

Machines in the Garden: Architecture, Technology, and Social Responsibility

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A house has to fulfill two purposes. First it is a *machine for living in*, that is, a machine to provide us with efficient help for speed and accuracy in our work, a diligent and helpful machine which should satisfy all our physical needs: comfort. But it should also be a place conducive to meditation, and, lastly a beautiful place, bringing much-needed tranquility to the mind.
- Le Corbusier, "The New Spirit in Architecture," 1924

PROLOGUE

In *Theory and Design in the Second Machine Age*, Martin Pawley writes that the Second Machine Age began with the awareness of the power of information and the birth of cybernetic control.¹ In Pawley's view, architects today face the most philosophically radical position of all: there are forces of organization beyond the control of architects, engineers, and planners that have removed the initiative from the human creators and the protectors of the built environment. The Modern architects of the First Machine Age embraced technology as constructive force that could be humanized transforming the built environment as well as the entire social order. The machine aesthetic of their architecture was not merely a superficial appropriation of machine imagery and, thereby, an empty, symbolic gesture, but a holistic ideology which required a complete transfer of technology to architecture and urban planning.

The complete transformation of the building industry through mass production and the subsequent peaceful social and aesthetic revolution envisioned by the early Modernists never materialized. Stifled by public opinion and bureaucratic procrastination, the potential of the First Machine Age was never realized. Perhaps the price was too high. As Reyner Banham concluded:

The architect who proposes to run with technology knows now that he will be in fast company, and that, in order to keep up, he may have to emulate the Futurists and discard his whole cultural load, including the professional garments by which he is recognized as an architect. If, on the other hand, he decides not to do

this, he may find that a technological culture has decided to go on without him.²

Neither Banham nor Pawley view technology as a panacea for a socially responsible architecture. With technology comes all its attendant problems, as well as its advantages. In the intervening years since the Modern movement began, the machine aesthetic has tarnished. Today, however, it is impossible for the architect to ignore technology, just as it is impossible for the architect to ignore context or the environment. Sustainability, restoration of urban infrastructures, and contextually sensitive planning are just a few of the issues which confront architects today and require an ideological reassessment of the practice of architecture and its ability to meet the challenges of the future.

The bright future envisioned by the Machine Age architects also had its dark side. Edward Morgan Forster's short story "The Machine Stops" published in 1911 offers a bleak account of technocracy out of control: "No one confessed the Machine was out of hand. Year by year it was served with increased efficiency and decreased intelligence. The better a man knew his own duties upon it, the less he understood the duties of his neighbor, and in the world there was not one who understood the monster as a whole. Those master brains had perished."³

Undoubtedly, technology will continue to play a key role in defining the future. The question is, will we control technology or will it control us?

MACHINES IN THE GARDEN

In the Eden panel of Hieronymous Bosch's triptych *The Garden of Earthly Delights* "the new-made Adam and Eve in the foreground, naked and awestruck, with Jesus present in the ancient tradition of showing their creation as accomplished by the Word of God."⁴ From the Fountain of Life in the center of the panel springs life-giving water symbolic of baptism, rebirth, and renewal. Fruit hangs heavy from the surrounding trees as the first animals, unicorns, elephants, and a giraffe, drink peacefully from the life-sustaining waters issuing from the Fountain.

On the surface, all is peaceful and tranquil. However, a disquieting undercurrent offers a prescient foreboding to the events depicted in the hedonistic folly of the central Garden panel which culminates in the horrors of the Hell panel. The little pool by which Adam and Eve have awakened is dark and stagnant and seething with sinister life. The Tree of Life, fecund with fruit, looms over Adam's head charged with murderous energy. Even the crab-like Fountain of Life harbors prognostications of impending doom. Central to the composition, the Fountain is prominently decorated with the crescent moon - almost invariably a mark of the devil, with its obvious associations of Islam and the Turk. From within the Fountain's spherical base peers an owl: bird of magicians and sorcerers. And viewing the entire scene unobtrusively is the serpent twined around a palm tree.⁵ Jesus, seemingly oblivious to all around him, holds Eve's wrist and blesses the union of man and woman. The Fall, implicit in Eve's complicity with sin and death, is prefigured in the instant of her creation.⁶ According to some interpretations, "What Jesus is seeing as he stares away into time, is the whole inevitable panorama of human depravity and damnation that has been set in motion at this moment."⁷

In the Garden panel, the Fountain has been transformed from an organic form into an alchemist's flask.⁸ Aristotle, the philosophical father of alchemy, believed that prime matter formed the basis of all terrestrial substance and therefore - in theory - capable of limitless change. Just as the human soul was thought to yearn toward perfection in heaven, base metal could be transmuted into gold. The artisan-chemist figuratively "killed" lead, copper, or iron by converting it into black oxide, and then "revived" it by combining it with mercury or arsenic to create a whitish alloy. The concept was perfectly suited to the medieval need for universal symmetry.⁹

The transmutation of the organic forms of the Fountain of Life into the man-made elements of the Fountain of Worldly Allure reflects the medieval cycle of birth, death, and regeneration. In a sort of reverse alchemy transmuting the precious into the base, the Fountain of Life is transformed into its man-made counterpart: the machine. In Eden, there is no need for architecture. The Fountains of Eden and the Garden panels, therefore, are follies and have no architectural function. The machine-like characteristics of the Fountain of Worldly Allure is immutably bound to the laws of physics and time; the Fountain of Life is eternal and intransient.

The *Garden of Earthly Delights* is an allegory rich in medieval folk lore and pictographic symbols. At another level, it can also be interpreted as emblematic of the modern era and the awakening of modern man beginning with the Renaissance and culminating with the Modern age. In *L'Esprit Nouveau* Le Corbusier casts contemporary man in a potentially hostile environment, similar to the world that Bosch's Adam and Eve experienced after the Fall:

Disturbed by the reactions which play upon him from every quarter, the man of today is conscious, on the one

hand, of a new world which is forming itself regularly, logically and clearly, which produces in a straightforward way things which are useful and usable, and on the other hand he finds himself to his surprise, living in an old and hostile environment.

The problem is one of adaptation, in which the realities of our life are in question. Society is filled with a violent desire for something which it may obtain or may not. Everything lies in that; everything depends on the effort made and the attention paid to these alarming symptoms.¹⁰

DEUS EX MACHINA

Every Machine is the spiritualization of an organism.
- Theo van Doesberg

The clarion call which exhorted the modernists to overthrow the time-worn constraints of historical styles and purify their work in the spirit of the new age, though diminished like a Doppler pulse, still echos through the century. The bestial image of Marinetti's automobile still threatens bourgeois complacency yet seductively entices us toward the forbidden fruit of technology. Man and machine merge into an inseparable object of desire: "We drew near to the snorting beasts and laid our hands on their burning breasts. Then I flung myself like a corpse on a bier across the seat of my machine, but sat up at once under the steering-wheel, poised like a guillotine blade against my stomach."¹¹

The potency of the machine was vital to the modernists both as an image as well as an ideology. The machine represented all that was new, progressive, and powerful. It was dangerous in its consumption, yet they saw how it could be benevolent, even tamed, and placed at the service of man. Le Corbusier observed:

[W]hen we began our search for purification in an area swarming with ideas, in our efforts to construct a coherent system of thought, basing ourselves on the current changes in society, on the social climate, we were being completely original; we were dealing with people who only exclaimed, in pleasure or indignation, at the turmoil created by the machine, at the machine-gun, the power-hammer, at the smoking machine, which devours men; unlike them, we wanted to learn from the machine and then leave it to its simple role as our servant. It was not our intention to marvel at it, but to assess it.¹²

Pawley points out that from the earliest writings of Le Corbusier it was a central aim of Modern architecture to wed the ancient craft of building to the newer methodology of engineering, the techniques of mass production, and consequently to the philosophy of ephemeralization, or continuous technical development:¹³

Like its close relative the aeroplane, the species 'motor car' was virtually coincident with the first experiments in Modern architecture. From the beginning of this

century the example of abundant success of its reproductive system was everywhere cited by Modern architects as a model to be emulated. Banham himself describes it as the cause of a 'psychological revolution' because of the power it gave to the ordinary individual; 'Man Multiplied by the Motor,' in Marinetti's phrase.¹⁴

To the Modernists, mechanization was based on the immutable laws of mathematics and implied an order which could be transposed to buildings, cities, and even to society: "We postulated that mechanization is based on geometry and established that our lives depend on geometry, that is our very language, by which I mean that geometry denotes order and that mankind expresses itself only through order".¹⁵ Unlike their romantic precursors who viewed technology as threatening, the Modernist architects sought to humanize it. To Le Corbusier, the house was anthropocentric; therefore, its scale and elements should be based on human scale.¹⁶

Function or "fitness for purpose" became a principal concern of Modern architecture. The machine was held in esteem by the modernists for its efficiency and economy. Technology made work easier to perform and more efficient. It also meant that the long hours required to do laborious, time-consuming tasks could now be performed more efficiently by the machine, thus creating more time for leisure and cultural pursuits. The machine aesthetic was not only an appropriation of the physical attributes of the machine to architecture - streamlined forms, mass production, and efficiency - but a desire to humanize technology and place it at the service of man.

De Zurko identifies three traditional analogies of functionalism.¹⁷ The mechanical analogy became the foundation for the machine aesthetic. The moral analogy is more difficult to trace, but is related to the tenet that buildings should "honestly" express their structure on their exteriors and their intended human use. Finally, the organic analogy is based on models derived from the biological sciences. Sullivan and Wright, for example, sought an organic, that is living, architecture relating form to function. Le Corbusier wrote: "I commence by drawing attention to this vital fact: a plan proceeds from within to without, for a house or a palace is an organism comparable to a living being."¹⁸ Walter Gropius used the organic analogy to relate form to function and as an expression of rational order describing functionalist buildings as "transparent structures" and "sharply modelled designs in which every part merges naturally into the comprehensive volume of the whole."¹⁹ Even Mies van der Rohe, whose architecture is often regarded as the antithesis of Wright's, saw a rational/platonic value in organic concepts:

Let us recognize that the mechanistic principle of order overemphasizes the materialistic and functionalist factors in life, since it fails to satisfy our feeling that means must be subsidiary to ends and our desire to dignity and value. So we shall emphasize the organic principle of order as a means of achieving the success-

ful relationship of the parts to each other and to the whole.²⁰

The Pavillon de L'Esprit Nouveau, designed by Le Corbusier for the Exposition des Arts Décoratifs of 1925, was a show-case for a Purist way of life. The Pavillon, a full-scale mock-up of one unit of the *Immeuble-Villas*, had a double-height terrace with a tree passing through a hole in the roof. The adjacent apartment was also double-height with a gallery slung along the back, repeating the section of the Citrohan. Furnished with *objets-type* and purist works of art, it created an entirely homogeneous setting. In contrast to the other Art Deco pavilions featured at the exposition, it was restrained, even puritan.²¹ For example, simple glass flasks and pitchers taken from chemical laboratories were used instead of Lalique crystal. Their idealized forms were similar to the vessels in Ozenfant's and Jeanneret's pictures. The *appartement-type* was furnished with Thonet chairs and Purist pictures, built-in cupboards and shelves. The *machine à habiter* had arrived.

SOCIAL RESPONSIBILITY

Thomas More wrote *Utopia* in 1516, the same year that Bosch died. Utopia was the reflection of the Heavenly kingdom on earth. At its center, was God or his earthly representative, the king, with everything emanating from the center in concentric order. In Utopia, as in Eden, the needs of both the individual and society are met. Utopian concepts for urban designs are always perfect in their symmetry. Like the medieval concept of cosmic order, symmetrically balancing good and evil, utopian order is holistically perfect synthesizing Mies's platonic relationship of part to whole.

Unlike Bosch's subversive pessimism, Le Corbusier assumed that technology, guided by the right framework, had the power to reintegrate modern man with a natural harmony.²² The utopian concept of order was extended by Le Corbusier into architecture through his interpretation of a self-evident natural order:

Not in pursuit of an architectural idea, but simply guided by the results of calculation (derived from the principles which govern our universe) and the conception of a living organism, the engineers of today make use of primary elements and by coordinating them in accordance with the rules, provoke in us architectural emotions, and thus make the work of man ring in unison with the universal order.²³

Modern architects viewed technology as liberating and the new architecture as "the inevitable logical product of the intellectual and technical conditions of our age."²⁴ Scientific analysis was promoted by the Modern movement as a means of defining standards that might secure a "polite and well-ordered society."²⁵ Le Corbusier recognized the political and social ramifications of technology, but lamented its absence in architecture: "Our external world has been enormously transformed in its outward appearance and in the use made

of it, by reason of the machine. We have gained a new perspective and a new social life, but we have not adapted the house thereto.²⁶ He also postulated that serial production techniques, as employed in assembly line production, could be appropriated for architecture: "houses must go up all of a piece, made by machine tools in a factory, assembled as Ford assembles cars, on moving conveyor belts."²⁷ Therefore, at the heart of Functionalist philosophy was the belief, however erroneous, that the social and human problems of our time are to a large extent the products of a false and deficient environment, and that man's condition may be improved through a new architecture which reconquers true and fundamental meanings.²⁸

Le Corbusier's Contemporary City for Three Million Inhabitants of 1922 prefigured his Ville Radieuse of 1930. Dominated by its widely spaced cruciform towers, its metaphor was one of liberation from the constrictions of slums and from the choking effect of traffic on the traditional artery.²⁹ A new hierarchy of circulation running from freeways for fast traffic to straight roads lined by trees in residential areas separating cars from pedestrians were to replace the narrow alleys and streets of Paris. Its concept was derived from Haussmann's large boulevards cutting huge swaths through the fabric of Paris to ease the flow of traffic, let in light and air, and create a grand vista.

Le Corbusier defended mass produced building types, while most people saw only their oppressive uniformity. Ever an idealist, Le Corbusier put his faith in an elite of technocrats whose investments and energy were supposed to generate wealth and employment, but whose cultivation and public spiritedness were to edify the social realm and put restraints upon the chaos of *laissez-faire*. Le Corbusier's overly deterministic methodology implied that plans could in and of themselves bring about a peaceful revolution in values, similar to Charles Fourier's "Newtonian Sociology" of opposing forces finding an ideal equilibrium through the application of the right architectural reform.³⁰

Le Corbusier was not the only Modern architect concerned with mass production and socially responsible architecture. In 1910, Walter Gropius suggested to Rathenau, the president of the turbine manufacturer AEG of Berlin, that a firm be set up to build prefabricated workers housing from standardized materials. In his earliest works, Gropius seemed to eschew a personal style for designs lacking any stylistic superstructure, apart from that demanded by necessity and that structure must be rationally defined.³¹ Gropius' denunciation of style for functionalism was later echoed by Hilbersheimer and Mies van der Rohe who seemed to make Modernist functionalism practically a *fait accompli*: "Architecture is the will of the epoch translated into space. Our utilitarian buildings can become worthy in the name of architecture only if they interpret their time by their perfect functionalist expression."³²

Later critics brought machine age planning strategies under scrutiny. In his collection of essays *The Highway and the City*, Lewis Mumford rejects mechanical solutions for

architectural planning:

A good architectural solution today cannot be a mere mechanical solution, however brilliant or original, any more than it can be a mere cellophane package, wrapped in Mondrian strings. What we still lack is an order of architecture capable of expressing in appropriate constructional form our many-faceted human needs, esthetic and social, and of cultivating economy as a means to inner grace - the sort of order exhibited by Pier Luigi Nervi.

What modern architecture needs if it is to achieve the richness of form its earlier machine-minded program denied is a matching and molding of formal order, physical functions, and human feelings, both from within and without, which means arranging all the mechanical, biological, social and personal aspects of a building in the rank of their importance and significance for the human purpose in mind.³³

"Functionalism, as a creed or a programme," concludes Banham, "may have a certain austere nobility, but it is poverty-stricken symbolically."³⁴ The symbolic meanings designed into the architecture of the 1920s, were discarded or ignored in subsequent years. Banham cites two reasons for this phenomenon: First, many of the architects coming to the Modern movement after its pioneers came too late to participate in the exchanges of ideas generating most of its concepts and ideologies. Second, due to the hostile political climate in Europe during the 1930s, architects were compelled to justify the International Style on logical and economic grounds as opposed to aesthetic or symbolic values. Although Banham acknowledges that buildings such as Le Corbusier's Villa Savoye and Mies van der Rohe's Barcelona Pavilion are masterpieces of 1920s Modernism, they are flawed as examples of a true Machine Aesthetic. The Modern architects, in Banham's opinion, cut themselves off from the philosophical aspects of Futurism and, as a result, cut themselves off from their own historical beginnings as well as from their foothold in the world of technology. Buckminster Fuller characterized technology as an "unhaltable trend to constantly accelerating change."³⁵ According to Banham, the mainstream of the Modern Movement had begun to lose sight of this aspect of technology very early in the 1920s, as can be seen from their choice of symbolic forms and symbolic mental processes, and their use of the theory of types.

Participants at the Congress for a New Urbanism held in Alexandria, Virginia in October, 1993 by and large seemed to embrace the fundamentally Modernist notion that good architectural planning can solve social problems. The new town planning model the Congress endorses rejects the standard image of single-family houses on large lots strung along winding streets for a more congenial mix of uses and building types found in traditional town planning. Traditional planning concepts, such as intimate scale, through streets, varied housing types, a mixed-use center within

walking distance, and clearly defined public space, take on new currency. Furthermore, traditional planning techniques are combined with the social and environmental concerns of the last few decades, such as reducing the use of automobiles, increasing the use of public transportation, creating a more diverse mix of residents, and respecting the natural environment and the historical character of place.³⁶

In "Landscape and Townscape," Mumford emphasizes the "biological function" of open spaces and their importance in sustaining life. He cites three major changes effecting changes in open space. First, the change in the mode of human settlement brought about by fast transportation and instantaneous means of communication. As a result, physical congestion is no longer the sole possible way of bringing a large population into intimate contact and cooperation. Second, the disappearance of trees and gardens due to pressures caused by development and population growth. Third, the general reduction of working hours which has created a large leisured population.³⁷ Mumford consequently endorses Ebenezer Howard's garden city concept that "will widen into a prospect of a garden civilization."³⁸

Although some architects, such as Andres Duany, insist on linking architectural design with human behavior, other architects disagree. Peter Eisenman's assertion that "the notion that architecture remedies anything has been proven false" represents a split in the Modern tradition and the Modern belief of social reform.³⁹ The new urbanists seem to embrace Classical urban design as part of a larger stance against the entire romantic tradition of winding streets, large lots, and abundant landscaping. It is also a reaction to the nihilistic undercurrent which permeates the contemporary architectural avant garde and has led many architects to dismiss any effort at social reform and progress as naive and futile.⁴⁰

To Le Corbusier, architecture was a moral issue:

Lack of truth is deplorable, we perish in untruth.

Architecture is one of the most urgent needs of man, for the house has always been the indispensable and first tool that he has forged for himself. Man's stock of tools marks out the stages of civilization the result of successive improvements, the efforts of all generations embodied in them.⁴¹

Although Le Corbusier could see the academic advantages of Beaux-Arts planning principles, he admonished their application to real planning problems as "dogmatic" and "a dangerous practice."⁴²

However, to the new urbanists, Classicism is not an architectural style; it is a progressive political idea. Enlightenment principles such as democratic participation, rational argument, and the rule of law are emphasized in community charettes, working congresses, and design codes.⁴³ The transportation networks of roadways and railroads envisioned as the principle organizing element by the modernist architects, have given way to the high-tech information highway. According to Thomas Fisher, architectural style

has become less important to quality of life:

As both production and consumption become less and less dependent upon the physical proximity of coworkers or merchandise, people will become increasingly free to live anywhere along the information highway. And as that freedom becomes more prevalent, the quality of life in a place, rather than its location or convenience, may become the dominant criterion for choosing one's residence.⁴⁴

EPILOGUE

On the outside of the Garden of Earthly Delights triptych, when the panels are closed, Bosch painted the Third Day of Creation. The Earth is encased in a transparent globe with light and dark separating the firmament, and the Earth heaving itself up between, slowly taking shape in the gray mist. A rainbow appears over the receding water revealing primordial plants and trees. Along the emerging shores, a strange array of spiky, menacing plants transgress the border between human and beast, vegetable and mineral, and life and death. "And here they are, waiting for the Garden and mankind to be born, and God seems very small and far away, already retreating from the consequences of his world."⁴⁵

NOTES

- ¹ Martin Pawley, *Theory and Design in the Second Machine Age*, Basil Blackwell Ltd., Oxford, England, 1990, p. 179.
- ² *Ibid.*, p. 9.
- ³ *Ibid.*, p. 171.
- ⁴ Peter S. Beagle, *The Garden of Earthly Delights*, The Viking Press, New York, 1982, p.40.
- ⁵ *Ibid.*, pp.4143.
- ⁶ *Ibid.*, p. 41.
- ⁷ *Ibid.*, p. 41.
- ⁸ "The Fountain of Worldly Allure stands in the middle of the pond of lust. The base of the tower looks like the earth's globe, but it is cracked and hollow Along the equator men and women frolic, holding out their hands to help other swimming sinners aboard Gleaming pink horns of cuckoldry sprout from the top of the tower" (Beagle, 1982). Other writers have associated Bosch's pictographic symbols with the arcana of alchemy as well as Netherlandic medieval folk lore. Although Bosch's symbols have multiple meanings, Dirk Bax was one of the first scholars to base his interpretation of Bosch on the artist's visual means of communication and link it with other works of art.
- ⁹ *Ibid.*, p. 49.
- ¹⁰ Reyner Banham, *Theory and Design in the First Machine Age*, The MIT Press, Cambridge, Massachusetts, 1960, p. 245.
- ¹¹ *Ibid.*, p. 101.
- ¹² Le Corbusier, "The New Spirit in Architecture, 1924," Tim and Charlotte Benton with Dennis Sharp, *Form and Function*, Crosby Lockwood Staples, London, 1975, p. 132.
- ¹³ Pawley, p. 47.
- ¹⁴ *Ibid.*, p. 55.
- ¹⁵ Le Corbusier, p. 132.
- ¹⁶ *Ibid.*, p. 133.
- ¹⁷ Edward Robert De Zurko, *Origins of Functionalist Theory*, Columbia University Press, New York, 1957, pp. 314.

De Zurko writes:

Functionalist theories of architecture are those which make strict adaptation of form to purpose the basic guiding principle of design and the principal yardstick by which to measure the excellence or the beauty of architecture. There are various interrelated types of functions, such as the practical or material needs of the occupants of a building; the functional expression of a structure; the psychological needs of the occupants; the social function of architecture; and the symbolic-monumental function of architecture. Functionalism is generally associated with the first two: the practical, material needs of the occupants of a building and the expression of structure (p. 7).

¹⁸ Larry L. Ligo, *The Concept of Function in Twentieth-Century Architectural Criticism*, UMI Research Press, Ann Arbor, Michigan, 1984, p. 12.

Ligo also points out that Le Corbusier called the architect a "creator of organisms," and attributed the engineers' "conception of a living organism" to their ability to achieve harmony.

¹⁹ Christian Norberg-Schulz, *Meaning in Western Architecture*, Rizzoli International Publications, New York, 1980, p. 186.

²⁰ Ligo, p. 12.

²¹ William J. R. Curtis, *Le Corbusier: Ideas and Forms*, Rizzoli International Publications, New York, 1986, p. 64.

²² *Ibid.*, p. 64.

²³ Banham, p. 225.

²⁴ Norberg-Schulz, p. 186.

²⁵ *Ibid.*, p. 187.

Banham relates that the scientific view promoted by the early Modern architects was not the same as most twentieth-century writers understand it, as a mental discipline based on experimental research. It was, rather, an attitude to history similar to Julien Gaudet's description of the architect as a sort of contemporary Renaissance man: "The architect today is, or should be, a most manifold man: a man of science in all matters touching construction and its applications, a man of science also in his profound knowledge of the whole heritage of architecture" (p. 18).

At the same time, Modern architects were also claiming for their theories the prestige of the advanced science of the twentieth century. The terms "scientific" and "objective" were

used to justify the theoretical basis of Modern architecture and the aesthetics of Abstract art, which are rendered in terms of being logically impeccable.

²⁶ Banham, p. 241.

²⁷ Banham, p. 222.

²⁸ Norberg-Schulz, p. 187.

²⁹ Curtis, p. 63.

³⁰ Curtis, p. 63.

³¹ Alberto Busignani, *Gropius*, The Hamlyn Publishing Group Ltd., London, 1973, p. 12.

³² Banham, p. 272.

³³ Lewis Mumford, "Babel in Europe," *The Highway and the City*, Greenwood Press, Westport, Connecticut, 1963,

pp. 5 and 6.

³⁴ Banham, p. 320.

³⁵ Banham, p. 327.

³⁶ Thomas Fisher, "Do the Suburbs have a Future?," *Progressive Architecture*, December, 1993, p. 36.

³⁷ Mumford, "Landscape and Townscape," p. 224.

³⁸ *Ibid.*, p. 225.

³⁹ Fisher, p. 38.

⁴⁰ *Ibid.*, p. 38.

⁴¹ Banham, p. 241.

According to De Zurko, the moral element was strong in the writings of Frank Lloyd Wright who warned architects to "avoid all things which have no real meaning" and used such expressions as "honesty," "integrity," and "truth to itself" in describing good architecture. He also points out Le Corbusier's strong moral sense which permeates his writings on aesthetics: If we eliminate from our hearts and minds all dead concepts in regard to the house, and look at the question from a critical and objective point of view, we shall arrive at the "House-Machine," the mass-produced house, healthy (and morally so too) and beautiful in the same way that working tools and instruments which accompany our existence are beautiful (p. 14).

⁴² *Ibid.*, p. 227.

⁴³ Fisher, p. 41.

⁴⁴ *Ibid.*, p. 41

⁴⁵ Beagle, p. 39.