall, 1977), pp. 74-83; and "Heidegger and Marcuse: Technology as Ideology," to appear in *Philosophy and Technology: An Annual Compilation of Research* (1978), edited by Carl Mitcham.

2 Cf. Marcuse, *One-Dimensional Man.* For a fascinating treatment of this "Faustian" theme in Western Culture, cf. Robert Tucker, *Philosophy and Myth in Karl Marx* (Cambridge: Cambridge University Press, 1972).

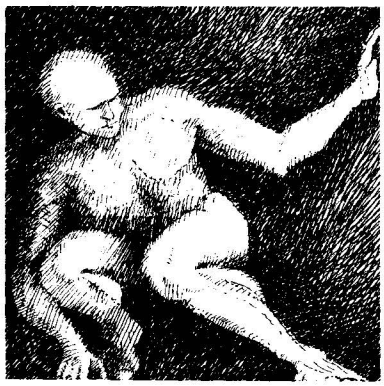
3 Cf. the essay "Overcoming Metaphysics" in *The End of Philosophy,* as well as his great two volume *Nietzsche* (Pfullingen: Gunther Neske, 1961), written and presented as lectures between 1936 and 1944.

4 For a powerful treatment of the systematic degradation of labor in the twentieth century, cf. Harry Braverman, *Labor and Monopoly Capital* (New York: Monthly Review Press, 1975).

5 Marcuse, *One-Dimensional Man.* Cf. also the writings of Jacques Ellul, including *The Technological Society,* translated by J. Wilkinson (New York: Knopf, 1964). Cf. Richard J. Barnet and Ronald E. Muller, *Global Reach: The Power of the Multinational Corporations* (New York: Simon and Schuster, 1974) for a penetrating study of

the "corporate cosmology" by which global corporations legitimate their supra-national policies of exploitation and domination of man and Nature.

6 Cf. Martin Heidegger, "Building Dwelling Thinking," in *Poetry, Language, Thought,* translated by Albert Hofstadter (New York: Harper & Row, 1972). For treatment of alternative views of man and Nature and technology, cf. Heidegger, *Gelassenheit* (Pfullingen: Gunther Neske, 1959), translated as *Discourse on Thinking* by John M. Anderson and E. Hans Freund (New York: Harper & Row, 1966); Hwa Yol Jund, "The Paradox of Man and Nature: Reflections on Man's Ecological Predicament" in *The Centennial Review,* XVII (Winter, 1974), pp. 1-28; Hwa Yol Jung and Petee Jung, "To Save the Earth," in *Philosophy Today,* XIX (Summer, 1975), pp. 108-117; and George S. Sessions, "Anthropocentrism and the Environmental Crisis," in *The Humboldt Journal of Social Relations,* II (Fall/Winter, 1974), pp. 1-12.



MODESTY AND THE POST MODERN MOVEMENT

Hugh Browning is a partner in the firm of A&H Browning Architects of Cambridge, Massachusetts, and a visiting critic at the Harvard Graduate School of Design, M.I.T., the Rhode Island School of Design and The Bartlett School, London. As a designer for the London County Council in 1965-66, he helped to design Thamesmead, the initial stage of a proposed intown-London-newtown. Mr. Browning here describes his changing attitude toward that project as part of a Post Modern critique of Modernism.

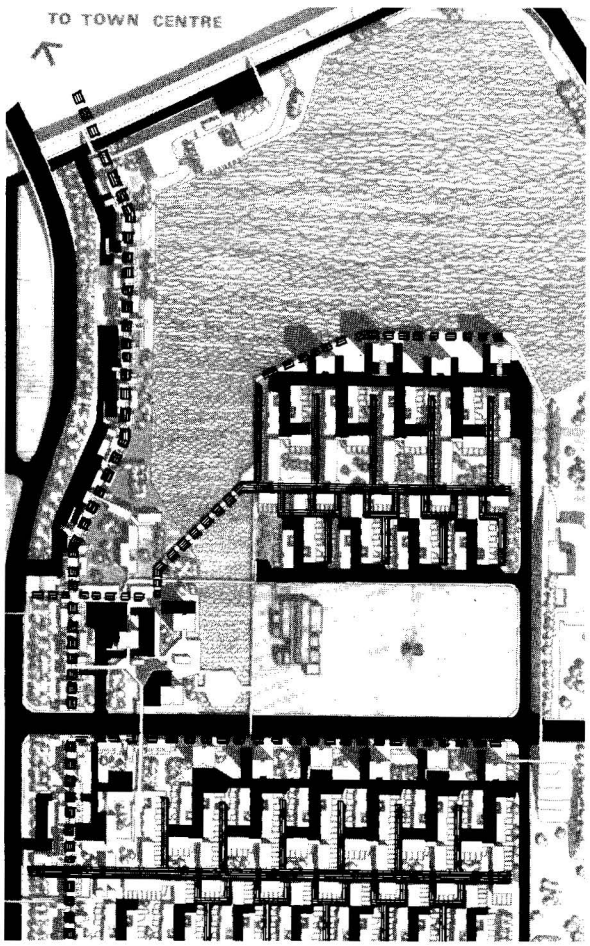
If one mentions Post Modern architecture in certain professional company today, it is like committing a social impropriety. There will be hostility from those who think that the title is just a current fad made up by a few architects talking about themselves and those who react as if it were an elitist's conversation more interested in semantics than buildings or the people who use them. They are not looking hard enough. There is a Post Modern Movement in architecture and it is a reflection of a Post Modern Culture.

Post Modern is different from its predecessor Modern. Post Modern is evolutionary while Modern was basically revolutionary. This leaves the critics who talk about the failure or death of Modernism on the shaky ground of denying history and its process in order to establish a new aesthetic (a very old trick). The major point is the the Modern Movement did not fail any more than the Beaux Arts failed. All historical periods have made meaningful contributions that were afterwards reevaluated because they did not fit into the cultural climate of the times that followed.

To establish a Post Modern position about culture and architecture as its reflection, I would like to tell a story, not of failure but of some shaky Modern misdirections inherent in a project that I worked on. In 1966 after having done a travelling fellowship on "Post-World War II Community Sized Projects in Great Britain," I wandered into the Greater London Council seeking a job. I was hired, assigned a desk in David Grove's housing section and told to start developing a design for the first stage of what was

then called Erith. The rumor was that this scheme, which included 1500 dwellings, a lake, shops, schools, etc., would become a segment of an intown-London-newtown for 70,000 people. I was the first architect assigned to the project, fresh out of school and concerned with the political idea of involvement in housing and large scale projects. My personal reference systems at the time were culturally American, politically East Coast anarchist, and educationally an amalgam of Corb, Brutalism, and Team 10. Another influence was my recent travel in Italy and Greece, one week of which was spent on the Greek Island of Mykonos, whose image would come out again in what is now built at Thamesmead (the project's final name).

Mykonos.



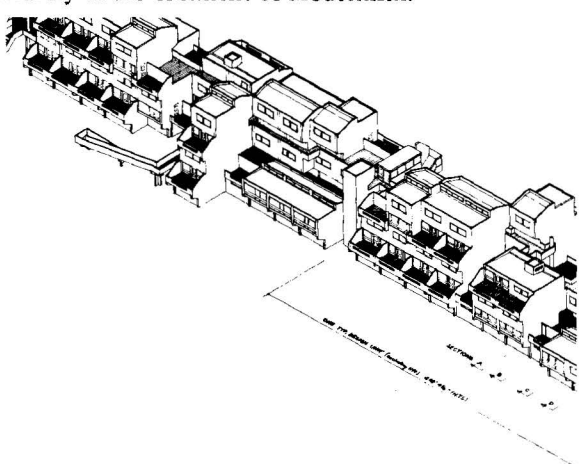
Thamesmead: siteplan, showing pedestrian and vehicular circulation.

I had a major role in developing two sections of the first stage. One part was the low rise high density housing, one floor off the ground to protect against flooding from the Thames River. This carpet or fabric housing was arranged so that vehicular access was limited to the periphery by "mews", leaving a pedestrian route through those spaces much the same as Radburn, N.J.[1] The second part, which I worked on in much greater detail, was the linear block, an assemblage of different types of dwellings put together around and over a pedestrian deck that was to eventually lead to the newtown center. The buildings making up this continuous form were organized by a complicated geometric repetition to give a seemingly endless variety of experiences and activities. Instead of a finite form being extended indefinitely, it was an infinite form much like the DNA molecule. This linear block and its symbolic function of path identification partially came from my fond memories of Mykonos.

"The new Thamesmead buildings," wrote Richard MacCormac, "stand out as a spectacle which demands your attention and response before you turn away. The architecture is persistent, sharp and invigorating or tiresome and obtrusive depending upon your state of mind or the weather;" and ". . . it is in many ways deeply considered, humane, even passionate and that is what architecture is all about."[2]

The project won an Architectural Design award in 1967 and the International Union of Architects' Grand Award for Architecture and Town Planning in 1969. The pride coming from Thamesmead's notoriety got very mixed up when Stanley Kubrick filmed the movie "Clockwork Orange" around the linear block. His political comment on violence in the movie brought up the question of the appropriateness of the linear block's high energy level for the calm, civilized English personality.

From a broader point of view the building of the newtown had other problems. The project was to be industrialised housing for the masses. The underlying theory was the same as had been developed in the early part of the Modern Movement: that the machine and its image could be used paternalistically to cheaply satisfy the needs of architectural production. What happened in reality was, because of the large size of Thamesmead, it became the target of union demands. This drove the cost of building to the point where a social dream was shattered and the factory closed. In a more fundamental sense big government doing big business was defeated by big labor, which had a different social agenda. It was a real fly in the ointment of Modernism.

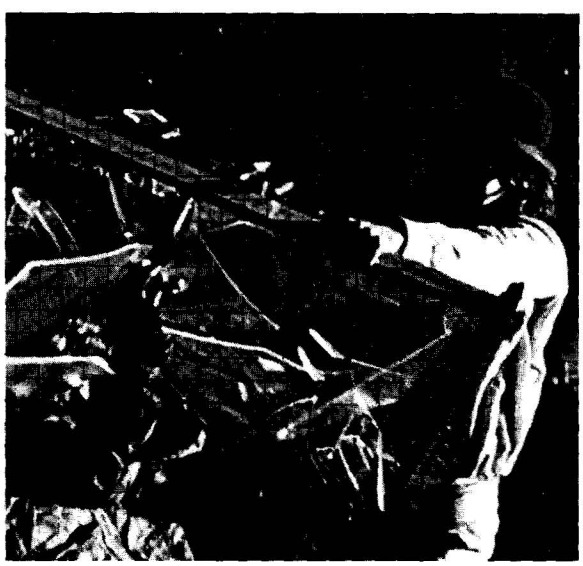


Thamesmead: linear block.

The prevalent architectural attitudes of that time were best described by the 1960's introduction to the Team 10 Primer: "They came together in the first place, certainly because of a mutual realization of the inadequacies of architectural thought which they had inherited from the Modern Movement as a whole, but more important, each sensed that the other had found some way towards a new beginning." Jerzy Soltan described the height of the Modern Movement in the 1930's when he said, "How could we in the CIAM think of roses when the forest was burning?" In the pre-heroic age of the Modern Movement, Otto Wagner in 1894 wrote, "Our starting point for artistic creation is to be found only in modern life." This development of Modern Movement thinking about life only being in the present and future overlooked the past. In so doing, abstractions took the place of experience.

Something else happened to Modernism in the 1960's: there was a cultural revolution. It was not the hard kind of violent revolution that the early Moderns had hoped for but a soft revolution. It was soft for three reasons. First, the 1960's and early 1970's were non-violent, even though there were radical frenzies. Secondly, no dominant intellectual theory generated it. And thirdly, the soft revolution had a broad segment of society sustaining it: youth. The implications of this revolution touched many aspects of society, including life styles, alternate design strategies and the political process. Most of the undeclared principles of that time developed problems, for the 1960's still clung to revolution as a means to achieve a new utopian condition.

The universal outlooks of both the hard and the



soft revolutions have changed and grown into evolutionary stances which I call Post Modern. The mode of the late seventies is to work within a given system, for one cannot drop out anymore. The complex and interrelated nature of contemporary culture does not allow for the simplistic replacement of systems that revolution implies. The consequent changes that are occuring, although rapid, have other identifiable characteristics. For instance, the movie "Star Wars" exhibited an attitude that differs from the "Machine Aesthetic." George Lucas personified machines as people who are rusty, afraid, loyal and humorous. He also put the movie together out of a nostalgia for the ingredients and characters that made up a collage and he did it with a very literal reference system that many people appreciated and enjoyed.

Another popular sucess was Alex Haley's Roots, which was a proud search for what made him what he was. His message was that one's identity, in an unsure

time like our own, could only be understood by seeing life as a continuation of the past, only a part in history's patterns. He did not look on the past as Karl Marx did when he wrote, "The tradition of all dead generations weighs like a nightmare on the brain of the living." Both Roots and "Star Wars" were cultural successes because, among other things, they were primarily stories with a low keyed moral message having an absence of polemics.

Another important characteristic of Post Modern Culture is a holistic approach to life. The best example of this is the ecologists and their interest in patterns rather than parts, for they believe that the human being is only one part of an interdependent cosmic system, so that if you kill a tree you kill part of yourself. This idea has been put forward in many other fields but the essence of the argument is a deemphasis of the individual, and it removes the human being to the place of a modest participant in the universe. Ever since the Renaissance demythologized religion by substituting Man for God as the center of conciousness, there has been the worship and idealization of Man. It does not matter whether the conservatives viewed man as an individualist with free will or the Communist seeing "the world as not generic Man but men; and not men, classes of men."[3] It is all the same centrality. Once human beings are removed from idealization they become infinitely more complex and likeable.

If architecture is a reflection of Post Modern culture with the attendant abandonment of many universal ideals that served as principles for the Modern Movement, what are we left with? Feeling unsure, to be certain; searching for a modified language, of course; looking for adaptive and flexible approaches, without question; but where are we going? Currently architects are dealing with the theory of the parts of our profession: adhocism, typology, contextualism, historical mindedness, process, etc. What concerns me is that the study of these parts of the design strategy, although of great meaning, miss certain patterns of human connections. These connections must be made by an architectural language that communicates with the symbols of words and with the meanings and feelings that have gone through the personal, cultural and educational screens that everyone has set up. Within this framework, a layering of references can be established that is based on the richer references of modest people. This goes beyond the adaptive gestures of given design situations and deals with the mysteries of dreams, memories, and feelings.

To illustrate, I need to tell another story. At present I am working on a 4500 square foot addition to the Hebrew College library in Brookline, Mass. The college is located in an urban context of large old homes gathered around a beautiful linear park studded with gnarled beech trees. At the end of this park and almost on axis is the college library – a Beaux Arts mansion originally constructed for the New England representative of the Carnegie Steel Company. With such a strong contextual situation, the design thrust was to find a compatible geometry that reinforced the use of the library and made references not only to the past, but to present, and future.

A geometry emerged that solved the programmatic needs of an enlarged library while enhancing the existing one, by eliminating stacks from one space and established it as an elegant reading room. The bookstacks were then moved to the addition which included two small symmetrical reading rooms – one closed spacially and one fluid with the rest of the addition. The Beaux Arts would not have treated two similar spaces in two different ways; and even Louis Kahn, who owed so much to the Beaux Arts, would not have used space in this manner. In essence, the addition offered a new contrast of the comfort and repose of an enclosed room with the fluidity of movement and time in the other new library areas.

The exterior of the new work started on the street facade by keeping the existing roof lines, window shapes, and massing. It ended with a barrel vault, recalling spaces and forms much older than the Beaux Arts or the Renaissance. The adjoining elevation repeated some elements of the first and referred to Louis Kahn with a window. This wall stepped down to an elevation that used two tablet shaped windows as literal symbols of Judaism and faced the center of the college – a new private court formed with another of the college's buildings. Memories of the past were mixed with feelings about the present and projected into the future.

Hebrew College Library.

As demonstrated in this project, Post Modernism has a unique attitude about time. Pre-Modern looked to the past for inspiration with Man, God or Religion as the frame of reference. Modern was schizophrenic, as Early Modern looked hopefully to the future and Late Modern saw time as only Now – a depressing, existential Now. Post Modernism's attitude about time has no prejudices. The past, present and future evolve simultaneously.

At Thamesmead Stanley Kubrick made his comment after the completion of the project. Contrary to my dreams, he lost the Mykonos image and saw the linear block as a high energy comment on the future. In the Hebrew College project comments came from neighborhood groups, which said, "The barrel vault on the street elevation is too different. It should be a flat roof like the building that's there." Fortunately, this dialogue came before the addition was built. My somewhat flexible ego has returned to the drafting board, this time with the benefit of having gone to a preview of the movie and read the reviews.

[1] Designed by Henry Wright and Clarence Stein in 1932.

[2] Richard MacCorman, *RIBA Journal* (18 October, 1972).

[3] Daniel Bell, *The End of Ideology.*

BIBLIOGRAPHY

Architectural Record, October, 1967, pp. 385-386.

Architectural Forum, July, 1969, pp. 58-65.

L'Architecture d'Aujourd'hui, October, 1969, pp. 62-67.

Architectural Design, November, 1969, pp. 602-613.

Lotus, Vol. 7, 1970, pp. 283-2679.

Architectural Review, May, 1970, pp. 375-384.

Architectural Year Book, Vol. 13, 1971, pp. 233-256.

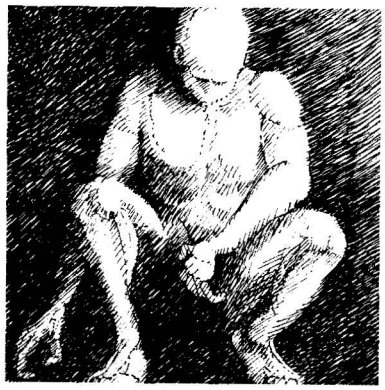
Deutshe Bauzeitung, Vol. 105, 1971, pp. 135-154.

RIBA Journal, 18 October, 1972, pp. 1-15, 879-896.

Bauwelt, Vol. 64, 30 July, 1973, pp. 1229-1237.

Country Life, Vol. 157, 19 June, 1975, pp. 1628-1630.

Progressive Architecture, July, 1977, pp. 62-63.



THE LANGUAGE OF URBAN PLANNING AND THE ADVANCED CAPITALIST CITY

Michael P. Smith of the Tulane University Department of Political Science has recently completed a book, "The City and Social Theory," to be published in the fall by St. Martin's Press. He also has collaborated with Hermann Borghorst of the Free University of Berlin on a research paper, "Toward a Theory of Citizen Participation in Urban Renewal in Two Federal Systems." Professor Smith here extracts from these works one facet of U.S. urban renewal politics: the use of the language, symbols and accoutrements of technology to deflect consideration of citizens' needs in the arena of urban planning.

Daniel Burnham, the turn of the century Chicago architect, introduced his Master Plan for Chicago with the exhortation: "Make no little plans," for they lack the "magic to stir men's blood." This statement, along with the self-justifying rhetoric of the planning profession about the need for "strong statements," "rational-comprehensive land use controls," and "objective planning" by centralized urban designers have helped perpetuate a mythical image of urban planning.

It is the image of rational-comprehensive planning advanced by planning theorists as an ideal model, but taken by many critics as an actual picture of the way urban planners function in the real world.

According to this model, the planner is the value-neutral architect of "orderly development." The planning process envisaged in this model is a centralized process of urban design and execution by technical experts philosophically committed to their vision of the general public interest. In calculating public costs and benefits such central planners employ the most advanced rational methods of data gathering and analysis, simulation models, and systematic evaluation of all possible ends and means.

Ironically, it is Richard Sennett,[1] the chief critic of rigidified modes of thought, that contributes to furthering a stereotype of planners as autonomous technocrats pursuing apolitical goals. Like sociologist Daniel Bell[2] and social critic Theodore Roszak[3], his analysis furthers the illusion that "knowledge elites" are converting their expertise into an autonomous power base. The realities of planning practice in urban design do not support this view.

Planning is a value-laden activity. Value choices affect what planners define as "problems", the type of data they gather, the standards they use for interpreting their data, and the very aims of their research and analysis. In capitalist societies, urban planners have tended to serve the values and interests of corporate capitalist city builders and suburban developers rather than to make key land use decisions themselves. Theodore Roszak in fact acknowledges, but treats as a temporary condition, the fact that planners work within limits set by those who can pay their bills. Their chief political function is to cloak the major private beneficiaries of the land use and investment decisions that have shaped contemporary American society, justifying profit seeking behavior as beneficial to the larger public interest.

The American planning profession grew out of turn of the century urban movements for housing and recreational improvement for workers, "settlement houses," and educational reform. Subsequently, public land use control through zoning regulations became the focus and rallying cry of professional planning work; architects and engineers its major practitioners. The thrust of the early movements was middle class conservative reformism.[4] Their aims were to pacify and integrate the urban worker, to depoliticize public service delivery and make it more "businesslike," to build "model tenements" as a means to achieve social control over the immigrant slumdweller. They planned for such relatively limited goals as civic beautification, public parks, housing code enforcement, and municipal zoning.

In practice, urban land use planners have lacked the political skill and social power to even fully realize these limited goals. Historically, American city planning has stressed civic beautification and public investment in monuments, parks and later subsidized highways and urban renewal, rather than public *controls* of private investment and development decisions. In thus defining their mission narrowly, land use planners have accepted as a "given" the basic economic structure of American capitalism. Working within these boundaries, both early and more recent land use planners have defined problems in ways that contributed to the system's smooth functioning. They have assumed that economic growth was an unmitigated benefit to "the community as a whole". They have worked to reduce the unpleasant visual blight that might be interpreted as a negative consequence of the economic organization of advanced capitalism. They have planned parks explicitly to "tranquilize" the factory laborer out for a day in the open air so that he might gain "the recuperation of force" needed to perform his job efficiently.[5] They have resisted the "politicization" of decision-making processes that built "office park" cities and suburban shopping centers.

Other goals pursued by suburban planners–low density zoning, efficient service delivery, and better highways–also serve the class interests of middle class commuters, while implicitly denying housing, a taxation base, and mass transit benefits to those who were left behind in central cities.

Before the planning profession was rudely awakened by the neighborhood and poor people's protest movements of the late 1960's, they remained insensitive to the values and interests of non-dominant classes and subcultures. They supported the corporate economy's interrelated goals of growth, development, and "higher land uses," regardless of their social and economic costs to disadvantaged groups.

Wirthian urban sociology implies a general theory of society, namely that spatial forms engender social relationships and that the physical environment determines the cultural patterns of human communities. This sort of theory can become a powerful depolitizing weapon in the hands of policy-makers and planning elites. As Manuel Castells has pointed out: "Such a 'theory' is extremely useful to ruling political elites inasmuch as it conceptualizes social organization as depending less on social data, in particular class relations, than on natural, spatial, technical, and biological data."[6]

In the American context many anti-urban planners operating from this perspective have sought to use environmental engineering to alter spatial forms in ways that could avoid the risk of systemic crisis and class antagonism, without changing the prevailing class structure in any basic way. This they did by building urban parks, enforcing residential zoning, and cooperating with the economic and political decisions that dispersed the once dense and heterogeneous urban population into separate residential enclaves throughout the metropolitan region. These measures offered those who were dispersed the illusory hope of escape from industrial life into an idyllic past. Yet no such measures can erase the very real social divisions inherent in a class stratified society.

Thus to further the illusion that social contradictions are amenable to spatial engineering, the specialized language of physical planning is invoked to mystify thought. As this language becomes further and further enmeshed in the technical vocabulary of the organization of space, social conflict groups are gradually disarmed. Technocratic planning displaces political struggle. What is more, the pursuit of profits is justified by reference to the spatial model. Often viable social communities are labeled "dense" and "crowded" slums. These areas are bulldozed, their land uses altered, and the class exploitation of displaced residents is disguised as a form of "help".

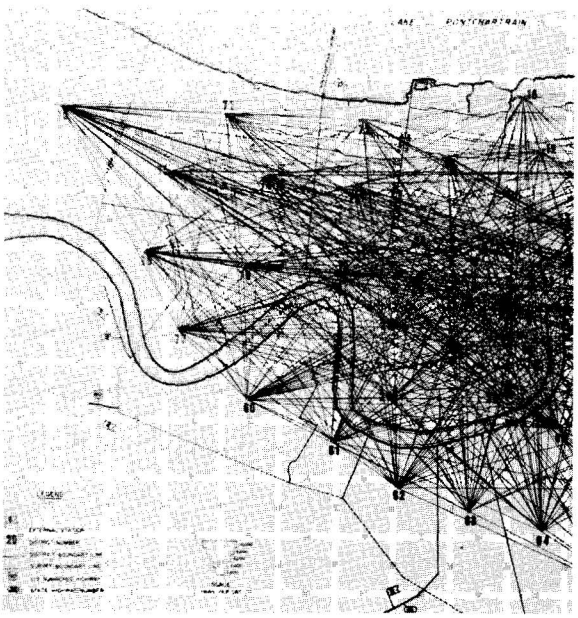
As Warner Bloomberg has put it:

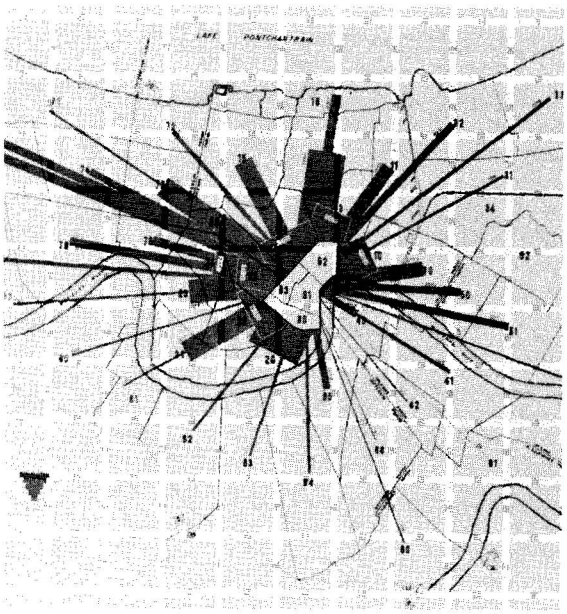
> Planners have thought in terms of industrial parks, not loft industry; of people who wanted backyards, not those who enjoyed streetlife. They have neither designed neighborhoods for poor people nor called for the economic programs which would minimize need for such designs.[7]

In part because of such mental blinders, in part because of the structure of the privately induced public policies within which they worked, in part also because of professional self interest, urban land use planners in the 1950's and 1960's often became willing tools in the hands of economic and political dominants. They "managed" the ritual of "citizen participation" in public planning to symbolize accountability and popular control of policy, while in fact shunting aside the residents of areas that were bulldozed to build highways, highrises, luxury apartments, office parks, and sports arenas. This role of city planners as supporters and legitimizers of private investment decisions is nowhere clearer than in the case of urban renewal policy making. Accordingly, it is to this facet of urban land use planning that we now turn to illustrate the foregoing argument in some detail.

SYMBOLIC DEFLECTION

In the early years of urban renewal implementation renewal elites often reacted to citizen group demands by symbolic deflection. As Murray Edelman has shown, the use of symbolic language and gestures detracts attention from tangible issues of resource allocation. Symbols evoke and reinforce abstract values, attitudes, and beliefs.





The use of public settings is combined with the ritualistic display of technical resources. Prior to public meetings "easy-to-read colored maps and specifications" of proposed plans are sent out to those likely to attend. At the meeting, blackboards, city maps, zoning plans, photographs, and models of future reconstruction are used as symbolic props. Often a staff of planning experts is introduced to explain different technicalities. Various specialists serve to reinforce each other's public arguments because prior to public sessions advanced staff meetings are held to iron out possible technical contradictions and to agree to a common position.[8] This is done so that citizen groups will be unable to detect and use contradictions among experts as a viable argument at public sessions. Expertise is thus consolidated to bolster public confidence in official plans. The impression is conveyed that urban renewal planning is being conducted by competent professional experts. Training credentials and professional experiences are invoked to reinforce this impression. If highly visible experts move to another city or public doubts arise, "new management teams" are introduced with much fanfare.

Outside consultants are used to shore up support and reinforce the "aura of objectivity" created by the consolidation of expertise. Consultants are used to conduct preliminary planning studies and economic feasibility studies which serve to legitimize massive land clearance. Well known and respected consulting firms, which may have been involved in past projects and whose work can be expected to be supportive of official agency goals are especially likely to be hired.[9] Despite all of this technical showmanship, in actuality the lack of careful demand and economic feasibility studies in many U.S. cities has meant that land acquisition and clearance have moved considerably faster than project disposition, and ultimate completion.[10] In the long run this gap between projection and realization has served to undermine public confidence in renewal planning elites.

In the context of public settings, technical and bureaucratic language styles serve several functions. City planners, renewal administrators, and outside consultants apply professional and technical jargon as a smokescreen to impress mass audiences with appeals for "good design features," "higher and better land use," and "non-amendable redevelopment packages." Technical jargon is used not only to impress but also to deaden critical moral and cognitive faculties. The expression "protected environment" has served as a planning code word for permanently removing a low income population from a renewal area and planning for peripheral construction that will seal off the redevelopment area, thereby "protecting" land investors from the "risk" that the former residents might relocate in or near the cleared area and drive down property values.[11]

"DE-POLITICIZATION" AND DEFERMENT TO EXPERTS

Aware of general public attitudes toward "criticism for its own sake," protest groups are berated for wanting to "merely stop the bulldozer," without offering alternative planning conceptions of their own. They are accused of being "latecomers" who would negate the hard work of renewal elites and obstruct community progress.[12]

Typically, in American local politics, technical and bureaucratic language serves to convert political issues into technical-administrative routines. Troublesome political conflicts are conceptualized and projected as problems of design, technical, legal, or economic feasibility to be solved by professionals rather than by political processes on the basis of political value decisions. When successful, such attempts to depoliticize the local political arena weaken the play of local forces in policy-making. But they do not necessarily mean that professionals are in charge. As Harold Kaplan has shown for urban renewal in Newark: "By a nonpolitical environment, Authority officials . . . mean that the cues of redevelopers and federal officials, rather than those of local interests necessarily govern . . . clearance decisions." [13]

CITIZEN PARTICIPATION

Under the rubric "planning with people" renewal agencies have granted technical assistance and "design concessions" to citizen groups who were willing to work closely with them. Such tangible concessions as the relocation of public facilities, stop signs, and minor design changes are exchanged for the support and legitimacy accorded to the land clearance and displacement activities of the agency by means of a plan's endorsement by neighborhood groups.[14] In the main it has been others who have benefitted from this process at the expense of middle and stable working class renters and the poorer residents who are the victims of displacement. For example, in the South End Boston, an area regarded by some as a shining example of the success of "planning with people," thousands of low income people have been displaced. The "consensual" goal of upgrading the areas housing stock that emerged as a result of the technical assistance granted to neighborhood groups by the Boston Redevelopment Agency, has mainly benefitted interests seeking a new hospital complex as well as many upper middle class people seeking housing convenient to Boston's newer Back Bay office developments. The influx of new migrants has driven up rents, causing many long standing moderate income residents to leave.[15] Some low income families were compensated by additional units of public housing level subsidized rental units, but not nearly in proportion to the number displaced.

Citizen survey research is another type of formal "participatory" activity sometimes used as a substitute for citizen influence. To create a sense of involvement, members of citizen groups are invited to serve as unpaid survey interviewers. Under the rubric "City Hall comes to the citizens" even public officials themselves have distributed questionnaires directly to households in urban renewal areas. Using sometimes doubtful "one shot" questionnaires and closed-ended interview techniques, renewal elites try to determine "officially" the interests, needs, and priorities of residents. While data is being obtained citizen groups can be placated with assurances that the situation is under study. Once hard data is obtained, whatever its shortcomings, the interpretation of survey results is discussed with citizen representatives both to heighten their feeling of involvement in policy-making and to guide them toward interpretations favorable to agency priorities. If such gestures fail to placate a neighborhood group, the agency is still in a position to discredit the group by skillful use of survey data to challenge the group's representation of citizen attitudes. Michael Lipsky has observed that defusing an issue by using survey research initially serves a procrastination function. Once a citizen survey is completed it

also can function as a potent symbolic weapon, insulating elites from outside pressures inconsistent with survey results and enabling them to lend legitimacy to their own priorities which coincide with broadly defined goals (e.g., growth, prosperity) supported in citizen surveys. [16]

However, a crucial contradiction remains. The successful acquisition of formal decision making responsibility by neighborhood protest groups may actually obstruct rather than facilitate the realization of self-determined goals. This is because the very formality of the access granted to previously dissident groups blurs adversary relationships in the eyes of potentially supportive reference publics. Instead, formal access symbolizes the "fairness" and goodwill of renewal elites, and the "openness" of the citizen participation process. Attention is thereby focused on the form rather than the content of political life. Public opinion which might focus on the substantive demands of protesters is reassured by the very existence of a formal channel which suggests that the grievances of the powerless are being considered in policy making. As Murray Edelman so perceptively cautions, the danger is that

> by focusing upon popular participation, by clouding recognition of adversary interests, by presenting authorities as helping and rehabilitative, [formal politicization] symbolizes the construction of elite power within narrow limits. Public attention then focuses upon procedures rather than upon their outcomes, so that the power to coerce, degrade, and confuse dissidents is greater. [17]

The crucial determinant of whether neighborhood protest groups are able to convert a normally detrimental formal citizen participation structure into a useful resource is the extent to which they are able to maintain their self-consciousness as "outside" adversaries and their image in the eyes of renewal elites as viable potential instruments of open resistance and disruption. Barring this, they lack bargaining resources and formal participation is more likely to sap their ability to make appeals for equity to outside reference groups than to yield political concessions. To operate effectively as an "insider" requires more than merely a formal seat at the bargaining table. It requires actual or potential power. Without such power the formal right to participate is likely to remain a distorting symbol that blurs the real influence enjoyed by those who do have the bargaining resources to shape policy outcomes.

1 Richard Sennett, *Uses of Disorder: Personal Identity and City Life* (New York: Vintage, 1970).

2 Daniel Bell, *The Coming of Post-Industrial Society* (New York: Basic Books, 1973).

3 Theodore Roszak, *Where the Wasteland Ends* (New York: Doubleday Anchor, 1973). See also Roszak, *The Making of a Counter Culture* (New York: Doubleday Anchor, 1969).

4 Warner Bloomberg, "The Goals," Symposium on Governing Megacentropolis, *Public Administration Review* (September/October, 1970), pp. 514-515. On the value laden aspects of planning see also Thomas Reiner, "The Planner as Value Technician," in H. Wentworth Eldredge, ed., *Taming Megalopolis: Volume I* (New York: Doubleday Anchor, 1967), pp. 232-248.

5 Christopher Tunnard, *The Modern American City* (Princeton, N.J.: D. Van Nostrand, 1968), p. 32.

6 Manuel Castells, "Urban Sociology and Urban Politics: From a Critique to New Trends of Research," *Comparative Urban Research*, Vol. III, No. 1 (1975), p. 8; see also Castells, *The Urban Question* (Cambridge: M.I.T. Press, 1977), and Ruth Glass, "The Alarming But Tired Cliches About Urban Doom," *Times of London* (August 4, 1976), p. 5, for good discussions of the use of environmental engineering and technical jargon to depoliticize planning and zoning decisions.

7 Bloomberg, "The Goals," p. 515; see also Frances Fox Piven, "Planning and Class Interests," *Journal of the American Institute of Planners* (September, 1975), pp. 308-310.

8 Herbert H. Hyman, *Organizational Response to Urban Renewal* (Unpublished Ph.D. Dissertation, Brandeis University, 1967). p. 192. Despite such displays of technical competence, in actuality large U.S. renewal authorities often reserve a large number of staff positions for purely political appointments, to shore up political support from mayors and other political officials and groups. See, for example, Chester Hartman, et al, *Yerba Buena: Land Grab and Community Resistance in San Francisco* (San Francisco: Glide Publications, 1974).

9 For example, in San Francisco, "consultants selected are those who can be relied on to share the Agency's views, and under these conditions it is the rare outside consultant who will risk future contracts by producing a report sharply different from what is known to be the desired outcome." See Hartman et al, *Yerba Buena,* pp. 75, 80; see also John M. Mollenkopf, "The Post-War Politics of Urban Development" *Politics and Society* Vol. 5, No. 3 (1975), p. 290.

10 Scott Greer, *Urban Renewal and American Cities* (Indianapolis: Bobbs Merril, 1965), p. 157.

11 Hartman, *Yerba Buena,* p. 89; on the other uses mentioned above see Hyman, *Organizational Response,* pp. 188, 191; Harold Kaplan, *Urban Renewal Politics: Slum Clearance in Newark* (New York: Columbia University Press, 1963).

12 Kaplan, *Urban Renewal Politics, ch. 7.*

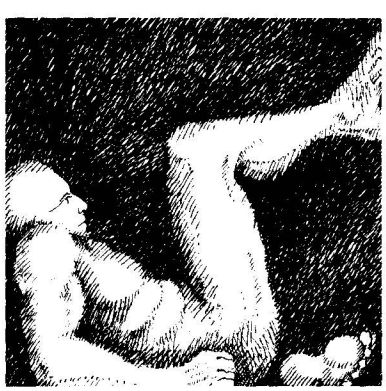
13 *Ibid.,* p. 14.

14 Hyman, *Organizational Response,* pp. 69, 86, 185ff.

15 *Boston Sunday Globe* (May 12, 1974), p. A57; see also Mollenkopf, "Post-War Politics," p. 284; on these impact problems more generally see Martin Anderson *The Federal Bulldozer* (Cambridge, Mass.: M.I.T. Press, 1964), p. 159f.

16 On survey research as procrastination see Michael Lipsky, "Protest as a Political Resource," *American Political Science Review,* 62 (December 1968), p. 1146. On involvement of citizens in administration and discussion with renewal elites of survey results see Hyman, *Organizational Response,* pp. 200, 353; on citizen surveys as priority setters see *New Orleans States Item,* (December 18, 1974), p. A3.

17 Murray Edelman, "The Language of Participation and the Language of Resistance," (unpublished ms., 1976), pp. 7-20.



URBAN DESIGN BEYOND THE SOLAR PANEL

A British barrister, printer, and graduate of the University of Cambridge, Sandy Walkington is currently studying the political implications of the energy dilemna at the Tulane School of Urban Studies. Acting as consultant to City Hall, Mr. Walkington is also engaged in developing a comprehensive energy conservation plan for the City of New Orleans. Using the energy dilemma as subject, this article examines solutions within a holistic and realistic context. Consequential impacts on present and future behavior are of particular interest as Mr. Walkington applies them to urban design.

In 1938, Neville Chamberlain, Prime Minister of Great Britain, returned from his meeting with Hitler waving a piece of paper and promising "Peace in Our Time!" It was a wildly popular slogan. It was also wildly optimistic. Two years later, France, thought to be the greatest military power in Europe, was beaten. Britain survived by the grace of God, German incompetence, and American benevolence. Any thinking person should have perceived the German threat. But nobody wanted to believe it, and so Churchill remained a voice in the wilderness.

We have pursued a similar policy of appeasement with the energy problem no less than we did with Nazi Germany. Twenty years ago geologist M. K. Hubbert predicted that U.S. oil production would peak in the early 1970's, and then go into decline.[1] Other experts queued up to prove him wrong. U.S. oil production did indeed peak in 1970, natural gas production in 1973.[2] They have been declining ever since. Yet these two energy resources supplied seventy-five percent of U.S. energy needs 1974:[3] three quarters of industrial needs, transit, agriculture, home heating, cooking, clothing, etc. Hubbert further predicts that world oil production will peak in the 1990's (see Figure 3), which will close outside avenues of supply.

So we have twenty years to develop new power sources, which is a very short time in terms of world history. Everyone knows the billions of dollars which have been poured into nuclear energy in the thirty years since World War Two, yet nuclear energy only supplies a miserable three percent of U.S. energy needs.[3] The problem seems to be unmistakable, yet cities still happen–I hesitate to use the word "design"–as if energy is going to be no problem. At best some token solar panels are presented as burnt offerings, or skyscrapers are built with windows that open. It is my contention that this is not even scratching the surface of the problem. Therefore this article concerns itself not with architecture in a singular sense – although it has a vital role to play in conserving energy–but with how structures and activities relate to one another and the potential theory for energy conservation.

American cities are uniquely high energy places. Periclean Athens housed a population of 150,000 in a few square kilometres. Phoenix, Arizona, requires a thousand square kilometres to house a million inhabitants. Aristotle wrote of the ideal city having a population of no more than 10,000, so that the whole

should be comprehensible at a glance. Robert Moses devised the urban expressway. Highway designers rather than philosophers have become the arbiters of urban design and, outside densely packed downtown cores, sprawl has become the norm for urban development.[1]

These new cities are high energy cities in a fundamental sense. The people who inhabit them use a great deal of energy both at home and at work. The distances between the two are measured by minutes in an automobile, not by yards on foot. The city itself, because of its extended nature, requires a large amount of energy to function, both for fixed services such as sewerage and electricity supply, and for transit, ambulance services and police. Energy availability must now become a tightening constraint rather than a permissive factor in urban design.

It is unfortunate that the western intellectual tradition, particularly the discipline of economics, has ill-prepared us to face up to an analysis of the energy situation. Classical and neo-classical economics miss the point that fossil fuel resources are finite, and do not deal with the effects of resource depletion. Instead they concern themselves with the mechanisms of resource distribution and relative scarcities, presuming adequate substitutes for every resource on which humanity now depends. M. K. Hubbert once wryly suggested that oil companies should employ economists, not geologists, as their prospectors, since economists always know that the resources are there.

No one has looked at this problem in terms of dynamics, recognizing not only that resources are finite but also–and it is a big "but also"–that there are lead and lag problems in their substitution. The fact that nuclear power exists does not mean that it can supply all our power needs tomorrow, oil shale does not mean an immediate abundance of oil. Nor can any country simply rely on world supplies of fossil fuels. The world is an abstraction. It has no government and has no way of allocating resources except by trade and self-interested aid. No country, not even the U.S.A., can afford to plan its future on the assumption that the rest of the world, motivated by kindness, will keep it in the style of energy consumption to which it aspires.

In 1975, U.S. energy consumption was 2,349.5 million metric tonnes of coal equivalent.[2] In the last fifty years its energy demand has grown at four percent per annum, that is, doubling every seventeen years.[1] This demand leveled off after the first Arab oil price hike, but this demand plateau merely reflected a general downturn in the economy, and demand rose considerably last year. Between now and 2,000 A.D., the U.S. population is expected to increase by 60 million (U.S. Census Bureau); that is a growth rate of nearly one percent per annum. Energy supply will have to match this if energy consumption per capita is to be maintained, and history has shown that a higher growth rate is required to maintain full employment in a capitalist economy. Nevertheless, one should be aware of over-simple energy/GNP ratios. The Ford Foundation "zero energy growth scenario" still requires an overall increase in annual energy supply of fifty percent for the U.S.A.[4]

Any examination of the American energy situation must begin with petroleum products. Oil and natural gas supplied seventy-five percent of U.S. energy needs in 1974.[3] This dependency has scarcely changed over the last ten years.[2] However, U.S. oil production peaked in 1970, natural gas production in 1973.[2] They have been in inexorable decline ever since. My discussion will concentrate on oil, with which natural gas goes hand in hand.

Taking outside estimates, the U.S.A. has remaining oil reserves of 135 billion barrels(See Figure 4).

(Please note that *total official* U.S. reserves barely exceed 32 billion barrels.)[2]

U.S. annual production in 1975 was three billion barrels.[2] This suggests a further 45 years of production at present levels. In fact, it would be physically impossible to maintain production to the bitter end at these levels, but there is hope that production can be held fairly steady until the year 2000, after which it will go into increasing decline in accordance with the depletion curve of Figure 4.

The potential for synthetic oil from tar sands (no proven process), oil shales (environmentally disastrous, and only 80 billion barrels with present technology) and coal (the entire world coal production would be required to supply the U.S.A. with its oil needs) have been vastly over-emphasized. They will provide a few years grace, no more.[1]

Let us return to that annual production figure of three billion barrels. This is not nearly sufficient to satisfy U.S. needs and the difference must be imported. The percentage of total U.S. oil demand now represented by imported supplies ranges between forty-five and fifty percent, costing circa $45 billion per annum, almost half the U.S. defense budget. The prime goal of the Carter energy plan was to reduce oil imports from 8.5 million barrels per day in 1977 to six million barrels by 1985.[5]

Look at Figure 4 and see what that will require of the U.S. demand curve: an unlikely complete turnabout. The latest report of the Petroleum Industry Research Foundation (October 1977) thinks we will be lucky to hold imports to present levels, while Exxon thinks the 1985 figure will be more like

12.5 million barrels per day. I wonder where they hope to get it from.

Hubbert and Warman suggest world oil production will peak sometime in the 1990's, roughly in accordance with the depletion curve of Figure 3.[6] Furthermore, oil is not a world resource. It is an Arab resource, or at least sixty percent of it is. The Arabs can only absorb so much foreign capital, and as the price of oil goes up they will want to produce less, not more, although they cannot afford to ignore the potential collapse of the capitalist system. They will produce their own needs, export enough to pay for their own imports, and only coincidentally will this meet the demands of the buyers.The U.S.A. will have to compete in this market with the other developed countries of the world, and has at present a rather weaker trading position than many of them due to the decline of the dollar.

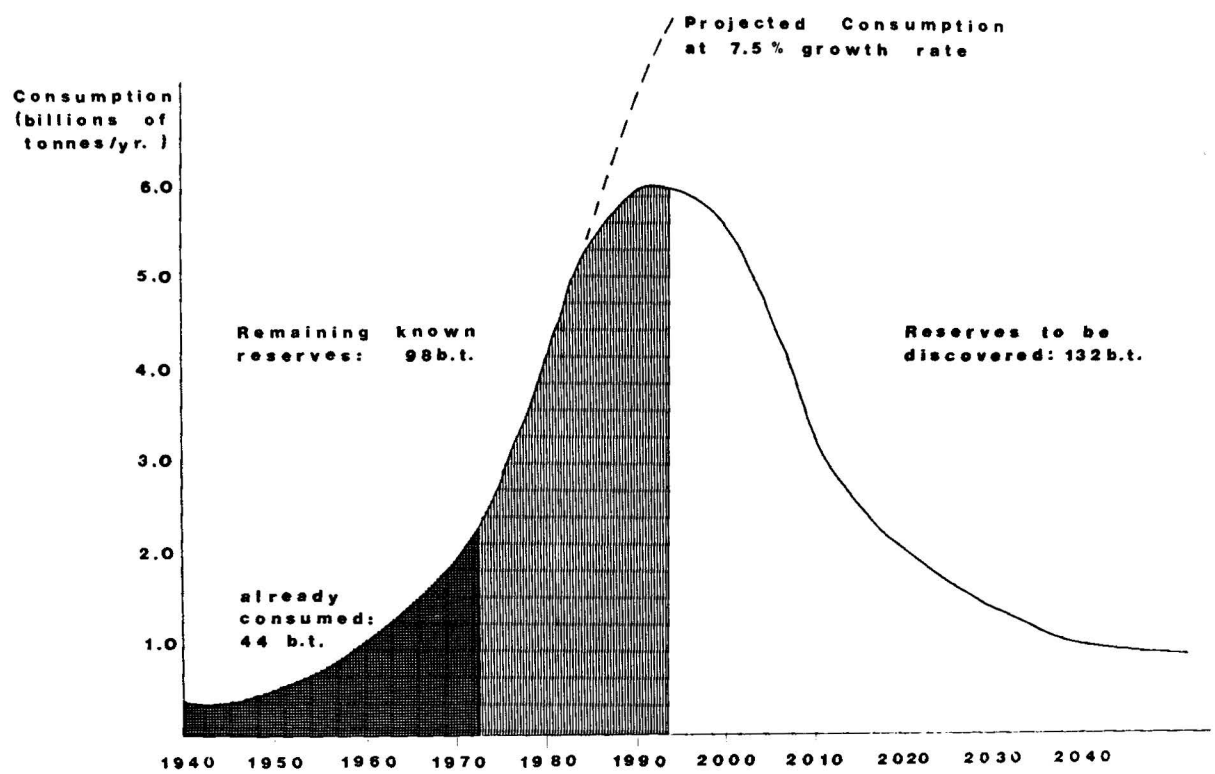
It has, of course, got the Bomb and the Marines, but military might, while encouraging extraction, is not going to create new supplies.

A major new source of energy has to be found, and one that is suitable for the continuous processes of a great industrial nation. It has got to be of a high enough grade to provide electricity; it must provide a reasonable net energy gain; it must be clean and it must be constant. Finally, it must be quickly accessible with present technology.

This rules out most of the alternative resources which environmentalists are so fond of citing. They should not be ignored, but they are essentially placebos, not panaceas, many no more practicable in the short term than perpetual motion machines.

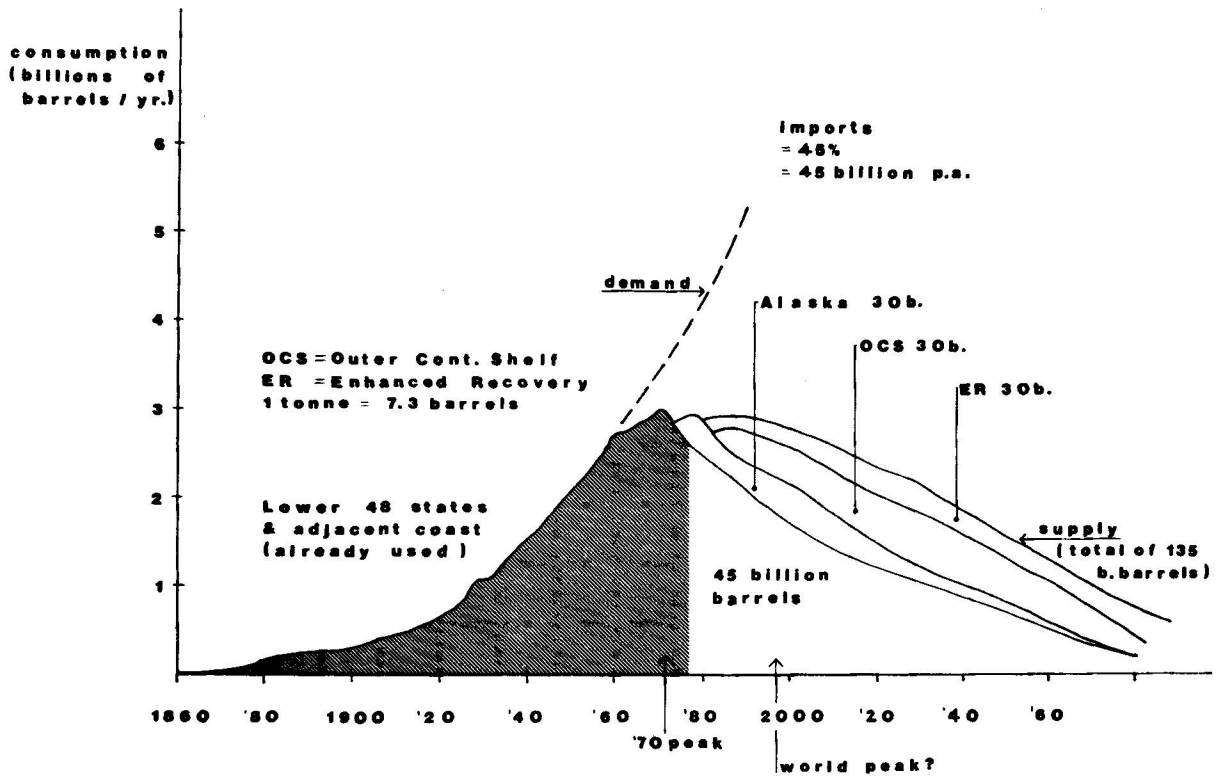
If we can solve the problem of storing excess energy for use in low periods, then the variable sources, sun and wind, have potential. Otherwise their use is largely confined to "Walden II." Nuclear fusion, in spite of massive research expenditure, remains technological gobbledygook. Geothermal is minor. Energy from waste is absurd–better to stop that waste at source and save far more energy, rather than encourage flatulence. Ocean thermal is perhaps the most promising, a form of solar energy which provides fairly constant power: but even its most enthusiastic proponents do not see it making a contribution until the 1990's.[1]

FIGURE NO. 3



THEORETICAL DEPLETION CURVE FOR WORLD OIL RESERVES OF 274 BILLION TONNES

FIGURE NO. 4



Depletion curve for U.S. oil production

My contention is that we must still be looking at conventional "off-the-shelf" technologies for short term solutions. This does not mean that we should ignore alternative energy resources. On the contrary, but they must be seen as a long-term investment for our children.

But in the short term, I think we have three choices: coal, nuclear fission, and conservation. For reasons I will enumerate below, I regard conservation as being by far the most practical of these, hence the importance of examining and redesigning our concept of the city.

Coal and nuclear fission are by far the most immediately practical alternatives to oil and natural gas, although both pose considerable problems. I will begin with nuclear fission. Not wishing to be accused of being a wet liberal, I will ignore the civil liberties and environmental issues and proceed to a problem scarcely anyone seems to have contemplated.

It is a problem inherent in the whole resource substitution plan, specifically the heavy energy investment required in developing a new energy supply. Nuclear power at present supplies a mere three percent of total U.S. energy needs, ten percent of its electrical energy.[2] Gerald Leach has suggested that a nuclear programme expanding at an annual rate of seventeen and one-half percent (i.e., doubling every four years) would absorb all the existing nuclear energy output *simply to keep the construction program going.* My own figures suggest a growth ceiling of fifteen percent per annum. There would be no net energy gain to society until that rate of increase was slowed down, and a net energy loss if the rate was increased.[7] Yet something like the seventeen and one-half percent growth rate is required to raise nuclear's contribution from its present three percent to a meaningful level by the end of the century. What is more worrying is that there may be the same sort of constraint on the development of coal and on all other technologies.

Amazingly, no one seems to have done any research on this, yet we may find ourselves

manuevered into a position where we need our exponentially declining resources simply to exist, having none to spare developing new resources.

There is no shortage of coal in the U.S.A. At present consumption rates there is enough for 2,000 years.[1] However, it at present supplies a mere twenty percent of energy needs, considerably less than most other advanced industrial nations.[2] This means that there are going to be immense substitution problems.

U.S. coal is very dirty. It poses almost as considerable pollution problems as does nuclear fission: experiments are at present being made with a fluidised bed generating process, but they are still in their infancy. The coal industry is beset with vicious management-union disputes, which will hinder quicker extraction, if any extraction at all, according to recent experience. It takes ten years of development before a deep mine starts producing. Strip mining is quicker but immensely destructive of the environment, potentially conflicts with agricultural interests, yet it is U.S. agriculture that is paying for the current oil deficit. Most of the coal is in the west where it is not needed, but the U.S. railroad system has been wantonly destroyed, so there is a major problem of transportation. Coal slurry pipelines have been suggested as an alternative, but the west is short of water, so water will have to be piped in in order to pipe the coal out, creating yet another energy merry-go-round.

The simplest way to postpone the energy crisis is to consume less energy.

There is no question that the U.S.A. is horrendously wasteful of its energy. With five percent of the world's population, it consumes twenty-nine percent of its energy.[2] More to the point, an American consumes at least twice as much energy as a European (except, curiously, for a Luxembourgeon, consuming half that of other Europeans), for a quality of life that some would argue inferior.

If U.S. cars were built to the energy consumption standards of European ones, they would save eighty million tonnes of crude oil per year, twice the annual consumption of China.[1] Detroit is being dragged kicking and screaming into the real world, but it is too little, too late. While useful, eighty million tonnes (which equals 584 million barrels) does not make an enormous dent in U.S. oil imports (see Figure 4).

Big savings could be made in domestic consumption through better insulation and more thought. The best way to encourage this is going to be by fairly hefty price increases for energy. But industry—the biggest energy consumer—is generally fairly efficient in its energy use. It is argued that products should be examined for their benefits and utility. But who is to judge that people are to be thrown out of work for producing unnecessary packaging or whatever? There are no easy answers.

Waste has been institutionalized into American society. It will take time to change that, and time is perhaps our first finite resource. Organizational theorists discuss the inertial factors which hinder adaptation. There are problems of transferring capital investment (e.g., converting oil-fired generating stations to coal, etc.). There are constraints on information flow (M. K. Hubbert accurately predicted the U.S. oil production peak twenty years ago and was derided or ignored). There are the normative restraints generated by history, (the institutionalization of waste, etc.). There are the political constraints inherent in democracy and exaggerated in the U.S.A. with its over-democratic constitution (at least President Carter has tried).

Of course the U.S.A. will cope, although I suspect that its world hegemony will have gone for good. Man has surmounted past resource crises. But never before have so many people with so much capital investment been involved in the need to make resource substitutions. The fact that the U.S.A. is a highly interdependent society, hooked into certain limited resources, makes change much more difficult. That is why a comprehensive national energy plan is required now. As major energy consumers, cities will have an integral part in any such plan.

I am neither architect nor planner. I would like to think that the above information should encourage members of these two professions to think through the implications of the energy crisis for themselves. So my concluding remarks will be brief.

It should go without saying that our starting point is the present. We have our cities, towns, industries, and social organization; the future will necessarily incorporate this heritage. Alternative technology has an emphasis on personal freedom and responsibility delightfully reminiscent of the ideas of Kropotkin, but it will make a negligible contribution towards sustaining life in Paris, Stockholm or New Orleans.[1]

There are two problems. The first is how we convert our present cities to a less energy consumptive state. The second is in what form do we design our new cities. These are separate issues, for I believe that further expansion of our existing conurbations is not desirable, since it will only exacerbate the problem of internal mobility.

I view the so-called right to mobility as a cuckoo's egg laid by the road-transport lobby. People do not really want mobility: they want access to facilities. Gerald Foley suggests that movement could be regarded as an index of disorder, in that it measures

the extent to which things are not in the desired relationship to each other! This is a concept basic to the design of kitchens, factories, offices. But for some reason, traffic flowing along a road is seen as demonstrating the need for that road and the cleverness of the traffic planner in providing it. Future U.S. urban planning should be far less reactive, much more willing to take the initiative. The right to mobility should be replaced by the right to what Ralph Knowles has called "close contact diversity." [9]

Lessons might be learned from the older European cities. An immediate end to zoning seems desirable to encourage more uniform dispersal of employment, accommodation and services. Far from being a disaster, I believe this would liberate the terrible suburban compounds which have blighted so many American cities, destroying the sense of urban community and responsibility.

New towns can be designed so as to eliminate most unnecessary journeys. But in older cities public transit will have to be developed. This is going to be a major priority as the middle class use their economic muscle to return to the city centre, forcing the poor into the suburbs: a complete turnabout of traditional white flight. The problem remains that some suburbs are so sprawling that it is questionable whether an economical transit service can ever be provided. It is a political as much as a planning problem.

Bicycles should be encouraged. Cycle lanes completely separate from and better maintained than the road system should be provided after the pattern of Stevenage new town in England. New buildings should incorporate cycle parks, showers and locker rooms. Electronics in the shape of videophones could probably eliminate many business journeys.

There must be an end to the construction of high energy buildings. Most skyscrapers have an indiscriminate design suitable for nowhere. What happens when blackouts and brownouts stop elevators and air-conditioning, and windows will not open?

Buildings and the city layout should once more respond to their environment, as they did traditionally. Ralph Knowles examined the pueblos in New Mexico as energy systems designed to mitigate seasonal variations in insolation, and found remarkable precision in their construction. The fullest benefit was taken of the sun's heat in winter, maximum protection was afforded against its rays in summer.[9]

On the basis of his research, Knowles suggests that urban growth should concentrate on transformation through increasing complexity in the same space, rather than on traditional crude expansion. With increasingly sophisticated computer technology, it seems to me not difficult for architecture and urban design to concentrate on energy conservation as function. I believe it would make for a welcome discipline in the design of cities, and would create its own aesthetic of exigency.

Materials would reflect a conservative ethic. Spatial hierarchies of use and activity would be carefully considered to minimize waste of time, energy, and matter. I think this would provide for a much more positive reactions to criticisms of modern architecture than the rather ineffectual posturings of people such as Charles Jencks.

Gerald Foley's idea of a "high cost energy scenario" is, I think, a useful architectural and planning tool.[1] All energy costs would be multiplied by a factor of ten in real terms. This would not pretend to be a prediction, but it would break through the assumptions and habits of thought conditioned by the conventions of past decades. Urban form and infrastructure and the transport patterns to which these give rise are the determining features of much of urban life. But they are often manifestations of affluence and the easy availability of low-cost energy. A high cost energy scenario would force reappraisal at this level and indicate the direction in which change should be guided.

Yet all this will require a level of planning and control that is anathema to most American politicians. We must have freedom and if that includes the freedom to commit suicide, so be it. Thus most municipal action has been on the level of energy audits of city buildings, retroditting of insulation, purchasing on the basis of life-cycle costing. While admirable in their intent, these measures' effectiveness can only be proportional to the city government's ten percent share of community energy consumption.

A stronger commitment to energy conservation must, as I have indicated, take local government into a wide variety of programs and policies. Davis, California has grasped the nettle of building codes and, by prescribing standards of insulation and permitted areas of glazing, found to have cut energy consumption in new housing by up to fifty percent with an increase in capital cost of some $50 per unit. But Davis is a civilized, liberal, university community. Normally hell hath no fury like a contractor confronted with new building codes.

No city has really faced up to the mobility problem. More than a quarter of energy consumption is in transportation. New York City, for all its faults, is an excellent example of the energy benefits of a

concentrated urban area. Whether fiscally irresponsible or not, it is clearly responsible on any ethic of energy conservation. While comprising nine and seven-tenths percent of the U.S. population and disposing of twelve percent of the income, New Yorkers consume only six and four-tenths percent of the energy. Partly this reflects the lack of heavy industry, but it also emphasizes the benefits of density and good urban transportation.[10]

Seattle in many ways has become the energy utopia of the U.S. Faced with the dilemma of taking part in a third nuclear project in Washington State, they estimated future energy demands and opted instead for aggressive conservation measures. Along with insulation standards and other individualized projects, they have recognized the need for a holistic approach. So they are committed to developing high density housing in and around the downtown core, encouraging new housing construction within existing suburban areas on developed land previously ignored in their rush for the country, and limiting the expansion of housing in new suburban areas.[10]

Much of this is opposed to traditional American political ideology and yet, without a political base, comprehensive, integrated energy policies can never be brought into effect. This is a problem for local governments, and can only be solved through debate and discussion, trial and error. It is only such a solid electoral base that permits Davis and Seattle to act effectively. And it will only be with the support of such a nationwide base that the federal government will be able to emulate them in producing a national energy plan.

One final thought. It is impossible to conceive of an energetically ideal city, more so if it is large. A city designed on the principle of minimizing energy consumption would provide no roads or services. The most miserable squatter camp would be the pinnacle of urban design. Clearly there will have to be compromises. I hope that I have sketched out the boundaries within which those compromises will be made.

1 Gerald Foley, *The Energy Question* (London: 1976).

2 UN Statistical Yearbook (New York: 1977).

3 BP Statistical Review of the World Oil Industry (London: 1974).

4 Ford Foundation Energy Policy Project, *A Time to Choose* (New York: 1974).

5 Executive Office of the President, *The National Energy Plan* (Washington: 1977).

6 HR Warman. *The Future Availability of Oil* (World Energy Supplies Conference, London, Sept. 1973).

7 Gerald Leach, *Nuclear Balances in a World with Ceilings* (International Institute for Environment and Development: 1974).

8 Hannan and Freeman, *The Population Ecology of Organisations* (American Journal of Sociology vol. 82).

9 Ralph Knowles, *Energy and Form* (Cambridge, Mass: 1974).

10 Richard Mounts, "What Cities are Doing About the Energy Crunch" *(Nation's Cities*: March, 1978).

A DISCOURSE ON THE ARTS, BOTH APPLIED AND FINE

Timir Datta of the Tulane University Department of Physics has prepared a critique of arbitrary limitation of technological development and deployment. His multi-faceted approach includes historical and anthropological background, and a discussion of the control of technology in the countries of the third world, an area of special interest to this native of Calcutta. Mr. Datta's analysis leads to the conclusion that, as technology begins to satisfy functional requirements, it will become primarily a medium for creative human expression.

Egyptian vultures.

The knowledgeable reader certainly would recognise the title of this article as the translation of the Greek word "technology".

When first borrowed in English in the 17th Century the word was restricted to the applied arts alone; and after three centuries of evolution today many lexicographers and authorities even avoid the word 'arts'. Jacques Ellul, writing for "La Technique," refers to technology as "the ensemble of practices by which one uses available resources in order to achieve certain valued ends"; "certain valued ends," no doubt, but if Monsieur Ellul had said necessary ends he would have been a little closer to the truth.

Anyway, to a user a word generally gives rise to a much broader concept and idea than its dictionary meaning. So, technology is everything that involves farming, animal husbandry, chemicals, metalworking, electricity, automation and space travel, etc.

Further depending on one's threshold, he would assign approximately 70 KBC (Neanderthal Society: simple tool making); 40 KBC (Cro-Magnon: advanced tools with head and shaft); 20 KBC (Neolithic: wheel pottery); 10 KBC (Framing, metals age); or 2 KAD (Electricity, space travel) as the birthdate of technology.

All this is tautology; not only that. Let us look a little deeper: does it mean that a Galapagos finch, a sea otter, orangutan, gorilla, chimpanzee or a termite is a practicing technocrat? They use objects (which are not parts of their own body) to gain mechanical advantage! So maybe agriculture, animal husbandry, irrigation, air conditioning or even solar heating: the right bench mark? The flood gates of the insect world have to be let open to welcome the fellow technologists.

It could be argued that most of the above "behaviors" and acitvities are "inherited" – no? Yes – but then how much of the "human actions" or even "intelligence" is non-genetic is at best a cultural, religious and anthropomorphic ego-surrounded myth; until very recently it was regarded too sacred to be defiled by any rational investigation.

Finally, those of us "fire-worshipers," who would, rightly, point out that none of the above mentioned creatures uses fire, should be asked if they are going to rule out the existence of "intelligent," sustaining and multiplicating beings in some oxygen-poor cellestial environment just on that ground? Beings might even have non-chemical "vis viva"! There is no justification to rule out such possibilities.

By now we are beginning to realize the difficulties of isolating technology, our object of prey; let alone laying down a code of ethics for it.

Galapagos finch digging for insects.

Of the four environments: cosmic, natural, social and technological, the last two – being man-made – have a symbiotic existence, although there is nothing inherent in the technology – society relationship to make it synergistic. Civilisations have been known to freeze or even disinherit their trades and skills. The preoccupation with theology, a lack of interest in things mechanical and the resulting stagnation of Middle Age Europe being a textbook example. The Hellenistic-Islam-Latin-West-MidEast barter of technology might be just one and one-half cycles in the love-hate relationship between technology and sŏcieties.

No matter what values were attached to technology, the stories of the various civilisations closely duplicate their crafts and skills. The rise and fall of an empire is faithfully reproduced by the growth and decline in its technological health – not necessarily as a cause/effect sequence, but almost always coeval.

Let us look back for awhile.

A large period of antiquity may be regarded as the halcyon days of industry, when technology was primitive and there was "general progress" for everybody concerned: bigger cities, more production, more food as time went by. Then the city states became sufficiently large, prosperous and strong to indulge in adventures which sometimes resulted in total depopulation of one by the other. So that technology had ceased to be a harmless activity and means of creating an agreeable environment. The nascent technology not only fostered the genocide of a dense populace by neighbors but also through pathogens, more so due to the increased mobility of the vectors.

Of course this is an infinite simplification of the relevant details; further, some civilisations were non-urban, Egypt being the canonical example.

The then contemporary technology was rather ill developed, either to usher in any cosmic improvement, or to leave any permanent scar. Again, the exceptions in parts of Mediterranean Africa under Roman occupation, where due to wanton defoliation and crude irrigation, quickly turned fertile tracts to their present desert-like state. Anyway, globally, there was general growth, and practitioners of the various trades were esteemed and usually accepted or treasured even in foreign lands.

Around the 16th century the returns from applied sciences were sufficiently tempting to attract quite a few prominent Europeans. Remember: this was the Reformation, and at least a knowledge of the printing press was useful. People like Francis Bacon organized groups of enthusiasts to find the nature of things. As is well known, the three succeeding centuries were a period of extreme technological fervor. This romance between the western society and technology reached an orgasmic climax at the spectacular Crystal Palace in the 1851 London Exposition.

To many sensitive people this avalanche of machines was overwhelming and was accepted. Henry Adams was appalled by the displays at the Paris expo in 1900; he felt being faced with a new godless "electric" religion of science. The two global wars that followed have definitely strengthened such suspicions, but they have also made us all aware of the potentials; technology is serious business. Special personal, nationals and global commitments must be made in regard to it.

Sculpture room of the Crystal Palace.

Parts of a question like the environmental pollution could be handled by technology itself, just as the epidemics that accompanied the neo-industrial urban environ were controlled by improving public hygiene, vaccination, sulpha drugs and other antibiotics, etc. Further, technically it (pollution) is a solvable problem given the time and attention.

Interestingly, the pollution problem reveals the "Goedel"-like "structure" of technology; that is, the existence of situations due to but not controllable by technology. This is a more basic and deeper problem (than, for example, pollution). So (that) by its very nature industrialisation leads to non-technical problems and makes it inseparable from politics and economics. For instance, many nations who by historical accidents, nature's non-cooperation and/or by the design of the more industrialised societies are denied prosperity have strong emotions against any global control of pollution.

Some such national leaders rightly or wrongly suspect such measures to be one more attempt to keep them underprivileged, first by denying the available means to face immediate problems and secondly by making them pay more through futuristic (often untested!) technology.

These concerns may even be legitimate, as the advanced countries traditionally have shown extreme reluctance themselves to conserve natural resources like petroleum or sperm whales. At home they are known to tolerate polluting systems on socio-economic grounds.

Alternative technologies will eventually be developed, but "real-politik" seemingly thrives on ultra-myopic solutions. At the first global environmental conference in Stockholm, a Ghanaian delegate was reported to have said that "a pesticide (which) had such lethal capacity would be good news" to them . . . "my people would use it to kill fish and then eat them." Politicians may accept poisoning of the people so long as tonight's supper is guaranteed, but I wonder who else would settle for that?

The superpower arms race is a similar problem: the real threat here is not the nuclear holocaust alone but also a bleeding of resources. Conceivably the same engineers built both the offensive and defensive panoply simultaneously, but it took the sociologist and politician a third of a whole century to start the SALT talks. The society should prepare itself to be able to appreciate the inventions of a "Leonardo-like" genius, but also so that it can cope with the related politico-economic impacts.

Over-emphasis and -rewarding of technology by the earlier generations, the Indo-China war, a poor balance of trade and the loss of an indisputable industrial superiority have bred the "nature children in the Western Continent in recent times. Many such individuals left for kibutzes and communes, and, to de-emphasize mechanization, have opted for beasts of burden instead of the internal combustion engines.

It reminds me of a Calcutta family who avoided using electricity in the family chapel and burnt candles for illumination. As long as there is central air conditioning to protect from the vapid Gangetic low lands or a larger stand-by society is available to fall back on in the moments of personal or economic need, such rejection is not above suspicion. If anything, such recidivist actions do not solve the issues but rather postpone them for the time being.

How many of these innocent communes can support say just five generations of natural (should we say Malthusian?) growth? What would happen if the entire twentieth century population preached and converted to 19th Century methods?

One of the above examples shows the popular attempt to keep technology away from morality and religion. But like all other human activities, they overlap and a simplistic exclusion of electricity from the altar does not prevent it. Further, such double standards are no longer operational. As was apparent earlier, some of the contemporary problems may be avoided by restricting the size of the human society. Here could be no more sidestepping. Medicine may give the means but it is the theologians and moralists who have to take them down into the "trenches", to the "front lines" where each couple, each individual is fighting a battle for survival. Those of us who are hesitant to give technology such a profound role in our personal lives may find themselves giving a blanket okay to the extreme technologies needed to support uncontrolled population growth. If the streets of New York or Hong Kong are any indication, I wonder what "rules of the jungle," what morals would be operational under such conditions?

Using natures controls on population may be attractive to some believers of "natural ways": I for one would like to make the choices myself rather than the gods of flood and rain or the viruses of plagues!

Strict following of a personal Book of Conducts is not much help either, unless the gurus are willing to re-interpret the "sacred codes," because the basic concepts like good deeds, beauty, etc., evolve. Take, for instance, female pulchritude: in feudal days it meant an alabaster complexion, lavish and plumply built. This is

very reasonable when most people are working to death out in the harsh weather; such a well-fed, inactive, pale, pigmentless look is the rare sign of high birth and privileges; who could be so foolish not to be attracted? Industrial revolution turned the table around and trapped everybody in effortless, sedentary, repetitive duty, inside dark, sunless factory shops; then they were the fortunate ones again who could follow the sun, be active and keep slim. Even today in countries like India and Japan a paler, plump woman is appreciated.

Not only subjective concepts like beauty mutate with the technology, but the ethics of particular actions change, too. Mass vaccination, say for smallpox, is recommendable as long as there remains a threat of epidemic, but once the pathogens (smallpox virus die outside of a host body) are irradicated, then such artificial mass injection will itself pose health hazards and naturally would be regarded unethical.

A watertight classification of good and bad is not meaningful. When demand pregnancy termination is made effortless, or premature babies can be better protected, or machines supplement more and more vital bodily functions, or "viva-in-viator" is made possible, the sacred question of life and death will lose being universally good or evil, and will become accountable; mercy will be more meaningful.

Regarding technology the means of the greater good for the greater number (at the cost of others?), as the seat of all good (and graceful?) in a Marx-Engels fashion, should be as unattractive as the doctrine of technology the "master-villain."

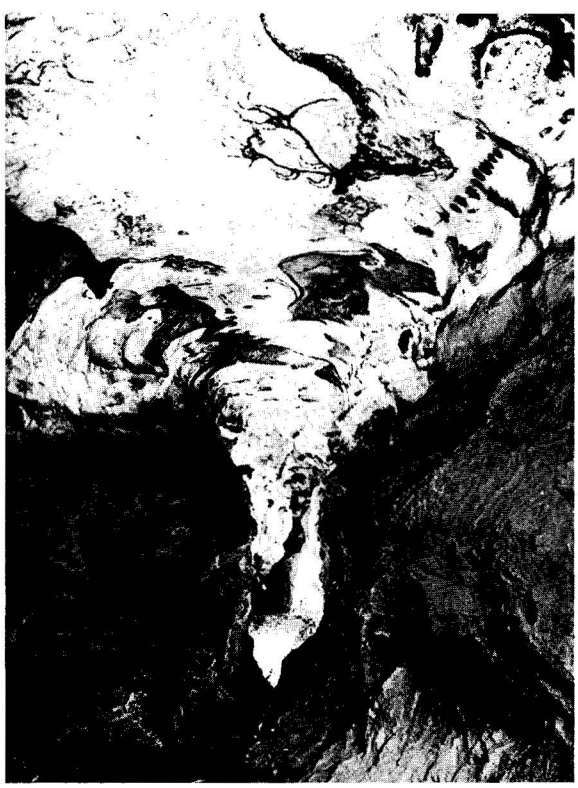
Being an evironmentalist is fashionable today, but once the design engineers realise that, along with the technical demands, a system is required to protect the surroundings, such a lobby would be unnecessary. Some rigid guidelines may be needed for a specific period, but the efficacy of laying down a permanent role for technology to play is very questionable, and the present author will refuse to comply with such demands. Maybe the tiny social insects were too hasty in clamping a tight social control over themselves and froze their technology, hence clearing the path to glory for our shrew-like carefree ancestor leisurely evolving on the primeval grasslands.

Aberdeen mud-flats, Hong Kong.

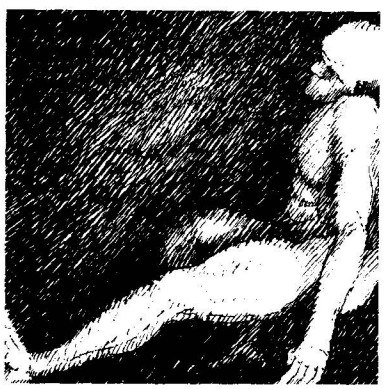
The purpose of the human endeavor called art is no longer magical, mystical or religious, and an art historian is quoted to have said, "Art is for life and death." In a like manner, long after technology has given us all the things useful, it is here to stay. Not as the tool-man axis in the Heisenberg way but as a frontier of challenges, creativity and satisfaction.

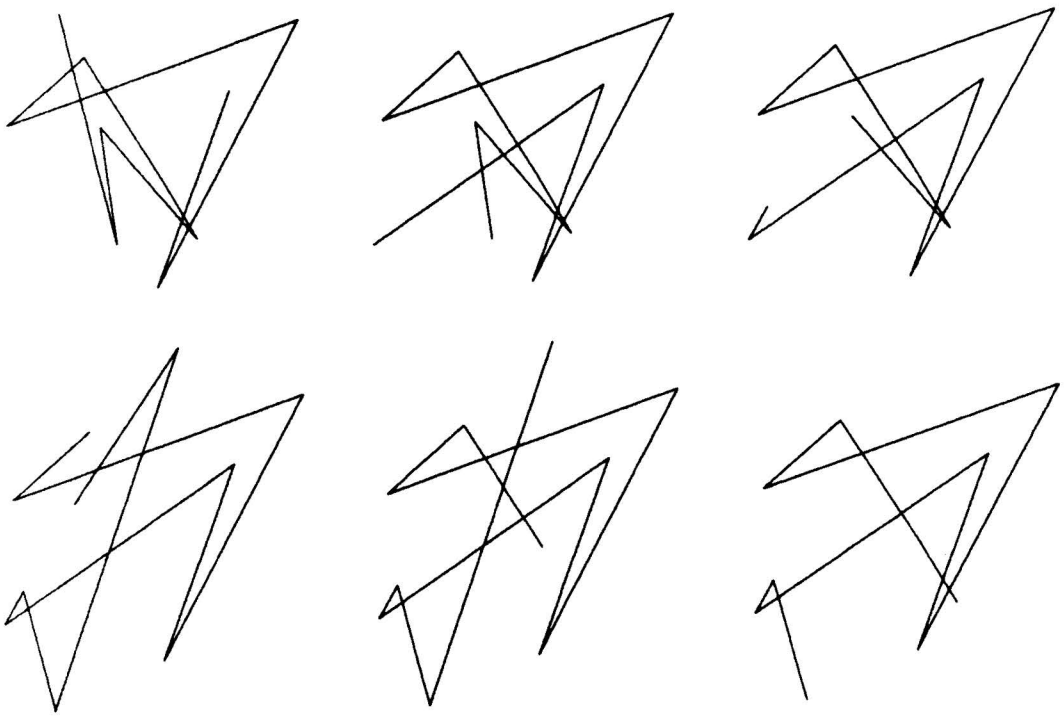
Such directions are already apparent even in some engineering disciplines like architecture, where the functional needs are supplemented by the personal needs of the residents, neighbors and the designer. A painter today is not required to guarantee a good hunt as his ice age counterpart in Lascaux caves had to. We will be creating machines long after they are needed to keep the bread lines away.

In the millenia to come technology freed from any set role to play would be one more personal involvement, reflecting the life, death, heartbreak and the glory of man, the humble us.



Cave paintings, Lascaux, France.





Six sucessive steps in the evolution of a kinetic sequence produced by the program PATHS: read clockwise from the upper left.

SOME EXPERIENCES WITH COMPUTER GRAPHICS

Charles J. Fritchie, of the Tulane University Department of Chemistry, has been developing techniques of cybernetic art. He has held exhibitions at the International Sculpture Conference (New Orleans, 1976), The Contemporary Arts Center (New Orleans, 1977), and the Huntsville Museum of Art (Huntsville, Alabama, 1978). We reproduce here several of his recent works, along with his discussion of the techniques, philosophy and potential of computer-assisted art.

Writing this article has been a bit difficult. The editors, having seen some of my computer art programs at work, asked for an article describing some aspect of the field. I easily accepted, feeling the discipline would clarify my own ideas and let me answer some criticisms and doubts about computer art in general. Planning the article soon filled me with stage fright. Other people have worked in computer art for fifteen years or more and have exhibited at places like the Museum of Modern Art; my background is in chemistry and I began art almost by accident 2½ years ago. My direction is insecure, although I am pleased with some initial efforts. On the other hand, I am not the authority for a general survey, and I do not think it would be as interesting in this context as a personal account would. Therefore, my plan is to outline the field generally and follow this with my reaction toward some work produced at Tulane. It must be stated at the outset that the work shown here is attributable to a collaboration between Professor Robert Morriss and

myself, and it is a truly joint effort. The views offered, however, are my own.

First, I should say a few words about the origin and nature of computer art. It can refer to any art forms such as sculpture which incorporate a computer as working element, controlling evolution of the work or providing response to the environment. However, because of the newness of the field and problems of reliability which arise with mechanical objects, computer art's greatest early growth has been in the field of graphics, and primarily in static graphics or in movies produced over a long time period, frame by frame. As costs have fallen, kinetic computer graphics have arisen and even now computer generated graphic sequences appear in television advertisements. It is this fairly widely available, but still expensive, static or kinetic graphic art which I shall describe here.

Two of the first exhibits giving serious artistic attention to computer graphics (and electronic art in general) were "Cybernetic Serendipity," held at the Institute of Contemporary Arts in London in 1968, and "Machine," held at the Museum of Modern Art in New York the same year.

In 1968, the only standardized equipment which could be used for "end product" art was the high speed line printer, which is grid oriented, essentially a fast typewriter. Except in a process or conceptual sense, the line printer is highly limited as a means of artistic expression. A very few laboratories about this time had experimental access to digital plotters, devices which can move a pen over a piece of paper in a full plane under computer command. The digital plotter is the first piece of computer equipment or hardware suited to a wide range of graphics. In principle it can produce any graphic work which can be executed with uniform pen pressure. Solid areas result from closely spaced lines, or can be filled by hand. Many of these devices do produce stair-step lines rather than smooth curves, because of the mechanical design. A serious limitation with these plotters is the time required for any plot, a limit not so serious for a human artist who has continual control over his work, but one which is highly limiting in computer art because of the need to experiment with many drawings while developing programs or sets of computer instructions with reasonable graphic capabilities. Other real limits with these mechanical devices are the need to use special paper or pens, which often have inferior aesthetic qualities, and a tendency to tear the paper during execution of involved drawings.

The computer controlled television screen or cathode ray tube (CRT) was the next major advance in computer graphic technology. One form of this is closely analogous to the digital plotter: the electron beam of the CRT can be directed smoothly from any point on the two dimensional surface to any other, drawing a line as it goes. The speed and accuracy of this device erase most of the limitations of the digital plotter while keeping all of its advantages, except the possibility of substituting pens or paper. Permanent or "hard copy" output from the CRT is by video recorder, photography, or a sort of electronic Xerox process onto specially treated paper. It is such a computor controlled CRT which is used at Tulane by Robert Morriss and myself for production of computer graphics.

Before leaving this review of computer output devices, I should mention another popular form of CRT - the video or raster scan CRT. As the random vector CRT is analogous to pen or pencil drawing, the video CRT is analogous to painting. The electronic beam which can work in black and white or in color, regularly scans the entire screen in horizontal lines just as in commercial television. It displays at each position on the screen whatever color or brightness is stored in the computer memory corresponding to that location. The complexity of the picture to be drawn is limited principally by the amount of memory available. If, for example, each of the typical 512 scan lines is divided horizontally into 512 pieces, then 512 x 512, or about 250,000 memory cells are required for total control of the picture. Typically, the random vector CRT can reach many more points; for an 18" screen, an array of about 4000 by 3000 points is easily obtainable. Thus, the random vector CRT can draw lines more accurately, but has more difficulty with surfaces and cannot work in color.

Relatively cheap, low resolution video CRT's are available to the hobbyist today, for as little as $2,000 to $3,000, including the computer. In these displays, resolution or addressability is perhaps 40 x 30 to 200 x 150 points, meaning that in the former case the screen of an 18" CRT can be painted with rectangles of color or brightness which are about one-half inch in size. In the raster CRT, computer technology has come full circle to the electronic analog of the grid oriented line printer.

Here again, I speak in the computer graphic context, but analogous reasoning applies to computer art in general. The serious question has been raised whether any machine can "create art." This argument is ultimately similar to that which asks whether machines can "think." Original thought and aesthetic creativity are products of the subconscious, intuitive or holistic side of the human mind. Computer models of pseudorandom generation, followed by logical

analysis, can mimic this process, but in a linear rather than holistic way. Analog computation can respohd holistically, but in a limited form, to its environment. Even if computers are someday produced which emulate intuitive thought, aesthetic generation would involve knowledge of the capabilities of the human mind and its responses to aesthetic stimuli. This knowledge is certainly incomplete today. It is a proper subject for experimentation, however, and several computer artists are doing just that.

Thus, computer art today depends more or less on one or more human artists for its creation. I think it is fruitful to separate computer art into three classes: (l) art in which the computer is used as an immediate tool or transcription medium; (2) art which is produced by a collaboration between a human artist and a preprogrammed computer; and (3) art which involves a computer and which, once created, functions independently of any human artist. For convenience these classes can be called computer assisted art, collaborative computer art, and pure computer art.

In the first category I would place art produced when an artist draws on an electronic tablet that translates his hand movements into a television or digital plotter image. Here I would also place those television portraits produced on computer printouts for tourists (although creation of the program and equipment which produces them belongs in the third category). The quality of these works depends explicitly on the judgement of the artist using the equipment, and they make minimal use of the computer's cybernetic ability.

The second category, collaborative computer art, is currently and may always remain the largest. Here are works such as the images reproduced with this article, in which a human artist produces or selects specific art objects, kinetic or static, using a fixed computer program. The program's composer defines its range of capacities or aesthetic space, but extraction of specific objects from that space depends on further work by a human artist. In essence, the program author, who may or may not be an artist, has created raw material with a wide latitude for good or poor aesthetic use. The computer's participation, to separate collaborative art from computer assisted art, must include extensive use of its cybernetic ability in form generation, composition, or some other aspect of the aesthetic act.

Finally, as I see the scale of man - machine artistic relationship, "pure" computer art results when the human artist has implanted enough of his aesthetic judgement into the computer for it to function free of intervention. The work may consist of a combination of program plus computer plus display device which yields a static or dynamic display upon request from an observer. It may be simply a program which can function on any of a variety of machines and displays devices. It may even operate independently of any observer.

One of the striking things about computer art is the extent to which computer artists work in collaboration with one another as well as with the machine. This collaboration is produced by the expense and the complexity of the tools involved. Mastery of computer programming calls for a backgound in mathematics or logic; an acute aesthetic sense requires involvement in judging or creating art outside of the limited context of computer art; if the final work is objective rather than conceptual, certain ability and skill in electronics or video or photography or printmaking or whatever are needed. Today, at least, it is rare for a single individual to possess this range of talent and expertise. Thus, although this article expresses only my personal views and feelings toward computer art, my involvement in it and the work displayed here, are greatly indebted to a number of people. In addition to Robert Morriss, I must acknowledge Hal Carney, Chet Kasnowski, Renee Magnanti, Jim Steg, and a number of students in Professor Carney's drawing classes over the last two years. These people have provided technical expertise, enthusiasm doubt, ideas, and challenge. Tulane's Video Access Center and particularly Mike Saag have contributed toward ideas in kinetic art recorded through video.

A dozen or more programs have been written by now in our exploring of computer graphics. My direction at first was to use the computer as a steadier and more flexible hand than my own, using it to refine specific visual ideas, usually geometric. I expect to return to this kind of work, but after exploring other approaches which now seem better. The first serious attempt to use the computer for generation of nongeometric forms was the program GRAFIC, written in 1976. (Incidentally, all programs described are written in FORTRAN, a computer language available on almost every large computer.) By following arcs or chords of pseudorandomly generated tangential circles, GRAFIC composes free form lines in a wide variety of characters or styles. Eleven basic styles have been built into the program; others can be added randomly or deliberatley whenever the program is run. Lines can be thickened or repeated in one or two directions to give ribbons or L-beam shapes apparently flowing in three dimensional space. The program GROWTH evolved from GRAFIC as an attempt to give the artist more

control over form. The programming problems began to appear severe, so this idea has also been temporarily suspended short of completion. POLYPLOT, also from 1976, generates solid forms rather than lines. The forms are defined on two sides by second order polynomials and on two sides by parallel straight lines. The solids are blackening. The fair success of POLYPLOT led me to write RANSOL, which uses a vocabulary of more linear forms. It is limited to rectangles, parallelepipeds, triangles, and X-shaped triangle pairs. Shading is similar to POLYPLOT and if shading of a triangle is incomplete, it appears to be a trapezoid.

These programs were all composed with no thought to composition. They were simply attempts to define wide vocabularies or conceptual spaces onto which rules of balance and proportion could later be built. The single exception to this statement is POLYPLOT. As a result of my experience with another program, LYRIC, which produces kinetic rather than static images, and which was conceived as a visual analog of music or poetry, the program POLYPLOT incorporates the element of repetition with variation. Once a form is generated, it may be repeated horizontally or vertically, with changes of scale and with small perturbations on its shape. Another program under active development at this time is PATHS. PATHS is also kinetic and generates a multisided angular form that wanders at various speeds around the CRT screen.

Four static works are reproduced here; the fifth figure shows six consecutive steps in the evolution of a PATHS image. I view all of the programs described as ultimately to become works of "pure" computer art, if their evolution proceeds satisfactorily. At the present stage, however, our *modus operandi* has been for Morriss and me to choose specific images from their repertoire and to present these as final works. The images chosen may have been produced independently by the program, or by a collaboration between it and us. One or both of us, nonetheless, must be held responsible for the aesthetic choice involved. The images shown here are some to which I respond. I should also point out that the space in which these images exist is ambiguous just now. Except for POLYPLOT 2 (Division), final forms for presentation have not been fixed. They exist as 35 mm slides; Kodalith transparencies have an appeal. Transfer to low relief metal or glass sculpture is possible, or to classical forms of photography or printmaking.

POLYPLOT 3 (Cry, for Clarence) is dedicated (without his knowledge but I hope acceptably) to Clarence John Laughlin, whose work I immensely respect and who finds human imagery everywhere. Beyond the obvious face I like a number of graphic details in this image, such as the calligraphic marks near the top and the vertical divisions on the left. The bowl-like form at the bottom is architectural in scale, and the small white form before the face is a horse image reminiscent of Marini. This unplanned generation of significant image and form is a feature I particularly like in these programs. In this sense the computer is like a magic spaceship which can bring one to a desert or a forest, a seacoast or a cracked pavement--anywhere that image is found. Primarily because of the nature of the programs, the current images are highly abstract.

I react to the transparent GRAFIC 5 (Homage to Henri) in a similar fashion. The busty female dominating this image reminds me of the Parisian fashions depicted by Lautrec. With little effort, one can find on the left a parrot's head and beak, and just to the right of that, a dancing figure. The figure is so energetic and graceful that one overlooks the missing head. Searching further, one sees a heart form and a crescent moon, a symbol of Venus, superimposed on the woman. I do not mean to say that these specific images make the work worthwhile, or that one should play a game of finding recognizable forms within it. I mean only to show that, like good artistic work in any medium, it is potentially rich in imagery at various levels of consciousness. Mostly when I see this image, I feel the woman behind a blowing breeze of horizontals.

The ambiguous depth of field in both the above works, as well as the ambiguous scale in the former--somewhere between lifesize and hundreds of meters--is another feature I like about much of this computer imagery. (Parenthetically, I feel free to describe these works in a very detached way, since Morriss and I did not in a very real sense "create" them. They are products of the computer acting almost on its own, which I happen to like.)

POLYPLOT 2 (Division) is probably my favorite work to date. It satisfies a feel for abstraction and sculptural imagery and at the same time forcefully presents the philosophical concept of division and identity. It stands for a prototype of all divisions: black and white, heavy and light, large and small, self and nonself.

Snowflower is a name attached to GROWTH 1 with some difficulty. The other associations have arisen naturally. This image I chose because of a gentle, lyric feel to it. Again, the space is ambiguous, but nearly flat. This is not a real flower, but a living form against the translucence of a snowbank.

The final figure is from a new and developing

program, PATHS. Art created with a computer, especially that displayed on a CRT, is intrinsically kinetic. Each of the four images just described was constructed in about a minute or less. The program POLYPLOT, especially, produces work one might describe as conceptual or ephemeral: forms are thrown on the screen almost instantly, and images may begin to evolve among the solid shapes only to be destroyed by submersion. This kinetic existence can only be seen in the "pure" computer art work--the combination of computer, CRT, and program. Given the expense of a computing system, another medium of presentation is necessary to retain some of this vitality. Movie film or video are two possibilities. To convey a sense of this kinetic, six consecutive movements during an execution of the program PATHS are shown as the first figure. For me, at its best this program conveys an illusion of spacially evolving cubist forms. It points the way toward "scored" or choreographed kinetic visual art, possibly the most fertile domain of this new art form.

I hope this survey will help to allay some fears about the "mechanical" nature and lack of profundity in computer art. Whatever the value of our own work, it should be clear that a very rich domain lies here, and mining it is worthwhile.

Artist and Computer, Ruth Leavitt, Ed.; New York, Harmony Books, 1976.

Computer Graphics Computer Art, Herbert W. Franke; New York, Phaidon, 1971.

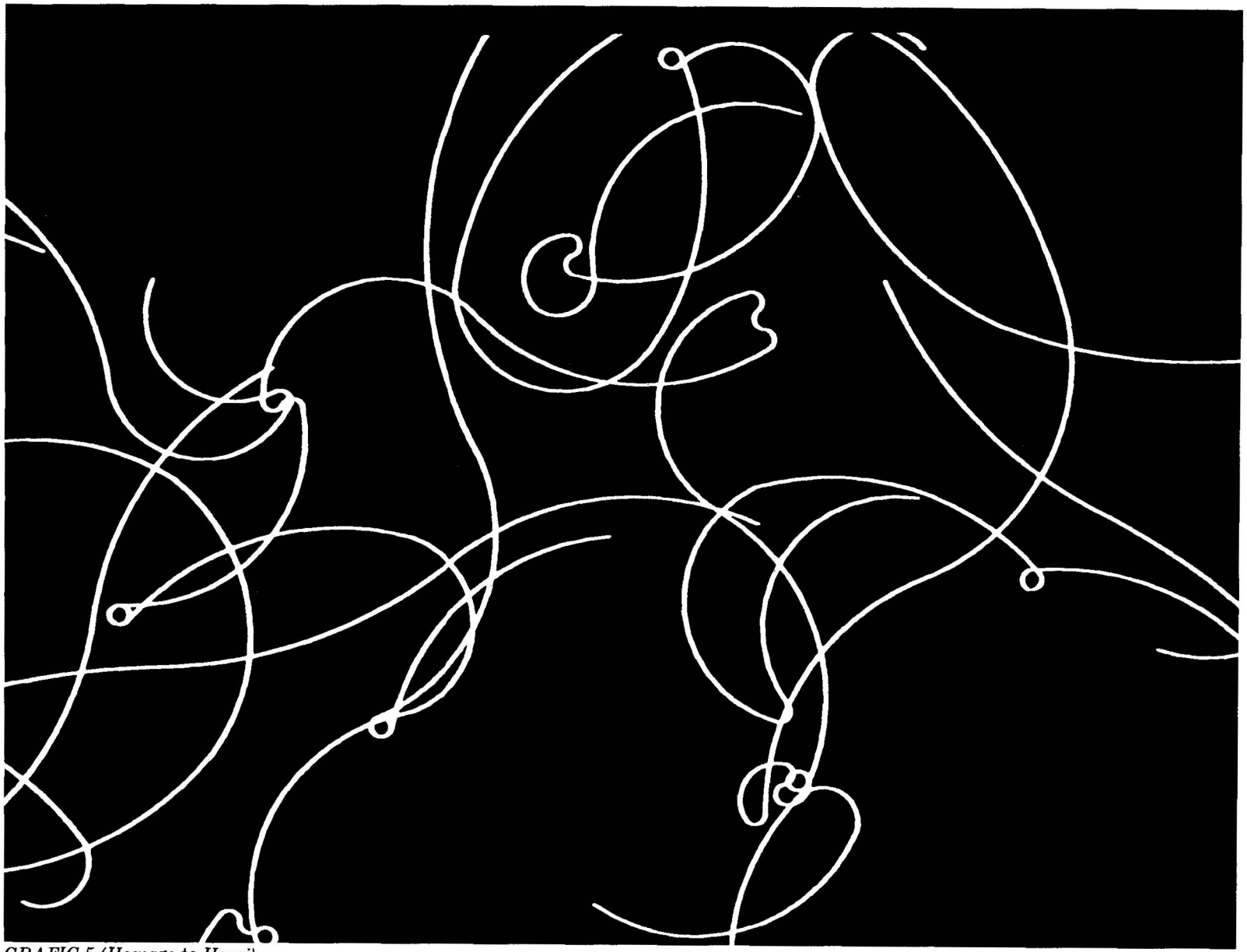
"Computer Graphics and Art," (quarterly), Grace C. Hertlein, Ed.; Newtonville, Mass., Berkely Enterprises, Inc.

"Computers and People," formerly "Computers and Automation," (monthly), Edmund C. Berkeley, Ed.; Newtonville, Mass., Berkeley Enterprises, Inc. August issues are devoted to computer art.

Cybernetic Serendipity, Jasia Reichardt, Ed.; New York, Praeger, 1969.

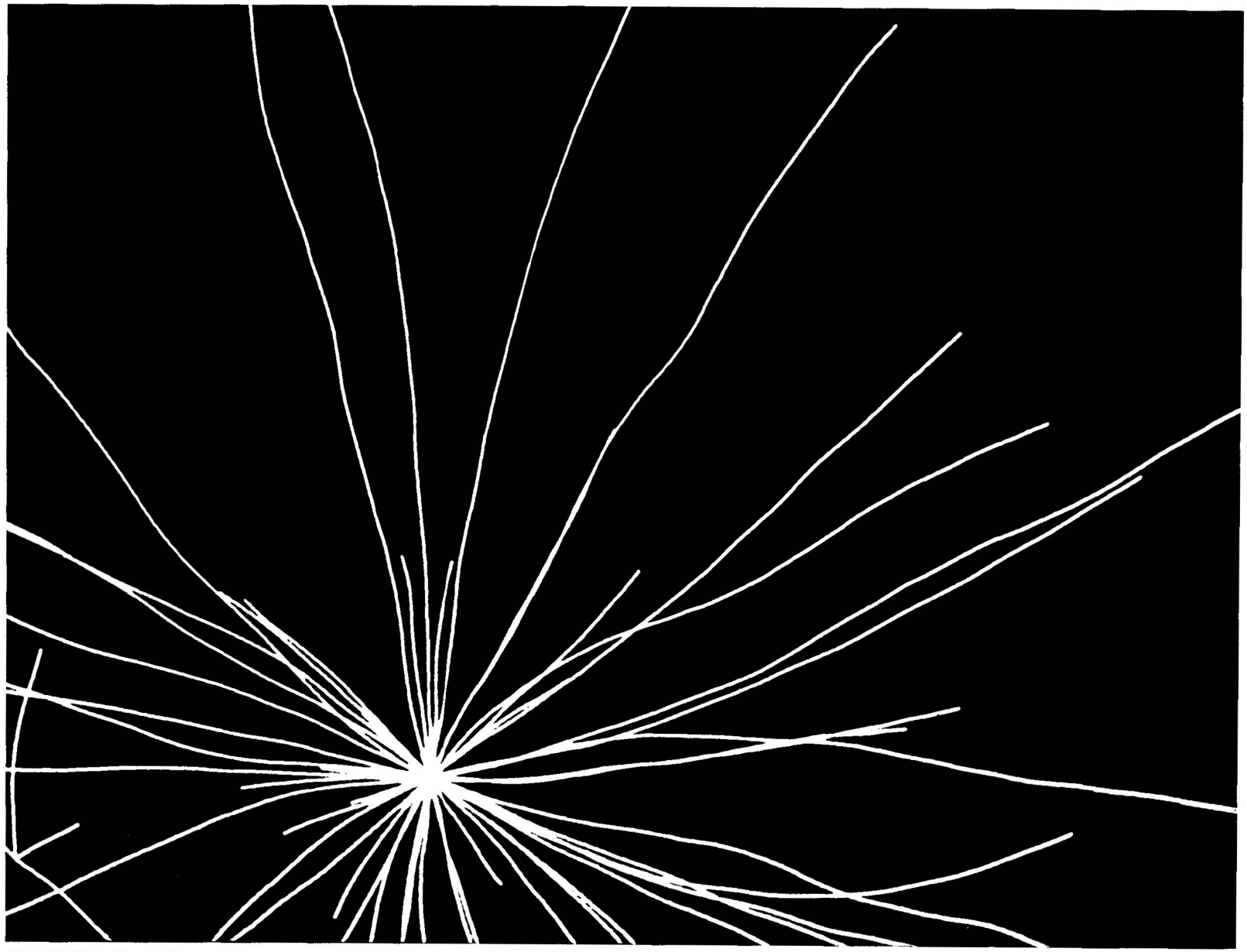
Science and Technology in Art Today, Jonathan Benthall; New York, Praeger, 1972.

POLYPLOT 3 (Cry, for Clarence).

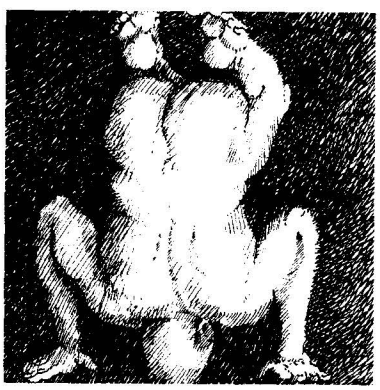


GRAFIC 5 (Homage to Henri).

POLYPLOT 2 (Division).



GROWTH 1 (Snowflower).



Chris Peragine, a 1978 graduate of the Tulane University School of Architecture, holds a joint degree in English literature. He criticises current trends in what has come to be called the "Post Modern Movement," suggesting that a too pedestrian pluralism may rob it of deeper human significance. A rich "mythological" base, Mr. Peragine suggests, is an essential part of any creative, cultural endeavor, and is especially needed in this time of uncertainty in architectural thought.

ONCE UPON A TIME THEY ALL LIVED HAPPILY EVER AFTER or WHAT HAPPENS IF THE BIRDS EAT ALL OUR TRAILING BREAD CRUMBS AND WE'RE LEFT FACE TO FACE WITH THE GINGERBREAD HOUSE?: SOME THOUGHTS ON "POST MODERN" ARCHITECTURE

"Bourgeois society substituted the fairy-tale for myth and religion." – Sedlmayr

Ours has been called an age of irony, but it might better be dubbed an age of cynicism. Irony is ennobling; it implies an acceptance of existential inconsistencies, a sophisticated awareness of both what is and what might be, which in contemporary society is too often obscured by our immersion in the particular and the immediate.

According to Greek legend, Theseus, son of Aegus the king of Athens, braved the dangers of the Labyrinth at Crete, slew the hideous Minotaur, and then found his way through the maze with the help of Ariadne's thread. However, excited by his victory and impatient to return home, Theseus unwittingly disobeyed his father in neglecting to lower and replace the ship's black sail of death. Weeks later, Aegus spied the returning vessel's black sail on the horizon and is said to have died of grief. And more, though Ariadne's love and resourcefulness had encouraged Theseus' success, he soon forsook her. In a continuing series of myths, Theseus organises a constitutional government, fights the Amazons, and becomes one of the Argonauts.

These descriptions of the Attic landscape, the overseas journeys across the unknown world, the actions and foibles of supernatural deities, and the heroic confrontation of adversity all establish the complex and wonderous workings of an elaborate cosmology. Greek legends invariably present an intricate weave of human experience which seeks to describe the world as it is and to explain why things happen as they do; all the while providing for attendant philosophical speculation. Pervasive throughout is the value attributed a noble countenance, the appreciation accorded noble action and the demands of responsibility for consequences. Notable too is the dramatised position of man as separate from, but paradoxically a part of, both supernatural and natural forces. Greek mythology presents a way of seeing the world, a coherent abstraction of relevant issues and a unifying ideology.

Late nineteenth century industrialism marks a fundamental perturbation of the humanist tradition. Baroque life was a recognisable heir of the Greek epistemology. Its reverence for absolute truths (far too many) and for hierarcical order succumbed in the face of radical changes wrought by the new science and industrial technology. It was revolution the likes of which had not been seen "since Constantine set up the cross in 310." Bourgeois society, about which this essay necessarily revolves, is the product of a materialistic, capitalistic system which transfigured political and social order. Arising as it did in the midst of a cultural and moral vacuum, it sought out an "existential foothold."[1] Continuity had given way to fragmentation, and men realised they could no longer pretend to orchestrate a reality which no longer slowly evolved but which was ever likely to be suddenly changed. In an age of uncertainties, bourgeois society sought out permanence and a comprehensible world order, however inappropriate or illusory. At the turn of the century much of the world lapsed into a somnambulistic romantic sentimentality; only to be revived (and then only briefly) by the Titan efforts of men such as the early Modern architects. But meanwhile, traditional genres of expression had become increasingly irrelevant. It would seem reasonable to consider one genre, the fairy tale, as a significant, uninhibited (and unconscious) exposition of sociological concerns.

Two thousand years after we no longer have Theseus, torch in hand, unwinding thread as he descends into the Labyrinth, we have, rather, Hansel and Gretel leaving crumbs behind as they wander through the evil forest. Their innocence and immaturity marks a significant shift in protagonist stature. These modern "heroes" are delivered by their own means from the dangers of an alien (if caricaturised) natural world. Endeavor, which in the modern context was increasingly directionless, is embraced in most fairy tales as an end in itself. Action, however circumstantial or unconscionable, is divorced of consequence. Universal concerns are abjured for a simplistic and introspective setting of pedestrian problems. Past, present and future are conveniently categorised in a gratifying exorcism of human fears and dilemnas – all of which seek resolution in terminal happiness. Fairy tales, however wondrous, are escapist fantasies which entertain but fail to acknowledge (and suggest ways of coping with) a contemporary context.

Just as fairy tales obscured the essentials of the mythico-religious tradition, so too did their architecture, a picturesque eclecticism, separate image from meaning.

The early Modern architects rejected decadence, reacted against convention and constraint, engendering a renewed rigour and an unencumbered vision which suggested a new way of living. But World War II largely shattered the promise of the First Machine Age. Callousness and the numbing effects of fifties affluence led to an inevitable non-appreciation of Modern architecture's ideology. Its unilateral acceptance and integration into capitalist society fostered a simplistic purity and a narcissistic preening and gross mis-interpretation.

"Post Modern" architecture seeks to address areas of concern seemingly abdicated by Modern architecture. It encourages communication with a less abstract and more vital language with its "rehabilitation of architectural history."[2] A richness of material and texture is emphasised over purity of form. It reacts against "grandiose pretensions," embracing "messy vitality over obvious unity," all in an effort to depict "the richness and ambiguity" of modern experience.[3]

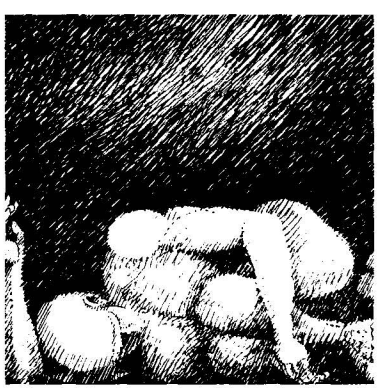
Modern architecture was heroic in its concern for the "poetics of modern experience." "Post Modernism," in its rejection of abstract semiology, seems dangerously encumbered by particulars. Vernacular expression tends to circumvent rigorous intellectual application in favour of emotional and sensual gratification. While easily identifiable, the imagery of "Post Modern" expression is often incapable of evoling adequate response.

In its inclusiveness "Post Modernism" is seduced by the trivial. A demeaning aesthetic hedonism threatens contemporary society just as it threatened the mores of the early nineteen hundreds. We should seek today an enabling mythology – one whose inclusive particularisations of existence suggest, rather than deny, larger, more abstract and universal fundamentals.

1 Christian Norberg-Schulz, *Existence, Space and Architecture* (New York: Praeger, 1971).

2 Charles Jencks, *The Language of Post-Modern Architecture* (New York: Rizzoli International Publications, Inc., 1977).

3 Robert Venturi, *Complexity and Contradiction in Architecture* (New York: Museum of Modern Art, 1966).



ARATA ISOZAKI

Chris Fawcett is a graduate student and lecturer at the Architectural Association School in London. His articles have appeared in the "Architectural Association Quarterly," "Architectural Design," and several Japanese publications. One of Mr. Fawcett's chief areas of interest lies in contemporary Japanese architecture, especially that of Arata Isozaki. He here discusses experientially the technological aesthetic of Isozaki's recent work and its meaning within a basically existential framework.

There is an experiment in which each individual in a group of people is asked to express his perception of some simple physical difference, for instance, whether one line is longer than another. All but one of the individuals in the group are instructed to make a false response. They are to state firmly that in their perception a is longer than b, when in fact, the reverse is the case. In many cases, the victim of the experiment is rapidly persuaded to disbelieve the messages of his senses by the symbolic messages from his peers.

1. If architecture can be simulated, is there any point in having it built?

I am greeted by a thin but attractive girl who speaks in riddles that suggest the possibility of sensual adventures. She guides me through a vague and anonymous town to a site just outside, where a strange group of buildings is under contruction. It is to be a new house for Isozaki's parents. For some reason he himself was too busy to work on it and so had subcontracted it to two different offices - the glass domes on the right by one team, and the giant juke-box installed in an equally large clam shell in the garden provided by the other team. The girl stood behind me, wrapped her arms around my front, and like that we walked into one of the domes; as in Dr. Who's Tardis, the inside was much bigger than the outside. Slowly, effortlessly, we wandered through, when the girl started to caress me. I woke up. After such a dream, I had no choice but write about Isozaki. **Film project; someone cutting wood, planing and jointing it with painstaking care. Meticulously he fits it together to make his own cage. Soundtrack; a woman giving birth.**

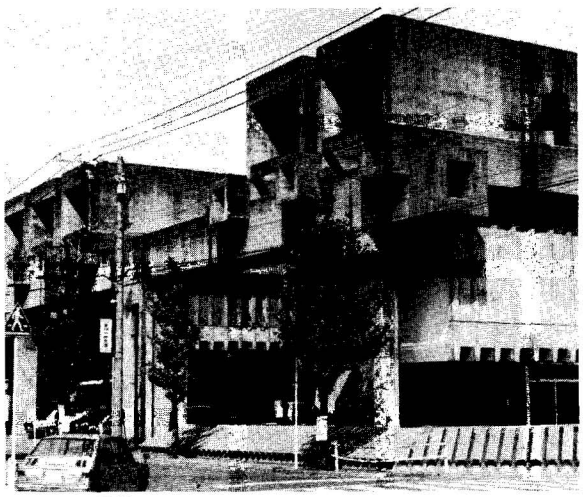
2. The problems of making love and watching it at the same time.

Isozaki's interest in an exaggerated technology some fifteen years ago, has now developed into a kind of technology as consciousness. At first, expression was his preoccupation - now it is something akin to exactness; 'how sharp can architecture be?' Initially he exploited form as Grotowski uses the bodies of his actors, but after the anxiety of Metabolism he now seeks stability and security.

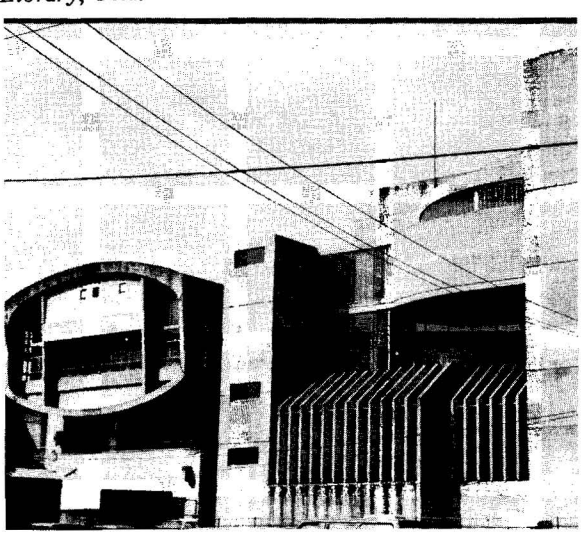
The library at Oita (1962-64), with its bright green floors and walls and intricate space is a labyrinth of this way and that - a hall of concrete mirrors. The library and medical centre (1959-60, extended 1969-71), are blunt reminders of what he is up to. Facing each other across an ill kept asphalt road, they are longing to be joined, yet it is impossible. Although only ten metres separate them, they actually represent polarities; the library an exercise in elegant post-Tange structuralism. Heroic space is the subject, and is achieved by a rough identity of structure and form. The medical centre, on the other hand, is predicated on formalist grounds - the supposition being that any means are justified in the creation of aesthetic ends. They face each other in mute dialogue. The space between them is the gradient on which all the other architectural options are to be found. The dialogue is yet to be written, but one can sense a start there. Cars come and go activating the space, reminding us of something. Stairs attempt to transform floor into wall in the shimmering white plaster, concrete and glass world of the medical centre; walking around inside is like walking inside Isozaki's brain. Girls on the ground floor work on office documents with calligraphy brush and ink. Is the status of ordinary tasks raised or threatened by such a design?

The girls' school at Oita, (1963-64), is smaller. On entering the grounds the elevation could be taken for a teacher standing on the left with a pupil sitting at her desk on the right; despite its anti-institutional forms, classrooms, for example, are rigidly fixed. I approached it in an early morning grey light. Not having slept the night before, I walked with a dull mixture of sensations, as girls, late, ran. The raw concrete, as it rises from the parched earth play area, is like bone or long weathered ivory - with a school like that, who needs a playground? The doctor's house, 1964, also in Oita, hemmed in by office and bank buildings, is an example of residential space salvaged from the city, defended by heavy concrete and a fierce geometry. It is nearby the ramparts of the old castle, whose system of defence it acknowledges if not mimics. Close at hand is the Fukuoka Mutual Bank, (1966-67), which completes his personal landmark system in the city of Oita. Concrete revisions of Stirling at Leicester. Purple acrylic table tops, orange metal panels, yellow and lilac ash trays, pink ventilation snorkels; we might call it a model of capital in action, except that the traditional image of stability is upturned, so that at any minute it might come crashing to the ground.

The headquarters of the same bank, at Hakata, (1968-71), is a multilevel organisation of security



Library, Oita.

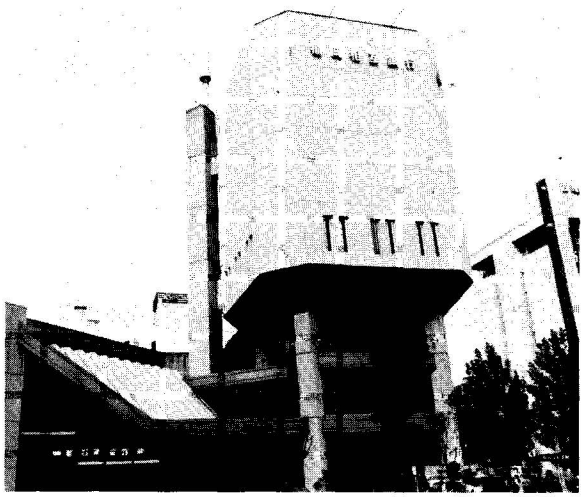


Medical Center, Oita.

Girls' School, Oita.

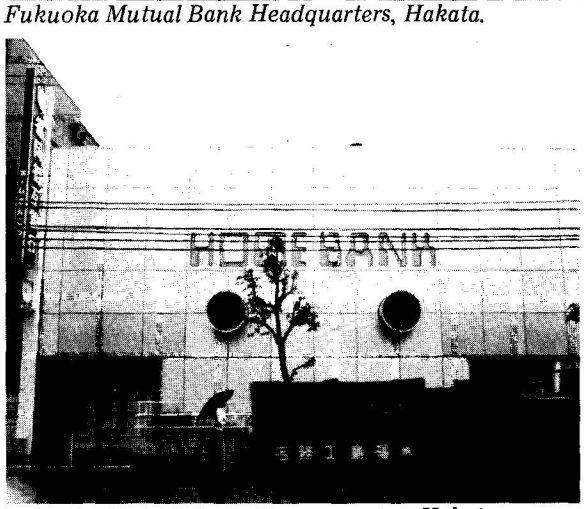
precautions sheathed in red stone, making a considerable cliff just in front of the station. Isozaki takes one of the standard office types and props up its ailing form with crutches of corten steel and marble: the image is of a crippled financier chewing on a fat cigar. On being thrown out by a security guard, one begins to realize what it is all about. In the same city, the Ropponmatsu branch of the bank is located. (1971-72). When I showed people in the area a photo of it and asked where I might find it, they did not know. It stands fronting a busy main street in downtown Hakata; on arriving, it is hard to detect, until suddenly one is past it. It is in no way hidden, in fact everything indicates that the owners wanted it to be prominent, and yet it does not seem to be there. I do not mean by that 'transparent' nor 'crystalline', just absent. I began to realize why the local people could not recognize the photo, for they had rarely, if ever, noticed the original. The design might have been arrived at in this way: Isozaki could have asked the clients to draw for him what they considered to be futuristic bank designs, and then done an identikit job of taking those elements most like the future from the individual schemes and bringing them together in a single whole. The local people could not recognize its photo because the building has a different future from their own; the bank must wait for their future to catch up with it. But should the local people insist on never recognizing it, for they have that right, then the bank will never properly exist at all, and will remain absent, an image of a by-passed future.

The municipal museum at Kitakyushu, (1972-74), marks the new direction - he renounces his earlier concern with built form (whatever it looks like), and turns to an exploration of pure matter (whatever it may be). An impregnable but disrupted symmetry obtains, with twin canons aimed at the city; one enters according to a Baroque rite of passage. The space is Roman or Greek, chrome plated. The columns are only reflection, as are the walls and floors... one hopes to be able to walk through them, but somehow one is restrained. I asked some people which was north, but they had no clear idea. Walking from the vast white marble and aluminum lobby into the locker room is a kinaesthetic sensation; from white, through a faintly antique door into a black chamber where one must turn right before the fluorescent green storage lockers hit one's eyes. Every movement is governed by such a high rate of coincidence between self and building. A solitary girl, in white, sits at a white desk in the middle of the white hall, and whispers. The space is huge, a space in which all one can do is wait. All normal actions



Fukuoka Mutual Bank, Oita.

Fukuoka Mutual Bank Headquarters, Hakata.



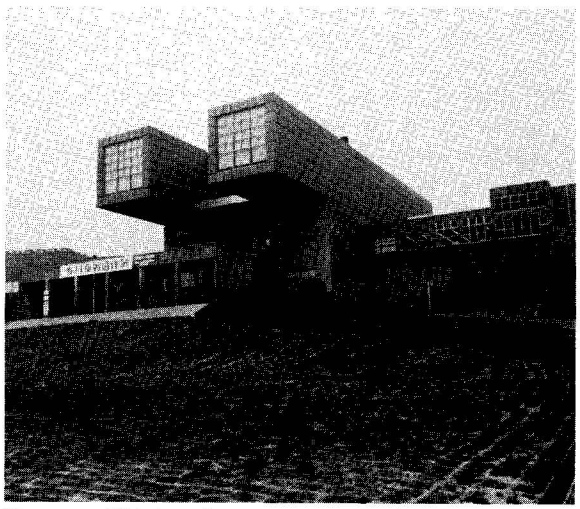
Fukuoka Mutual Bank, Ropponmatsu, Hakata.

suspended, one stands there, frozen - as though all doing had atrophied and all one was capable of was being. There is no guarantee that any act one undertakes will be efficacious or that it will turn out the way one wants it.

Newton discovered the laws of gravity by taking into account three groups of phenomena entirely unrelated to the ordinary observer - freely falling objects, the movement of the planets and the alternation of the tides. Similarly, Isozaki is trying to reach a conceptual unity of seemingly unrelated elements drawn from the whole of architecture. Thus he continues always on the look-out for more general and impersonal explanations...what he is looking for is an alchemy to transform himself into architecture. From a multiplicity of explanations, he is now trying to get it down to one: the specifics of the site/economics praxis are no longer his concern - he instead stands on the side of the disintegration of objective reality and its substitution with an ironic one. **Film project: scene one...film of public apartments is projected onto a screen in the shape of a traditional Japanese house. The screen catches alight...scene two...slogans such as 'form follows function' are projected onto a wall in the course of demolition. Soundtrack; silence.**

3. 'Maniera' (method); the architect's appeal to the obscurity of his problems provides no answers.

Maniera came about because of the impossibility of defining true needs and finding the right form for them; needs are deeply imbedded in man while architecture must be very much external to him, so the connection between them must be tenuous. Functionalism cannot resolve this, so Isozaki invented maniera in the hope of doing something about it. The seven basic approaches it includes can be summarised thus: fuseki (preliminary moves in a game of go), setsudan (cutting off and trimming, amputation), shiaei (projection - as a film), kompo (wrapping), tensha (transcription), oto (question and answer, call and response), and zofuku (amplification). Complex problems carry him into their own no man's land and dictate visual solutions that apparently go far beyond the architect's will. He becomes an instrument of the ideas that interest him so as to let the ideas find expression while not worrying too much about any unnecessary expressivity for himself. Still, having denounced the cult of personality he has nonetheless slipped into the same role, even producing his own self portrait in the cranked wing at Gumma; his designs end up as plan form variations of his consciousness.



Museum, Kitykyushu.

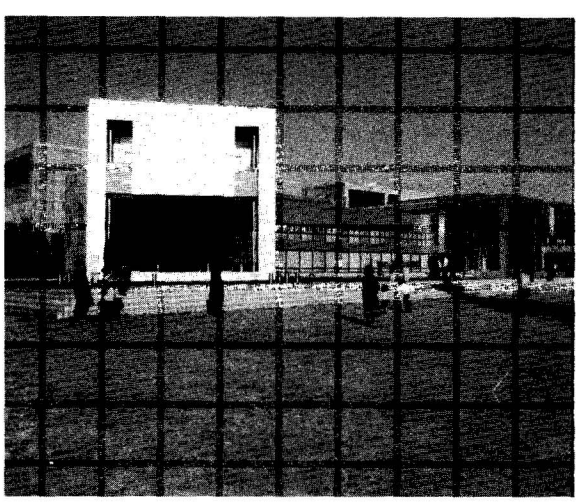
Museum, Kitakyushu.

In a way he is the victim of his own inspiration - he overshoots, exaggerates, gets lost in a fog of promises that cannot possibly be realized, neither by maniera not by any solitary architect. Thus he is forced to make an architecture of tautology - his system of classification already implies the truth of what he claims to be demonstrating - in Japan this mannerism is inevitable and leads eventually to a kind of architectural necrophilia. Faced with this ultimate horizon to his actions one cannot be sure whether Isozaki truly wishes to build or just wants to perform a vague architectural ceremony. The Gahuku-Gama of New Guinea, have learnt football but will play, several days running, as many matches are needed for both sides to reach the same score. Its almost as though this is what maniera means. **Film project; models of famous buildings of the twentieth century are opened up to reveal rubbish, rotting meat, old leaves tied into muslin bags, etc. Soundtrack: a group of Japanese children counting from one to a thousand in English.**

4. Gumma Municipal Museum, 1971-74, a space 'devoid of ideological trauma'?

If the architect had an infinity of time and money at his disposal there are chances that an ideal architecture could develop. But this is not the case. Action must be fast, something must be done that approximates to what is needed, and yet to build is to disguise need. The very thing we want is left behind in the rush of going towards it, like an elementary experiment in relativity. The result is we end up where we began. The harder the architect tries, the more absurd the results. At Gumma, where Isozaki's new direction finds full expression, we can personally witness this. One approaches its sleek, glistening aluminum form that could be the glass slipper left by Cinderella at the ball, a grounded U.F.O. or a hologram version of the Crystal Palace. Its platonic, nongravitational skin geometry shades off into the surroundings as though completely one with them. A compromise between no-form and the world imposing its forms is the general *modus operandi* of the architect, but at Gumma it's exclusively one or the other, but one cannot be sure which. Isozaki generalizes, divesting the problem of details irrelevant to the solution, and comes up with what is like a photograph of architecture: the camera was pointed at a building but in fact what was recorded was the type of lens, shutter speed and aperture setting. The cranking of the sculpture court off the rectangular grid onto the diagonal is the only evidence of individuality - the rest could be the automatic consequence of typical architectural procedures. The table sculpture under the cranked wing brings to mind an altar, an equivalent of the gigantic rose window, that terminates the meandering vault of the library at Kitakyushu (1974-75).

At Gumma we find the consummation of form; a form deprived of all content. There is something intangible as a result, something not there like the ice palaces built annually for the Czar in St. Petersburg. (Maybe he is under the illusion that he has become Pythagoras.) All the signs of architecture are absent; there is no meaningful surface to start from. The usual definition of a building as a distribution of signs in one location is superceded by a distribution of blank pages. Gumma adds up to a considerable syntactical arrangement that says nothing. It's the Bauhaus, gutted and refurbished for no particular purpose; the precarious achievement of modern architecture is enshrined there. It's like the Villa Stein, chrome plated, set down in an alien environment and looking for a purpose. At first, Isozaki, like most of us, was fascinated by this recent history, but now he is terrified - not only because he acknowledges how wrong it has been, but also because he can do nothing about it. The result is an architecture degree zero - his previous hopes of changing the state of things by architecture alone have petrified - Gumma as mausoleum.



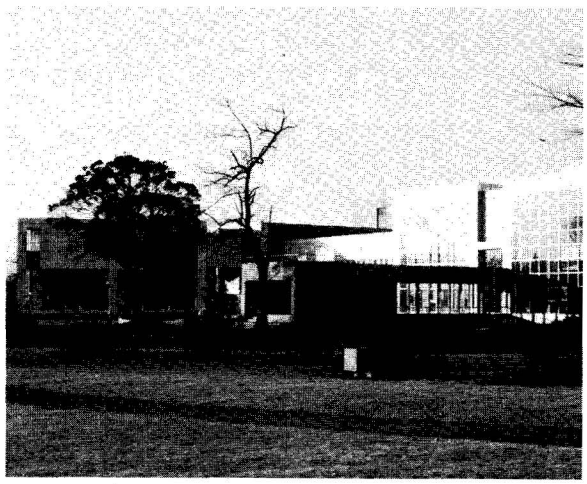
Museum, Gumma.

On entering the building one finds oneself in a theatre where one cannot tell the difference between the actors and the audience. In the great empty caverns of the interior, all one can hear is the ricocheting of confusion from one person to the next. There man feels guilty - he cannot feel that he is right and good as long as he is exposed to contradictions,

which place him in conflict no matter which solution he adopts. He might fabricate a conclusion which explains his failure and gives it the appearance of success, but it's of no use in the long term. Standing in the centre of Gumma is to see these riddles, made palpable, as though emanating from the grid structure itself. One enters a limitless site, a place without bounds, overlaid by a 1.2m grid. In the background is the image of mass production. Using the module consistently on all the surfaces means that they are no longer wall, floor or ceiling but something else, like gravity set free in a series of geometric striations. No reverberations take place there. One is frozen and they try to convince you it is what you wanted, that oneself is partly to blame. One has entered a conundrum - all one can do is trace over and over again the same arguments, but logically there is no way out. In this case architecture has become myth, for it offers no real explanations of itself, and it's up to us to find out, but there is not much to go on, for language and all other forms of communication have been left far behind and one must gesticulate as best one can. One must comply with these conditions, for they are the essense of what Isozaki is up to.

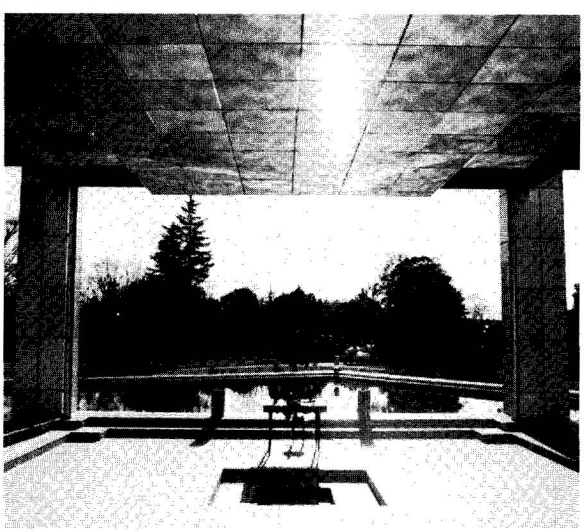
(As one walks through, the grid applies an acupuncture with needles of ice.) The individual, plunged into the mass experiences of modern society has become convinced he is only a cipher - meaning is fought over. The vast, endless spaces of Isozaki recreate this in a frozen tableau form - we can walk through Gumma and see a Chamber of Horrors wrought from marble, we can pass cubicles with women in white screaming in dead silence, we can view paintings of ourselves carried out without our knowledge. He sets up a situation by means of planning, choice of materials and structure - and lets it all run by itself. People come in and the scene builds up, paths cross, incidents occur; their interaction takes over where Isozaki left off. Man is irrational and his needs develop in unforeseeable fashion, like the day to day fluctuations of his bodily temperature, and the grid at Gumma is what he has provided to read that temperature.

Is it true that to point at nothing is not to point? At Gumma we can find the modern emptiness - nothing there can be shared, there is no one to talk with for they are all absorbed into the structure of the building; what remains are glittering reflections of clouds, trees and grass, but when we look to see the real things for some reason they are not there. In the transparent volume our gestures are isolated one from the other; we become part of an abstract hierarchy that starts from nothing and ends up nowhere. Time stands still. (Should you want to spit it would only



Museum, Gumma.

Museum, Gumma.



Museum, Gumma.

strike your face.) Inertia dominates...one's weight increases, it becomes more and more difficult to do anything...a great force drags at one's body, and one knows that force is architecture. The floor melts underfoot; instability, transience...the building is an antibody charged with negative energy that leaves one exhausted. Man is now tied to a time-table, as though every action of his is supervised; he cannot act on the spur of the moment - he must watch carefully what goes on around him - Gumma is exactly that.

The most difficult thing to discuss is the space. The museum is made up from lines that meet at right angles, as in the perspectuve exercises of Uccello. The building starts out from an imaginary point to apportion space in all the possible chances of three dimensions: the axes are space armatures. He builds spaces for modern man to get lost in and find himself someone else. It is blank, dead, space, shot through with entropic energies. If one agrees that space can only be perceived when some limits are set to it, then in the case of Gumma there can be no space...there can be no contained for there is no container, like Plato's Receptable. The space is saturated with absence - all one can do is disappear. One feels as though one is hiding and thus is uneasy, waiting to be thrown out. It is an evacuated, rarefied space; one feels weightless and there seems to be no way of getting through - one meets the space head on. The smoke from a cigarette hangs motionless in a sharply defined spiral. There does not appear to be any specific cause for whatever takes place there. In that space, beloved words like 'responsibility' and 'sense of guilt' are sucked clean of their marrow and become as empty as words like 'progress' and 'friendship'. Isozaki, maker of voids, urged on by an 'amor vacui', creates a non-stop space bathed in equal light, without days, without nights, without months, without seasons. The confined space of Giotto or traditional Japanese mapping techniques; these he turns inside out in the establishing of his infinitely repeating and in the end gratuitous space. A paradox prevails... space too immense and too small; space in bondage, imprisoned by tight leather straps, and yet of manifold possibilities. Maniera has become the tactics of emptiness.

Through a process of neutralization, Isozaki creates a space in which man is a rubber ball bouncing endlessly off the walls, though it would be well suited for a Busby Berkley spectacular. It's as though he had confused this world with the next. He moves about amid a fragmentary system of methods and beliefs like a man dazed by his own brilliance. He wavers between the notion of imposed law and that of chance. Gumma is easy to understand and very hard way through. It is so designed as to survive until its full possibility could be understood - the impossibility of anything, and above all the impossibility of architecture. 'A thought has escaped me. I would write it down. I write instead that it has escaped me.' (Pascal) At Gumma, everything is ready. We are waiting. Something must happen.

At Gumma we reach the limits of comprehension, from where we can see things with a terrible clarity. At the limits we reach 'the architecture of architecture' and can look it straight in the eye. It makes a kind of sense, in a free floating way, where the real and the absurd diverge, never to meet again. The realism is contemporary and to the point, like the revolver of a guerilla. There is not understanding in the immediately literal sense of self-help participation and mass-housing, but an allegory in which superimposed layers of meaning interact in a different type of understanding, put together in the way things happen now. **Film project; a couple, with earphones on, make love. In the background is a model of a single house in a birdcage. Soundtrack: Vers une Architecture is read out through a walkie-talkie. Intercut an ordinary Japanese woman describing the house she would like. (subtitles in English.)**

5. The idea of the architect is form, or was, until recently.

He bonds symbol to sign to object so that all meaning gets locked in - or, otherwise, he exchanges symbols for signs, objects for symbols, in an alien syntax, the sum of whose signification is zero. As a result of the elimination of the contained, the form (container) can survive. Form devours meaning in an act of auto-cannibalism Usually object is advanced as the antonym of space, but for Isozaki, object is space, or more precisely, space is object. This leads to a kind of despotism of the object, for he creates an image of the world that has nothing in common with the world.

His buildings are the detailed history of an idea; a prolonged examination of neural processes which have little in common with the world such as we know it; the Palladian origin of the Fujimi Country Club (1974-75) facade and its questions mark plan form should serve to remind us of that. His architecture is imagined out into two and presented as two connected profiles - one mind, the other matter - like the split representation techniques of the primitive. Obviously, pure mentality becomes trivial in its grasp of fact, that is, a conceptual architecture would only be worthless if during the building of the

idea method did not relax sufficiently for function to enter. From expressive function he moves to literary function...now there is not room for the capricious, everything is subject to his will. All is risked for the sake of the idea. Usually ideas are emotionalized into beliefs and motives, but at Gumma, for example, he is presenting ideas, purely, directly, concretely. Form, there, is a vehicle for descriptive generalization. It exhibits a welter of characteristics - we cannot pin it down to one idea alone, it exemplifies a broad range of intentions. The use of one familiar word must limit the required generalization of a statement by importing the familiar connotation of that word; thus Isozaki totally excludes what we are accustomed to in the building of his cerebral machinery. If, at Gumma, we were to look for the blunt truth, in other words, a conformance of appearance to actuality, then we will not find it, only the perfume of hints and suggestions. But, in the final analysis, ideas without the support of material conditions make fools of themselves in reality. **Film project; (slow motion) black stockings taken off a face to reveal a black mask, which is taken off to reveal closed eyes. Cut to a naked girl, reclining, stroking a model of a single house. Soundtrack; Japanese speaking clock.**

6. With 2300 teams entering the Manilla competition, has the consciousness of the architects truly changed?

Isozaki is not weighed down or oppressed by architecture - he gladly deals with the architectural inheritance. Looking at his recent work, one's first reaction is that they are ponderous restatements of the obvious, but his success lies in giving modern man very simple explanations of the state of things. In our historical situation, both 'too late' and 'too early' he is a diaphragm that tremulates and in doing so amplifies what exactly is going on. His attitude reflects a dual crisis, personal and historical...he wants to extract architecture from history, scrub it clean and get an immaculate thing, free of time. Yet such a goal cannot be accomplished...some deep ingrained stains are indelible, so what he shows us at the end are the essential marks of history a building must bear. We might say his ultimate goal lay in adding omissions to the history of architecture. This increasing tendency to disregard temporal fact in favour of an apocalyptical prophecy, leads him to make the world as a kind of building, inhabited perhaps by Renaissance statues. We might compare him with Venturi, who accumulates quotations with the heroic air of someone who robs graves; Isozaki orders them as if he were hauling in the relics of a shipwreck. Venturi's work is a journey that might lead us nowhere; Isozaki's, a search for the ancestral home.

His is an architecture of rejection, but despite that it manages to encompass a lot. He discloses alternative paths for architecture, for better and for worse. He is well aware that the further the architect soars into fantasy and lives by his selections, the tighter does the cord of reality press up against his neck. If the everyday world had been invented to hide that reality, then Isozaki shows us it by pointing away from it, as it were. (He tracks down architecture through the lens of a telescopic rifle - whatever he sees is marked out as a target.) Anyway, we should not come to premature conclusions about his empty forms. We must wait. Isozaki, having withdrawn from history, must in the end be judged by it. He could have history at his feet like a footballer might dribble with a ball - but there is a big difference between dribbling for effect, to gain the attention of the crowd, and actually scoring a goal.

In the late twenties, the Russian theatre group Vartangov gave a performance in Paris in which intermissions were part of the play. Isozaki has reached the stage that were he to write a play it would be entirely intermission. He now floats like one of Warhol's tin foil balloons high above the Japanese social landscape. According to Poggioli, there are two phases in the formation of a self-consciously avant garde movement - activism and antagonism towards the public, tradition and above all towards the bourgeoisie. As the antagonistic impulse increases in strength the movement becomes transcendental and withdrawn, turns to nihilism and eventually arrives at agonism, a form of self-destruction. Isozaki is at the withdrawn, nihilistic level now, his 'counter-architecture' dissolving into an architecture of mixed-metaphor, and we patiently await the agonism. **Film project: someone erasing people from architect's renderings. Soundtrack: a Japanese baseball commentary.**

7. Are we talking of the deficiency of the architect or of architecture?

Quesalid, a Kwakiutl Indian, considered the shamans of his tribe frauds, and argued that shamanism itself was fake. To expose that profession as a quasi-science, he learnt all their techniques in order to prove how easy they were. Soon he had mastered all the tricks, but his fellow tribesmen took him for a real shaman, were highly pleased with his performances and promoted him to high office, and in the end he came to believe in his own deceptions.

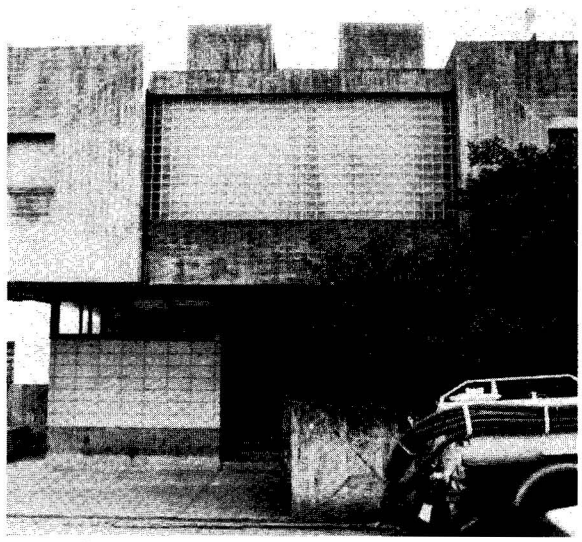
Of course, Quesalid and Isozaki have much in common; however I am not so much criticing Isozaki himself as a certain architectural current. Architecture is only intelligible as an aggregate of human relations and attitutes, but for Isozaki, as for many of his Japanese colleagues, architecture is only conceivable as an aggregate of formal relations. Consequently, Gumma for instance, ressembles a wild holiday set aside for ridiculing the regime yet paid for by the dictator, like the Friday of Sorrows in Guatemala. There are two kinds of motives behind an architect's work - one that supports, one that deflates the prevailing order. Isozaki reveals both, giving him a disconcerting lucidity and blindness. Architecture in Japan at the present time could be called sporadic occurences of mutual irrelevance, owing to the impasse there exists between the creative and the social. But they must be linked, as in the work of Lucien Kroll; otherwise architecture will remain an executive instrument of the state. (It happened that a fire broke out backstage in a theatre. The clown came out to inform the public. They thought it was a joke and applauded. He repeated his warning and drew yet more applause.)

Without simplification, no architecture could exist. Real needs must be replaced by other kinds of needs, more statistical in nature. Architecture is thus built up from a foundation of needs barely assessed. The grievance people feel against this architecture is the result of their seeing their pseudo needs crystalised in built form. Each person seeing a tower block of municipal housing realises that he himself is a little to blame, for never having allowed himself to live according to real needs. And it cannot happen overnight. We must condemn the tower block in the same way we must condemn our own lack of resolve to carry ourselves through to a real life. For the architect to assume effective responsibility and for society to concede to him the agreed representation of their interests there must be an effort of projection - the architect must reach forward to social issues, and the social groups must be honest about their real architectural needs. But the individual becomes less and less capable of acting by himself, particularly in Japan. He needs the collective signals which integrate his actions into the complete mechanism. Modern life induces us to wait until we are told to act. In Japan this has led to an emphasis in the uniqueness of the architect's sensitivity. Associative imagery has replaced logic and ideas are usually expressed with extreme indirectness. When social criticism is attempted it is abstract and intellectual - most of it takes the form of personal malaise, dissatisfaction with ugliness or standardisation, or existential despair. This form of protest is limited; still, the unparalleled horror of our time and the unparalleled fancies of Isozaki's imagination are more closely connected than one might immediately think. His buildings are like an elaborate cake at a wedding of capital and state power; only, it is fused, so that when the bride digs in the knife the whole party is blown to pieces. (Well, that is what I would like to believe.) At Gumma, the greatest multiplicity of events is possible - the schema he has provided is an outline only. Housing, schools, etc., all must supply much more than outline - substantial needs lead to substantial forms. But in an art museum, a monument to a type of uselessness, the programme of needs is much vaguer than anything with more pressing social overtones and so the solution can test out forms that do not have to be quickly sanctioned socially.

We might commend Isozaki's contribution to architecture in the same way one might commend Chubby Checker's invention of the Twist. He made dancing a solitary, non-touching affair - to dance was to be free, but to be alone as well. Isozaki creates a similar kind of architecture - standing aside from its partner, man, it shimmies, shakes and twists in rhythm to its own music. This architecture can eliminate anxieties stemming from irrational and disproportionate fears, for it gives man assurances equivalent to those formerly given him by religion. It offers him a simple and clear explanation of the world in which he lives - to be sure, a false explanation, far removed from reality, but one that is obvious and satisfying. It hands him a key with which he can open all doors; there is no more mystery, everything can be explained, thanks to it. It gives him special glasses through which he can look at present-day history and clearly understand what it means. It hands him with a guide line with which he can recover the general line running through all incoherent events.

Afterword. Because I am so susceptible to architecture, when confronted with the real buildings of Isozaki, or their photos, I am overwhelmed. But, later a struggle emerges between my emotional and my intellectual selves, and obstacles start to appear in between me and the designs; politics, sociology, etc., all disrupt the link between me and a building. For exmple, take a photo of Gumma. In itself it is delectable, irrefutable, complete and dazzling. But all I have to do is interpose anything between the photo and myself to 'cancel' it, block it from view. This demonstrates how fragile its relationship is with me and how tenuous its grip on the real world. In a chamber made from these contradictions, I wait. We wait. We must wait if we want to know if this adds up

to anything or not. We wait, and as sociology wrestles with politics in a sumo ring, we await judgment. We wait for our hesitating theory of architecture to catch up. We wait for any faintly perceptible indication as to what to do. We wait while people look for somewhere to live. We wait, we must, we have no choice.



Doctor's House, Oita.

Taki Koji. *Taki Koji Yonnin no Dezina to no Taiwa.* (Dialogue between four designers and Taki Koji). Tokyo: Shinkenchikusha, 1975.

Isozaki. *Kukan E.* (Towards space). Tokyo: Bijutsu Shuppansha, 1972.

Isozaki. "An Architect in Ambivalence." *A and U,* January, 1972.

Isozaki. "Shuho ni tsuite." (Concerning method). *Shinkenchiku,* April, 1972.

Isozaki. "Seijiteki Gengo to Maniera." (Political words and maniera). *S.D.*, June, 1972

Isozaki. "Shiro no Lyrizisumn." (The lyricism of whiteness). *A and U,* April 1976.

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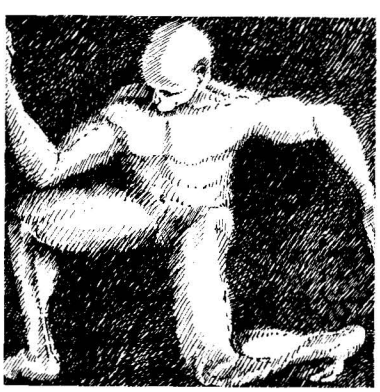


Francis L. Schmertz is a member of the English Department of John Burroughs School, St. Louis. A man sensitive to the natural environment, Mr. Schmertz has recently been developing a personal interest in landscaping.

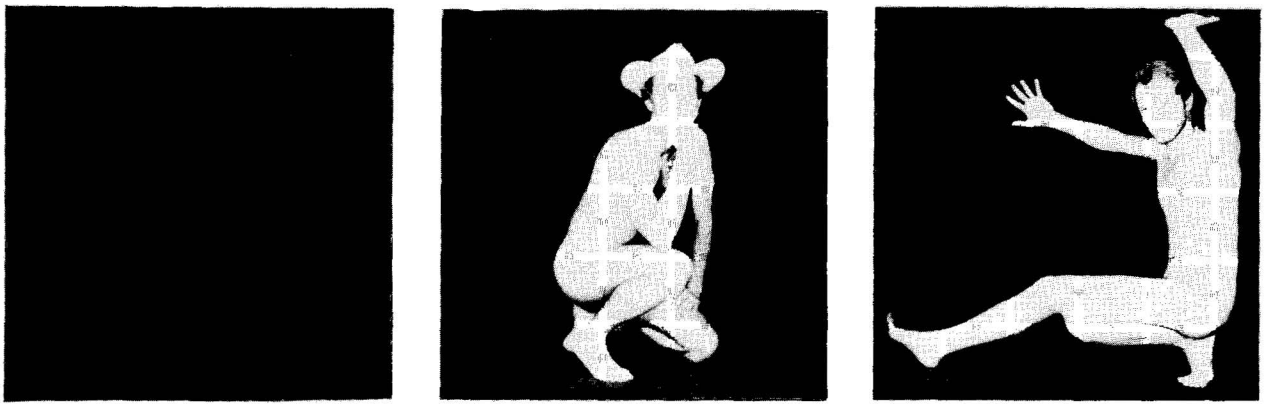
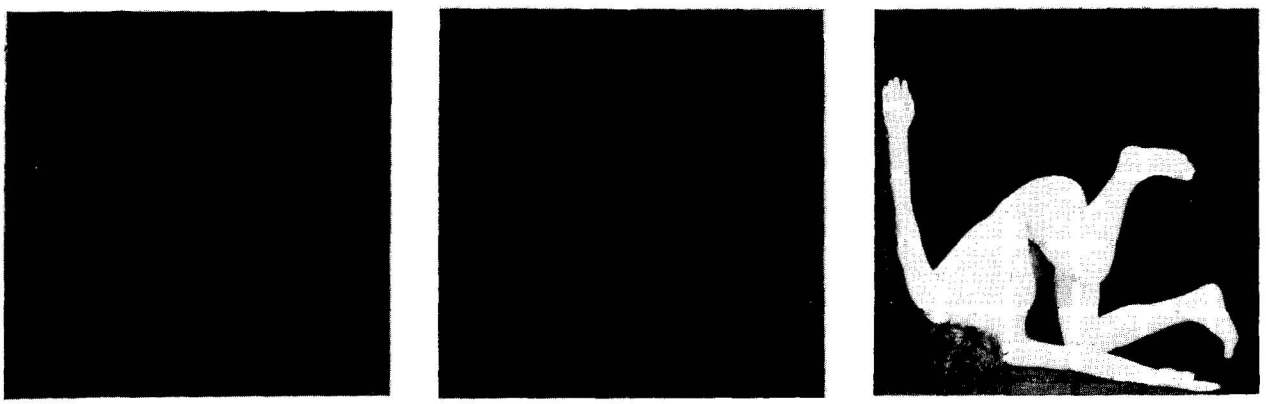
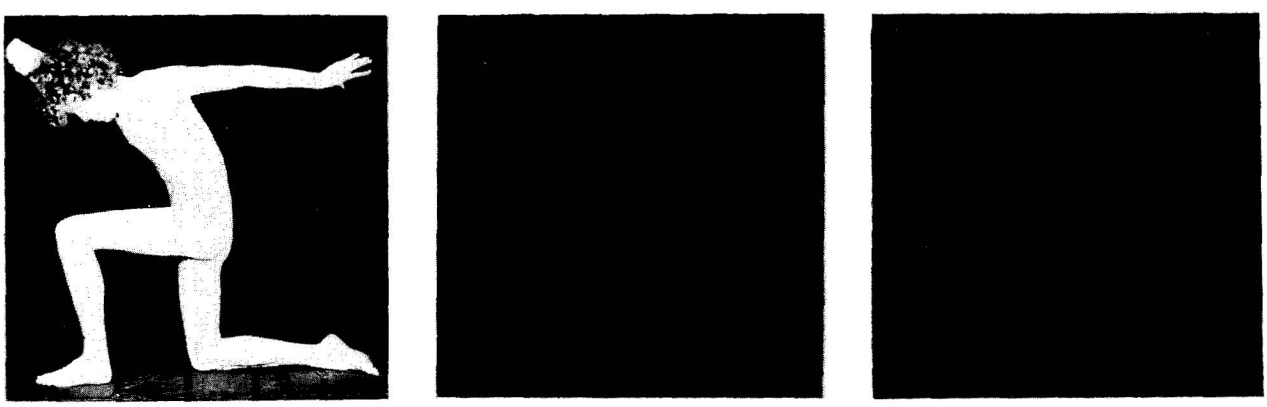
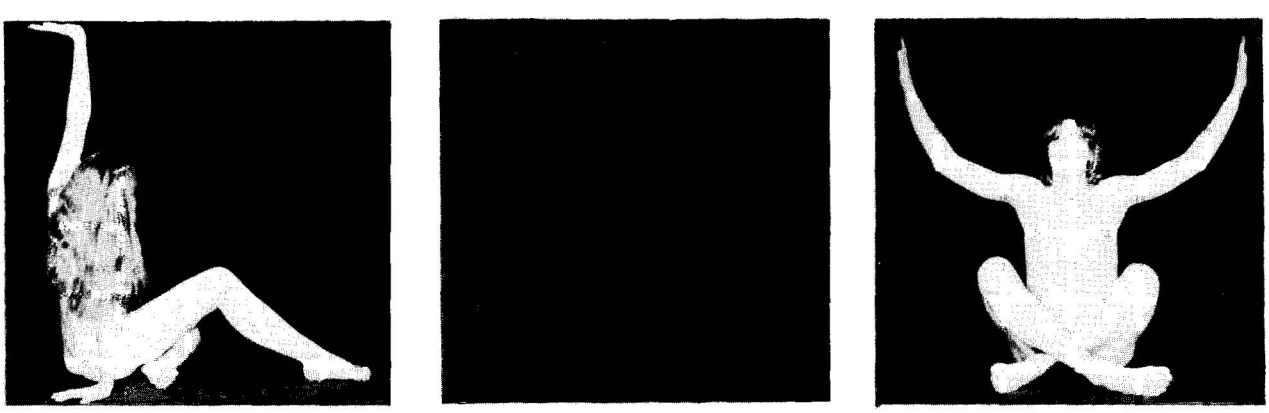
MEN WORKING IN TREES

> "The bastards," he said. . . ."They aim between the eyes, just because it's big, free and beautiful. . . ."
>
> – Romain Gary. *The Roots of Heaven*

The sign astride the narrow green
Fixed between macadam and the mud
Performs the function of a staring sidewalk crowd
And the eye clambers --
Forcing apart the branches and at last
Discovers them. They laugh and laugh.
One saws at lengths; the other
Stuffs thick liquid in a hole.

Their partner on the ground recovers rope
And throws dark glances upward as he coils.
He does not laugh. His heavy, sap-drawn face
Betrays a quick aversion to the higher air
Or else his envy of the ones above --
What if the rope should fail, the thin line give?
Does such a treacherous thought take root
Among the simple soil which forms his brain?

Men working in trees. A lesson here perhaps:
When men fell down from primal jungle gyms
To earth and left their simian cousins to
The leaves, did hatred of the free untrammeled
Life, did murderous impulse toward the floating
Gift of grace become the only seed
Of baleful loving in the human heart,
Thus to creep upward to the heated human head?

THE TULANE ARCHITECTURAL VIEW

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