Marinetti's Motorcar:
The City and the Machine Aesthetic

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THE MACHINE AESTHETIC

At the beginning of the twentieth century two very different ideological views of the machine were presented. In the chapter entitled "Eyes Which Do Not See" in *Towards a New Architecture*, Le Corbusier pairs images of a 1907 Humber and 1927 Delage with those of Greek Temples. Le Corbusier's message is unmistakable: he presents the automobile, a product of mass-production and standardization, as an enduring aesthetic object, exhibiting a level of artistic refinement comparable to the orders of a Doric temple (Fig.1). The principle they hold in common, according to Le Corbusier, is that the Parthenon and the automobile are both products of selection applied to an established standard. He points out that a Greek temple had been standardized in all its parts for already a century and that a similar approach to standardization and selection has been applied to the manufacture and aesthetics of the automobile. Le Corbusier reasoned that the "aesthetic of the engineer" and standardization could be applied to architecture in order to achieve "a standard of practical realization" and "a manifestation not only of perfection and harmony, but of beauty."[1]
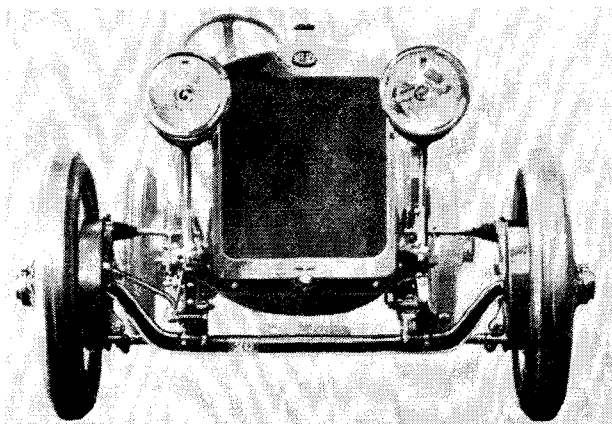

Fig. 1. Delage Automobile from Le Corbusier's Towards a New Architecture.

A second more radical point of view, penned by Tommaso Marinetti in the prologue of the Futurist's *Foundation Manifesto* published in 1909, presents the automobile as the apotheosis of machine-age technology as well as the revolutionary antithesis of historicism. Marinetti juxtaposes the new machine age against a Baudelarian backdrop of "ancestral ennui." On one hand, Marinetti's motorcar is a liberating force propelling humankind toward a utopian brave new world. At the same time, it represents a sacrificial bier where "black phantoms . . . ferret in the red-hot bellies of locomotives as they hurtle forward at insensate speed." Reyner Banham notes that Marinetti's prologue presents the sense the overriding of an old, tradition-bound technology, unchanged since the Renaissance, by a newer one without traditions.

"It was this manifest and radical change-over to a technological society which animated the whole of Futurist thought, and it was the sense of sudden change which, in all probability, enabled them to exploit more quickly than other European intellectuals the new experiences which they had in common with the poets and painters of Paris, London, and Berlin."[2]

Whereas Le Corbusier sought to engage the past in modern terms, the anti-art reaction of the Futurists' was against the art of the past, and against culture as something inherited from the past. The Futurists incited the intellectuals to "set fire to the libraries, divert canals to flood out the museums." Detaching themselves form art, they attached themselves instead to the new elements in life whose very possibility the ancients could not have suspected. Bundled together, those elements added up to life in the mechanized metropolises of the Northern Hemisphere. As Banham acerbically observes: "The Futurists did not merely accept the fact that they had to live in the twentieth century; they volunteered to join it."[3]

What Le Corbusier decried was an adherence to custom, which he viewed as stifling to architecture, but not to style. "Style is a unity of principle animating all the work of an epoch," he

writes, "the result of a state of mind which has its own special character."[4] He also states that "the 'styles' are a lie." This search for a *zeitgeist* appropriate to the modern age led Le Corbusier inexorably towards the machine has the harbinger of the new epoch:

"Machines will lead to a new order both of work and of leisure. Entire cities have to be constructed, or reconstructed, in order to provide a maximum comfort, for if this is delayed too long, there may be a disturbance of the balance of society."[5]

And here lies the difference between Le Corbusier's vision and that of the Futurists': The Futurists' intended to destroy bourgeois society; Le Corbusier wanted to preserve it by modernizing it. As Banham notes, Le Corbusier's intention is not to present a *contradiction d'esprit* between the Mechanical and the Classical, but to establish an analogy, if not an equivalence between the two: "This precision, this cleanliness in execution go farther back than our reborn mechanical sense. Phidias felt in this way; the entablature of the Parthenon is a witness."[6]

MECHANIZATION TAKES COMMAND

The idea of type was a preoccupation of the modernists as an outgrowth of the writings of Muthesius and Semper. In Le Corbusier's case it can be traced to his interest in classical architecture and the *objet-type* as well as his artistic experiments with Purism. In industrial design, furniture was being dissected into its elements, into a system of struts and planes. The effect was "as light, as transparent, as hovering as possible, almost like an iron skeleton."[7] Architect and designer merged into one person. And for the first time since the eighteenth century, the room and its contents were conceived as a single entity.

At a symbolic level, Marinetti's motorcar represents a complete break from tradition and history, which the Futurist's believed had lapsed into decadence. Unlike Le Corbusier who valued the automobile as an ultimate product of the "engineer's aesthetic" and an *objet-type*, irreducible to its constituent parts, the Futurists' valued the automobile only for what it *represented*: speed, power, efficiency, and mobility. "Their achievement," according to Banham, "was to identify, with some accuracy, how people were going to live in the twentieth century; and with some authority, certain basic ways of responding to it."[8]

Mumford contends that in back of the development of tools and machines lies the attempt to modify the environment in such a way as to fortify and sustain the human organism. This effort is either to extend the powers of the organism, or to manufacture outside the body a set of conditions more favorable toward maintaining its equilibrium and its survival. "The essential distinction between a machine and a tool," he continues," lies in the degree of independence in the operation from the skill and the motive power of the operator: the tool lends itself to manipulation, the machine to automatic action."[9] For Mumford, the degree of complexity is unimportant since in using a tool, the human eye and hand perform complicated actions comparable to a well-developed machine. On the other hand, there are highly effective machines, which do very simple tasks. The difference between tools and machines, therefore, lies primarily in the degree of automatism they have reached.

Giedion viewed the assembly line as one of mechanization's most effective tools since it aims at an uninterrupted production process by organizing and integrating the various operations.[10] Its ultimate goal is to mold manufacturing into a single tool wherein all the phases of production, all the machines, become one great unit. Time also plays an important part; for the machines must be regulated to one another. The growth of the assembly-line with its labor-saving and production-raising measures is closely bound up with mass-production and standardization.

Le Corbusier understood the need for standardization in architecture relative to machine production, efficiency, and, notably, even aesthetics which he believed also could be standardized: "Architecture is governed by standards. Standards are a matter of logic and precise study."[11] This is about the time when Henry Ford brings the assembly line into the limelight of success. Giedion observes that Henry Ford's function is to have first recognized democratic possibilities in a vehicle that had always ranked as a privilege. "The idea of transforming so complicated a mechanism as a motorcar from a luxury article into one of common use, and of bringing its price within reach of the average man, would have been unthinkable in Europe,"[12] he writes. This is probably true, except of course in the case of Le Corbusier. He believed that houses, like automobiles, could be mass-produced according to precise standards to reduce cost and improve their functional efficiency and craftsmanship. "The establishment of a standard," Le Corbusier asserts, "involves exhausting every practical and reasonable possibility, and extracting from them a recognizable type conformable to its functions, with a maximum output and minimum use of means, workmanship and material, words, forms, colors, sound."[13]

His architectural response to standardization was the white-washed cubic Citrohan house of 1920-22 (Fig. 2). A pun on the name of the automobile "Citroën", it was figuratively and literally conceived as "a house like a car." Le Corbusier hoped to mass-produce the pieces of the building by adapting the scientific management methods developed by F. W. Taylor used in automobile factories. Curtis points out that the Citrohan was intended to be a prototype for mass-produced housing, industrial design, and urban design. "[It] embodied the conception of the *machine à habiter* — a 'machine for living in' — a functional
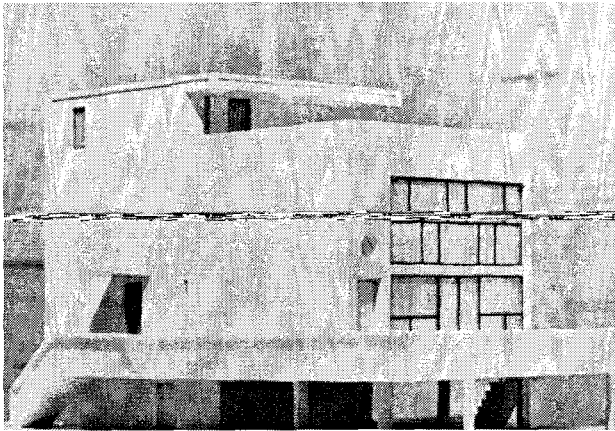
Fig. 2. Le Corbusier. Model of Maison Citrohan. 1921-22.

tool raised to the level of art through judicious proportions. fine spaces. and the stripping away of pointless decoration."[14]

THE MACHINE AND THE CITY

The Modern City is by-and-large a product of rationalist thought introduced in the eighteenth century. Descartes argued that since we cannot trust the evidence of our senses (as the Empiricists contended) we must search. instead, for universal truths which. like Plato, could be reached by logical thinking. Descartes saw the fortified towns which were being built in France as conceived in the mind of a single engineer and. therefore. superior to congested medieval towns developed over time.[15] For Laugier the art of planning a town consists of dividing the whole into an infinite number of beautiful. entirely different details. Borrowing from Plato's notion of ideal forms. Quartemère de Quincy emphasized the idea of type which "presents an image of a thing to copy or to imitate completely, [rather] than the idea of an element which itself ought to serve as a rule or a model . . . The model. therefore. is understood in practical execution . . . as an object that should be repeated as it is: the *type* on the contrary is an object after which each [artist] can conceive works which may not be much like each other."[16]

Between 1918 and 1921 Le Corbusier had been preoccupied with general "laws" governing painting and architecture that he applied to urbanism. treating it as a pseudo-science that might guide the destiny of society.[17] "A Contemporary City for Three Million Inhabitants". exhibited at the Salon d'Automne in 1922. examined the general case of an industrial town including management. manufacturing. transport. habitation. and leisure. each function in its own zone. Mass-produced steel — and concrete-framed buildings increased density and opened green spaces between buildings to unimpeded traffic and vast parks. It's planning concepts of green spaces. geometry. and axes were similar those laid out in *La Cité industrielle* by Tony Ganier. whom Le Corbusier likely met in Lyons in 1914.[18] The Ville Contemporaine was Le Corbusier's

critique of the congested nineteenth-century city. but it still represented centralization of government. money. resources. and culture.

In 1917 Garnier formulated his urban principles into *La Cité industrielle* where he tried to lay out all the problems and solutions of the "most general case" of the Industrial City. Based on Ebeneezer Howard's Garden City principles. it proposed a rationalized system of zoning to separate industry from habitation. and conceived of the city as big park. articulated by axes. and regular geometry. There was a civic area towards the center and small family villas were laid out alongside streets lined with trees. Reinforced concrete was used extensively resulting in flat-topped apartment buildings with terrace roofs. The sanitary role of nature was rethought in ways that faced up to the techniques. values. and potentials of an industrial society. but the whole was pervaded by a latent Classical ambience. Tafuri's assessment is laconic: For Garnier "the future was anchored in the past fondly pictured as a Golden Age, an equilibrium to be won again."[19]
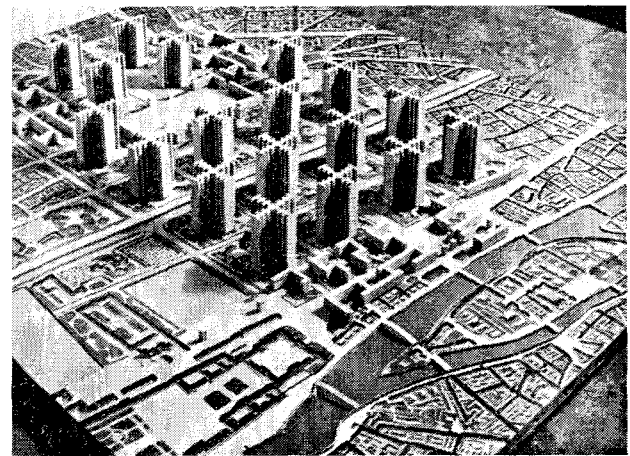

Fig. 3. Le Corbusier. Model of Plan Voisin. Paris. 1925.

Le Corbusier's Plan Voisin. exhibited in 1925. concentrated on a few square kilometers of Paris to the north side of the Seine (Fig. 3). Curtis describes it as "a heavy-handed intrusion of pieces of the Ville Contemporaine into an actual urban and historical setting" that undervalued the role of the street as a social institution.[20] The glass towers that dominated the plan were supposed to be emblems of the new economic order as well as new symbols of the *zeitgeist*. Le Corbusier argued that each age evolves its own types. and that this was now the era of the skyscraper. He also prophesized with uncanny precision the building types and transport systems that would dominate the industrial cityscapes of the future and tried to give them order and the enrichments of nature. Yet despite his prescience. he misunderstood the importance of territoriality and historical memory of the previous cityscape.[21]

From the mid-1950s. and for almost twenty years. the idea of an urban area as a large. interconnected building dominated much
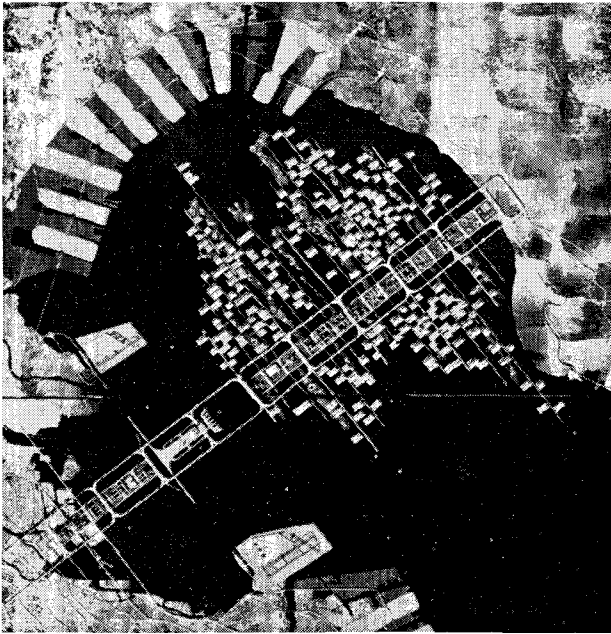
Fig. 4. Kenzo Tange, Tokyo Bay Project, 1960.

architectural thinking about cities (Fig. 4). The megastructure building was conceived as an incident within a larger framework where the street becomes a weather-protected corridor or bridge and the plaza an interior atrium. The idea seemed to appeal especially to designers in Great Britain and Japan. but soon it became widely accepted all over the world. Fumihiko Maki defines a megastructure as:

"A large frame in which all the functions of a city of part of a city are housed. It has been made possible by present day technology. In a sense it is a man-made feature of the landscape . . . a mass-human scale form which includes a Mega-form. and discreet. rapidly-changing functional units which fit within the larger framework."[22]

Visions of the city as a gigantic structure were almost always tied to a future in which the imperfections of modern cities would be swept away by the force of new technology. However, as Barnett notes "the idea of the city as an enormous building was actually a well-established concept that went back to the royal palace, which was always a self-contained community within a city, and sometimes in pre-industrial times assumed the dimensions of the city itself."[23]

Banham writes that the whole revival of a romantic vision of modern technology goes in direct parallel with a revival of architectural-historical interest in Expressionism and above all Futurism of the early twentieth century.[24] Whereas the International Style classicized technology and machinery into neat smooth regular anonymous solids. the megastructuralists clearly saw technology as a visually wild and rich matrix of piping. wiring. and struts. Sant'Elia's writings and drawings of monu-
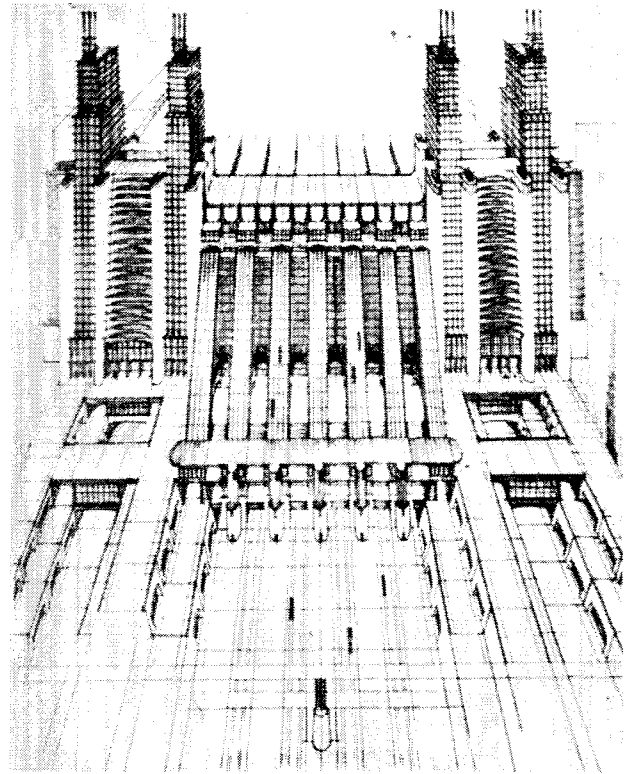

Fig. 5. Antonio Sant'Elia, Milan Central Station project, 1914.

mental buildings intercepted by roadways and railroads provided much of the visionary impetus for megastructures (Fig. 5):

"We must invent and rebuild exnouvo our modern city like an immense and tumultuous building site. active, mobile, and everywhere dynamic, and the modern building like a gigantic machine . . . lifts must swarm up the facades like serpents of glass and iron . . . [the street must] plunge stories deep into the earth. collecting the traffic of the metropolis and connected for necessary transfers to metal cat-walks and high-speed conveyor belts."[25]

Le Corbusier's Unité d'Habitation is conceived as a large apartment house designed to be a self-contained community. with a "street of shops" on an intermediate floor and a kindergarten on the roof. In Great Britain, in particular, its design affected an entire generation of publicly funded housing. Alison and Peter Smithson's 1952 competition design for housing at Golden Lane in London. for example. took Le Corbusier's upper-level street of shops inside an unité d'habitation and elaborated it into a concept of streets in the air. interconnecting linear buildings to form a sub-district of a city. Ralph Erskine's Byker Estate at Newcastle, originally planned to be a mile long, screens the highway and north wind and opens out generously to the south with windows and balconies.

The Metabolist theory postulates cities designed to grow and change with time and different conditions.[26] The underlying

structure would be permanent, but units of the city would be attached to the structure as flowers to stalk or leaves to a tree. "The structural element is thought of as a tree — a permanent element, with the dwelling units as leaves — temporary elements which fall down and are renewed according to the needs of the moment. The buildings can grow within this structure and die and grow again — but the structure remains."[27]

The only strong argument in favor of the future city as a gigantic building was that it represented an orderly and efficient means of growth. But taking the order and efficiency of a building up to the scale of a city can actually create enormous inefficiencies, as testified by the dynamiting of the Pruitt-Igoe housing development in St. Louis.

SPEED, SPACE, AND HETEROTOPIA

The spatial, social, and architectural coherence within a given locality which was positioned inside a meaningful universe has been dissolved over a long period of time.[28] Today, Foucault asserts, the space that we inhabit is no longer the localized space of the Middle Ages and the Renaissance. Since the seventeenth century localization has been replaced by extension. He contends that "arrangement has taken over from extension, which had once replaced localization. It is defined by relationships of neighborhood between points and elements, which can be defined formally as series and networks."[29]

"The interest in transitions in the architectonic space, according to Juel-Christiansen, "signals partly that there is no articulated notion of wholeness for shaping coherence in the space and partly that existing connections between the parts cannot be apprehended as architectonic forms."[30] Thus, pragmatic, contemporary space consists predominantly of separate and juxtaposed elements. He goes on to say that three conditions represent crucial changes in connection with modern space: globalization (the relationship between body and place), individualization (the relation between individual and community), and simulation (the relation between repetition and difference). In the post-modern information age, heterotopia has replaced utopia.

Banham notes that for most of history, space has existed only inside structures — outside was only nature, chaos, and the immeasurable. The Greek and Renaissance architects saw the outsides of their buildings as isolated works of art. Unlike the Greeks, the Renaissance architects contrived small, boxy, perspective-centered, internalized spaces closed in by the facades that flanked the piazza, spaces furnished by the buildings that they contained. Baroque space admitted of infinity, but it was more usually symbolic than actual. During the nineteenth century with the advent of the railway physical distances shrank and Baroque planning concepts were pushed to their limit.
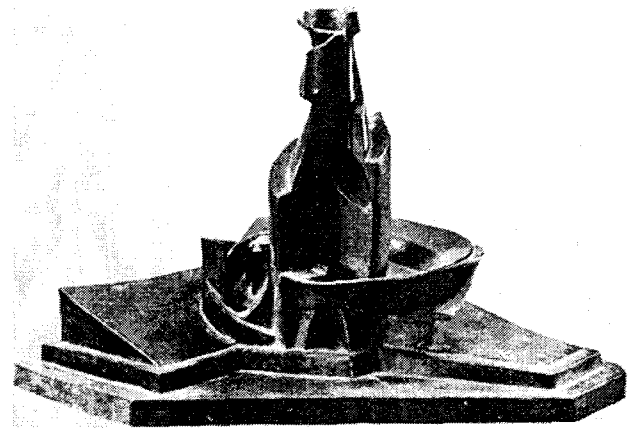

Fig. 6. Boccioni, Bottle Evolving in Space, 1912.

At the beginning of the twentieth-century the Cubist painters challenged the perspective conventions of a fixed vanishing point while the Futurists were thinking of space as being focused by the objects within it, almost irrespective of any observer (Fig. 6). Between these two concepts, the basic space concept of modern architecture appeared:

> "In this concept, space is firstly infinite, and extends unrestrainedly in all directions. . . . Secondly, this space is measured, defined, made apprehensible by some sort of invisible structure or geometry . . . thirdly, the space of modern architecture is conceived as a having a very special relationship to the observer: either [the observer] or it is in motion . . . "[31]

CONCLUSION

Sir Herbert Read has proposed that the failure of Futurism lay in the fact that it "was fundamentally a symbolic art, an attempt to illustrate conceptual notions in plastic form." He argues that "a living art begins with feeling, proceeds to material, and only incidentally acquires symbolic significance."[32]

The Futurists imagined a modern city that was hygienic and efficient, yet despite their optimism they were skeptical of the machine aesthetic and the real character of the utopian city of which they dreamed. The modern city has been subsequently sublimated consciously and unconsciously into other models. The automobile and the highway have contributed to urban sprawl and the dissolution of the traditional urban core and the civic realm.

Le Corbusier's and Marinetti's visions of technology, although different, optimistically embraced the *zeitgeist* of the modern scientific age. The automobile and the skyscraper, both products of artistic intent and engineering pragmatism, were

potent symbols of this age. However. the machine aesthetic of the modern city never materialized as Le Corbusier and the Futurists envisioned. The scientific positivism that had characterized the Enlightenment and embraced by the modernist architects was supplanted by the exigencies of post-modernism.

Today it seems new technology is developed to solve problems created by old technology. The traditional hierarchical city with a defined urban core has been replaced by a decentralized linear city. The ribbons of asphalt that were essential to Marinetti's motorcar have new analogues in the cyber space of the information highway, the edge-city, and the periphery center. The original promise of technology and the *zeitgeist* of modernism have been overshadowed by the illusion of a technocratic brave new world. For Banham and those who extol the virtues of technology. Marinetti's motorcar will always represent "the true voice of twentieth-century feeling."[33]

NOTES

[1] "The motor-car is an object with a simple function (to travel) and complicated aims (comfort, resistance, appearance), which has forced on big industry the absolute necessity of standardization. All motorcars have the same essential arrangements. But, by reason of the unceasing competition between the innumerable firms who make them, every maker has found himself obliged to get to the top of this competition and, over and above the standard of practical realization, to prosecute the search for perfection and a harmony beyond the mere practical side, a manifestation not only of perfection and harmony, but of beauty."
[Le Corbusier, *Towards a New Architecture*, Frederick Etchells, transl. (New York: Dover Publications, 1986), pp. 137-138.]

[2] Reyner Banham, *Theory and Design in the First Machine Age* (London: The Architectural Press, 1960), p. 100.

[3] Reyner Banham, "Primitives of Mechanized Art," A Critic Writes: Essays by Reyner Banham (Berkeley, CA: University of California Press, 1996), p. 41.

[4] Le Corbusier, *New Architecture*, p. 88.

[5] *Ibid.*, p. 101.

[6] *Ibid.*, pp. 145-46.

[7] Sigfried Giedion, *Mechanization Takes Command: a Contribution to Anonymous History* (New York: Oxford University Press, 1948), p. 485.

[8] Banham, "Primitives of Mechanized Art," p. 42.

[9] Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace and Company, 1934) p. 10.

[10] Giedion, *Mechanization Takes Command*, p. 77.

[11] Le Corbusier, *Towards a New Architecture*, p. 147.

[12] Giedion, *Mechanization Takes Command*, p. 116.

[13] Le Corbusier, *Towards a New Architecture*, p. 137.

[14] William J. R. Curtis, *Le Corbusier: Ideas and Forms* (New York: Rizzoli, 1992), p. 54.

[15] Geoffrey Broadbent, *Emerging Concepts in Urban Space Design* (New York: Van Nostrand Reinhold, 1990), p. 82.

[16] *Ibid.*, pp. 90-1.

[17] Curtis, *Le Corbusier*, p. 61.

[18] *Ibid.*, p. 41.

[19] *Ibid.*, p. 41.

[20] *Ibid.*, p. 64.

[21] *Ibid.*, pp. 65-6.

[22] Fumihiko Maki, *Investigations in Collective Form* (St. Louis: Washington University, 1964), p. 8.

[23] Jonathan Barnett, *The Elusive City: Five Centuries of Design, Ambition and Miscalculation* (New York: Harper & Row, 1986) p. 157.

[24] Reyner Banham, *Megastructure: Urban Futures of the Recent Past* (New York: Harper & Row; London: Thames and Hudson, 1976), p. 17.

[25] Antonio Sant'Elia, *Messaggio sull'Architecttura* (Milan, 1914); English version (trnsl. Reyner Banham): *Theory and Design in the First Machine Age* (London: The Architectural Press, 1960), p. 129.

[26] Barnett, *Elusive City*, p. 165.
In Japan, a group of architects including Kiyonoru Kikutake, Massato Otaka, Fumihiko Maki, Kisko Kurukaw, and the graphic designer Kiyoshi Awazu published *Metabolism 1960 – A Proposal for a New Urbanism*.

[27] Kenzo Tange, in Oscar Newman (ed.) *CIAM '59 in Otterloo* (London, 1961), p. 186.

[28] Carsten Juel-Christiansen, "Project Theme: The Introductory Draft for the Assignment," *Transitions: Space in the Dispersed City* (Copenhagen, DK: The Architectural Magazine, 2000), p. 30.

[29] Michel Foucault, "Of Other Spaces: Utopias and Heterotopias," *Transitions: Space in the Dispersed City* (Copenhagen, DK: The Architectural Magazine, 2000), p. 9.

[30] Juel-Christiansen, "Introductory Draft", p. 30.

[31] Reyner Banham, *Age of the Masters*, (New York: Harper & Row, 1962, 1975), p. 51.

[32] Banham, "Primitives of Mechanized Art," p. 43.

[33] "It seem impossible to me," Banham writes, "to read the prologue to Marinetti's *Foundation Manifesto* and not be conscious of how acutely the experience of motoring was felt . . . to look at Boccioni's 'The Street Enters the House' and not see how intensely the dynamism of a mechanized city had been felt, or read Sant'Elia's views on architecture and not see how intensely he felt the surge of a new kind of building: the vision of a new kind of city."
[*Ibid.*, pp. 43-44.]