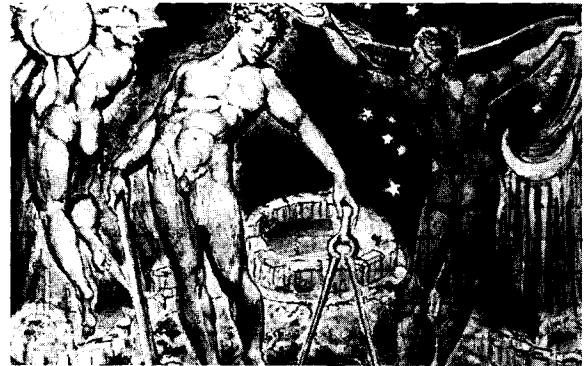


ARCHITECTURE AND THE TECHNOLOGICAL CULTURE



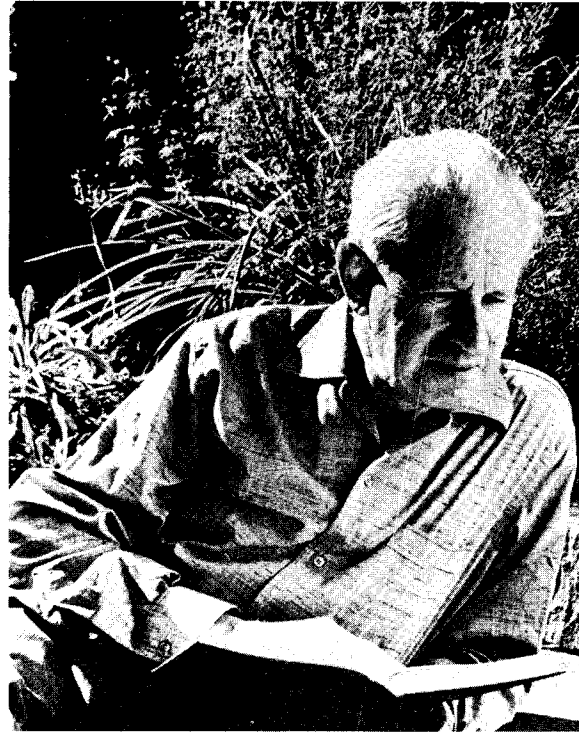
Michael E. Zimmerman of the Newcomb College Department of Philosophy has published in such journals as "Research in Phenomenology," "Man and World" and "Philosophy Today." Dr. Zimmerman is interested in the writings of Karl Marx and the German philosopher, Martin Heidegger, and is currently concluding 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 instrumental 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 rationality 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.

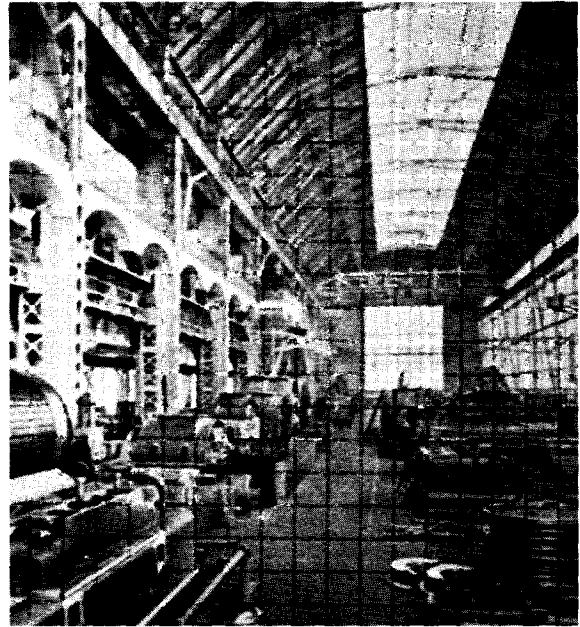


Martin Heidegger.

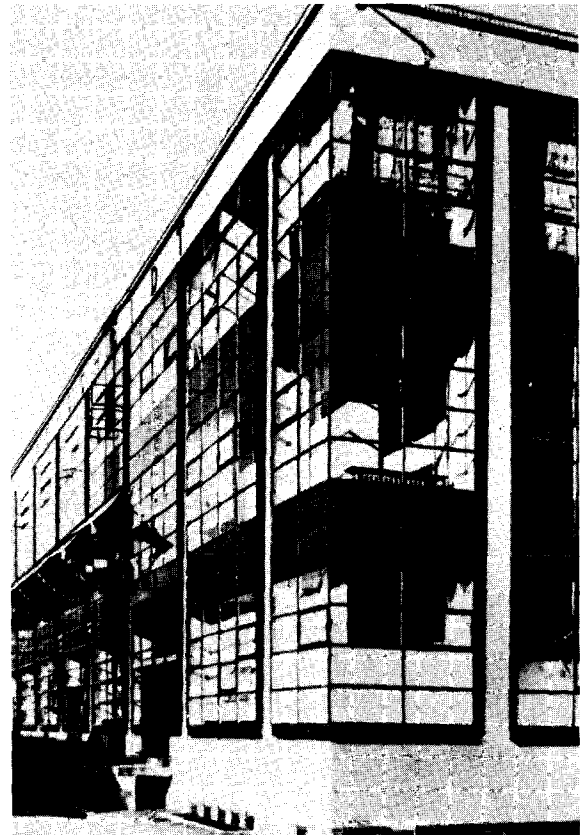
Those who find it hard to accept this description of Western man's understanding of Nature as an object for consumption and domination, need only reflect on the history of the West for the past two hundred years. There is plenty of evidence to support the claim that Western man has made himself out to 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 management,"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

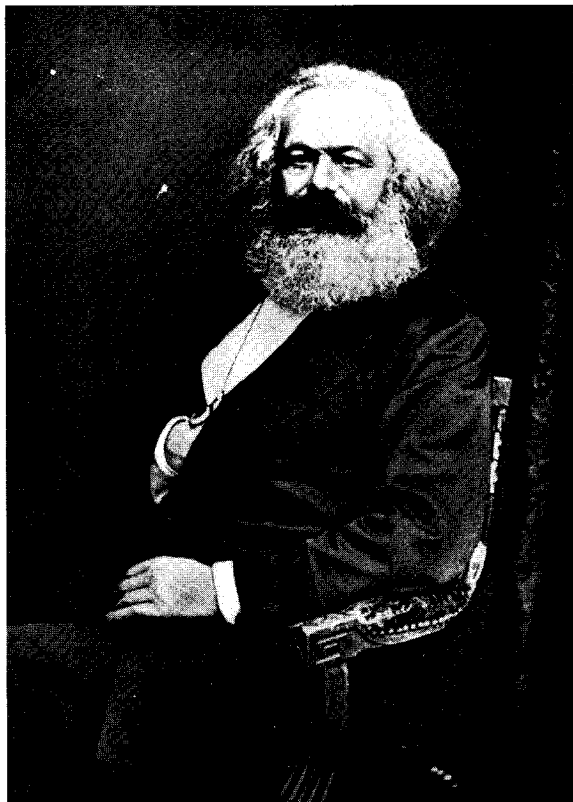


The early years of industrial architecture in Germany: Behrens, AEG Turbinenfabrik, Berlin, 1909.



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



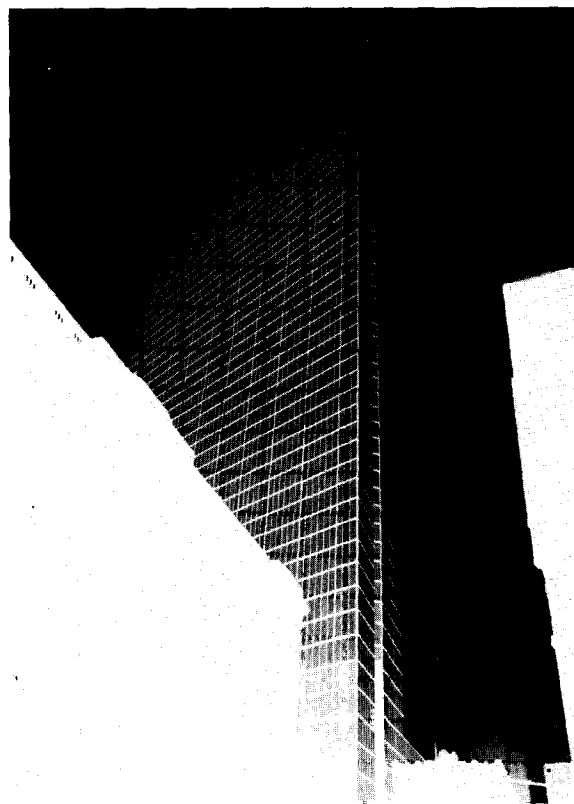
Karl Marx.

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 determining 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 becomes 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

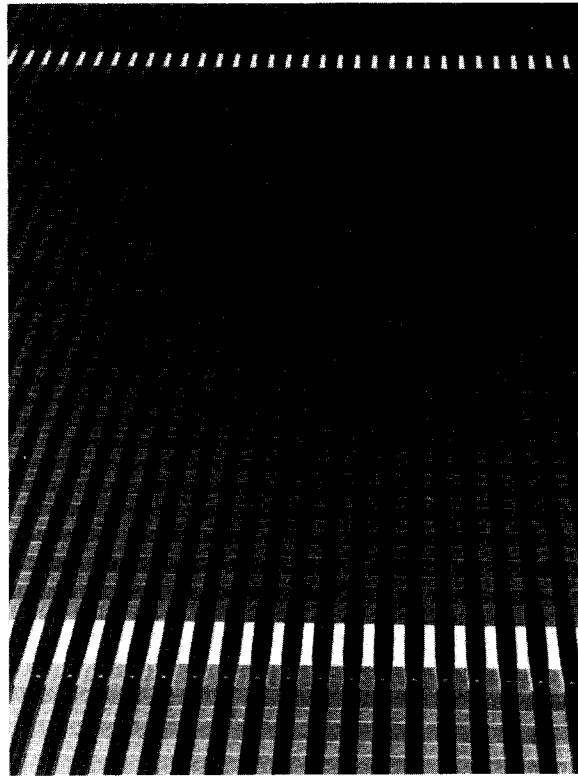
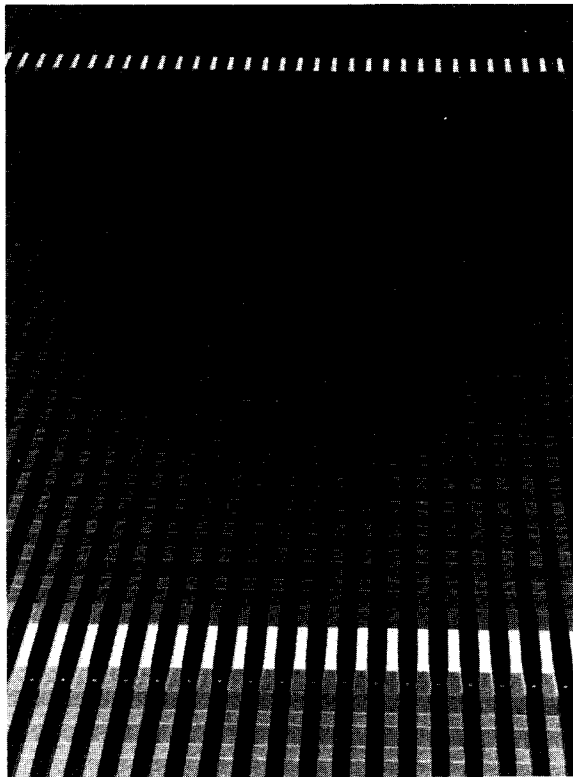


John Hancock Building, Boston

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.

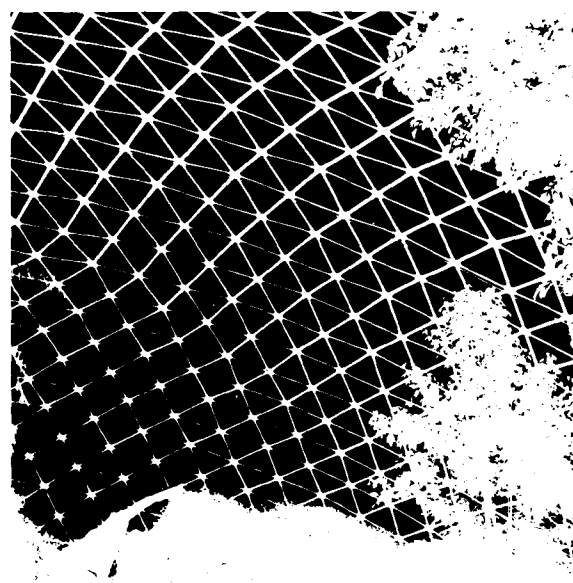
within a machine. To dwell in the world means to have some sort of “wholesome” or “healthy” or “holy” (all these words have the same root) relation to the beings which surround and sustain us.⁶ To dwell in the world includes making some sort of “space,” but here space does not mean the abstract, isotropic, 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 wondrous 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 Jung, "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.