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ON MODERNISM AND MODERNIZATION: THE MODERNIST
CITY IN DEVELOPMENT, THE CASE OF BRASILIA

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ABSTRACT

This paper analyzes the model of development upon which the
design of Brasilia and most contemporary urban projects in
developing countries are based, that of the CIAM modernist
city. Proposed in Europe and the Soviet Union in the early
part of this century, the CIAM model remains the most
comprehensive theory of the modern city. Exported from
developed to developing countries, it exemplifies the
important affinity between modernism and modernization in
development ideologies. This article analyzes the basic
features of the CIAM model city, using the design of
Brasilia as its most complete example. The first section
establishes Brasilia's pedigree as a modernist city. The
second sets out the model's principles in its architectural
and historical context. It demonstrates that the modernist
city is designed as an instrument of social transformation,
in which architecture itself is conceived of as a means to
create new forms of collective association and personal
habit. The paper focuses on six major premises of the
model: (1) its anti-capitalist/egalitarian basis; (2) its
"machine metaphor"; (3) its redefinition of the social
"functions" of urban organization; (4) its development of
revolutionary building typologies and planning conventions;
(5) its environmental determinism and anti-contextuality;
and (6) its reliance on state authority, "total planning,"
and the "techniques of shock" to realize its objectives of
social change.

RESUMO

Este paper analisa o modelo de desenvolvimento sobre o qual
baseou-se o projeto da cidade de Brasilia, assim como o da
maioria dos projetos urbanos atuais em paises em
desenvolvimento; isto é, o da cidade modernista do CIAM.
Proposto na Europa e na União Sovietica no início deste
século, o modelo do CIAM permanece como a mais completa
teoria da cidade moderna. Exportado para paises em
desenvolvimento, ele exemplifica a importante afinidade
entre o modernismo e a modernização nas ideologias de
desenvolvimento. O artigo analisa as caraterísticas básicas
do modelo da cidade do CIAM, utilizando o projeto de Brasilia
como sua forma mais completa. A primeira parte estabelece a
derivação de Brasilia como uma cidade modernista. A segunda
aponta os fundamentos do modelo no seu contexto arquitetônico
e histórico. Ele demonstra que a cidade modernista é
planejada como instrumento de transformação social, no qual
a arquitetura por si só é concebida como o meio de criação
de novas formas de associação coletiva e de habitos pessoais.
O paper enfoca seis princípios importantes do modelo: (1) seu
base anti-capitalista / igualitaria; (2) sua "metáfora de
máquina"; (3) sua redefinação das "funções" sociais de
organização urbana; (4) sua desenvolvimento de tipologias

arquitetônicas e conceitos de planejamento revolucionários;
(5) seu determinismo ambiente e a sua an-ti-contextualidade;
(6) sua dependência na autoridade governamental, no
"planejamento total" e nas "técnicas de choque" para atingir
seus objetivos de mudança social.

RESUMEN

Este paper analiza en el cual se basó el proyecto de la ciudad de Brasilia y la mayoría
de los proyectos actuales en el cual se basaron en
desarrollo: el de la ciudad modernista del AML AM. Propuesto
en Europa y en la Unión Soviética a principios de este
siglo, el modelo del AML AM reaparece como la más completa
teoría de la ciudad moderna. Exportada a países en desarrollo,
en desarrollo, aquel ejemplifica un conflicto implícito importante
entre el modernismo y la modernización en las ideologías
del desarrollo. El artículo analiza las características
básicas del modelo de la ciudad del AML AM utilizando el
proyecto de Brasil como su forma más completa. La primera
parte establece la derivación de Brasilia como una ciudad
modernista. La segunda apunta las funciones del modelo
en su contexto arquitectónico e histórico, demostrando
que la ciudad modernista es el andamiaje como un instrumento de
transformación social en el cual la arquitectura urbana es
concebida como un modo de recreación, a través de formas de
asociación colectiva de hábitos personales. El paper
enfoca seis principios importantes del modelo: (1) su base
anti-capitalista igualitaria; (2) su "tabla rasa de la ciudad";
(3) su redefinición de las funciones sociales de la
organización urbana (4) su desarrollo de ideologías
arquitectónicas y conceptos de planeamiento revolucionarios;
(5) su determinismo ambiente y su anti-contextualidad;
(6) su dependencia de la autoridad gubernamental, en el
"planeamiento total" y en las técnicas de choque para
alcanzar sus objetivos de cambio social.

ON MODERNISM AND MODERNIZATION:
THE MODERNIST CITY IN DEVELOPMENT, THE CASE OF BRASILIA

Brasilia serves in this essay as a case study of the
modernist city proposed in the manifestos of the Congrès
Internationaux d'Architecture Moderne (CIAM). It
illustrates the principles, intentions and consequences of
the model of development that this type of city embodies.
Though much disputed since its inception in the 1920s and
'30s, the CIAM model remains the most coherent and
comprehensive theory of the modern city. There is as yet no
equally cogent alternative. Similarly, it remains the most
widely accepted statement on the objectives of the modern
architect and planner. Even more significant for our
purposes, the CIAM model city has been exported in toto from
developed to developing countries where it enjoys an
unchallenged status as the basis of countless development
projects, both for building new settlements and for
redeveloping existing ones. These projects exemplify an
important but little studied aspect of development ideology:
that of the "affirmative relationship," as President
Kubitschek of Brazil called it, between modernism and
modernization. As Brasilia is a textbook illustration of

this relationship in the context of CIAM planning, we may legitimately apply its analysis to the modernist model city itself, to examples of this model in other developing countries, and to the more general problem of the role of architecture and city planning in development.

This paper defines concepts central to such an analysis. It outlines basic features of the CIAM model and places the design of Brasilia within its historical and ideological tradition. The first section establishes Brasilia's pedigree as a modernist city. On the basis of formal and doctrinal evidence, it traces Brasilia's design to a new type of city proposed by avant-garde architectural groups in Western Europe and the Soviet Union. In discussing the codification of this model city, and its adoption in Brazil, the section defines what is meant by "modern architecture and city planning" and raises the problem of their role in "modernization."

The second section sets out the principles of the modernist city in its architectural and historical context. It demonstrates that the modernist city is designed as a means to transform society. The premise of this transformation is that modernist architecture itself functions as an instrument of social change by creating new forms of collective association and personal habit and by precluding "undesirable" ones. This transitive relation between architectural and social change is analyzed in terms

of a number of correlative features of the model city.
These include the development of an architecture designed to
restructure the public and private domains of social life;
the utopian and authoritarian ideology of "total planning";
and, modernist "techniques of shock" intended to raise
critical consciousness to the possibilities of a new way of
life. Thus, this paper analyzes essential features of the
model city upon which Brasilia is based to provide a
framework for evaluating the intentions and consequences of
modernism in urban development.

1. Brasilia's Pedigree

Brasilia is a CIAM city. In fact, it is the most complete
example ever constructed of the architectural and planning
tenets put forward in CIAM manifestos. From 1928 until the
mid-1960s, CIAM remained the most important forum for the
international exchange of ideas on modern architecture.
CIAM's meetings and publications established a world-wide
consensus among architects on the essential problems
confronting "the new architecture," giving special attention
to "the problem of the city" and the objectives of city
planning. Brazil was represented in the Congress as early
as 1930, and Brasilia's architects Lucio Costa and Oscar
Niemeyer have practiced its tenets with renowned clarity.[1]

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[1] For a detailed history of modern architecture and urban
    planning in Brazil, see Bruand 1981.

That the Master Plan of Brasilia derives from CIAM
proposals is easily demonstrated. Its most significant
manifesto, The Athens Charter, defines the objectives of
city planning in terms of "the four functions": "The keys
to city planning are to be found in the four functions:
housing, work, recreation (during leisure) and traffic" (Le
Corbusier [1941] 1957: art. 77). The last function,
traffic, "bring[s] the other three usefully into
communication" (ibid: art. 81). A later CIAM Congress
augmented the four to five to include a "public core" of
administrative and civic functions. Zoning, or the
"typologizing" of social activities and building forms,
organizes these four or five functions as mutually exclusive
sectors within the city. Thus, together with circulation,
zoning determines both the internal organization and the
overall shape of the CIAM model city.

Now look at the Plan of Brasilia (figures 1, 2): it is
a perfect illustration of how the zoning of these functions
can generate a city. A circulation cross of speedways
determines the organization and shape of the city exactly as
Le Corbusier ([1924] 1971:164), the guiding hand of CIAM,
proposes in an earlier publication: "Running north and
south, and east and west, and forming the two great axes of
the city, there would be great arterial roads for fast one-
way traffic" (figure 3). Residential superblocks are placed
along one axis; work areas along the other. The public core

is located to one side of the axial crossing. Recreation in the form of a lake and green belt surrounds the city. _Et voilà_ -- total city planning.

Next, compare views of Brasilia with those of two ideal cities by Le Corbusier, his "Contemporary City for Three Million Inhabitants" of 1922 and "The Radiant City" of 1930 (figures 4-13). These two projects became prototypes both for and of the CIAM model defined in _The Athens Charter_. Note the explicit similarities between the two and Brasilia: the circulation cross of speedways; the dwelling units of uniform height and appearance grouped into residential superblocks with gardens and collective facilities; the administration, business and financial towers around the center; the recreation zone surrounding the city. Brasilia's pedigree is evident.

I make these comparisons not to belittle either Costa's or Niemeyer's originality in giving final form to CIAM proposals. Every architectural project has its own history and "anxiety" of influence. Moreover, there are differences between Le Corbusier's projects and Brasilia. For example, Niemeyer's architecture is distinctively lighter and more "lyrical" than Le Corbusier's, and Costa's plan includes a "public core" -- the fifth function which had not yet been identified when Le Corbusier designed his ideal cities. Nor are these comparisons meant to imply that Costa's Plan was not the most deserving of the 26 entries in Brasilia's

national design competition.[2] They are made simply to illustrate that the same model of urban order structures these cities; that this model is described in the CIAM "rulebook"; and that Brasilia follows these rules with great clarity.

In addition to the formal evidence establishing Brasilia as a CIAM city, there is the pedagogical: both Costa and Niemeyer are Le Corbusian progeny. Le Corbusier's (and therefore CIAM's) influence on the development of modern architecture in Brazil was decisive (cf. Bruand 1981: 82-93). Between 1930 and 1945, Costa and his students systematically analyzed Le Corbusier's work and accepted it as the foundation of modern architecture in Brazil. Costa (1962: 202) called it "the sacred book of architecture." Le Corbusier's projects were available to Brazilians not only through architectural publications but most importantly through the lectures which Le Corbusier gave in São Paulo and Rio in 1929 and again in 1936. This second visit galvanized Brazilian architects into producing one of the most celebrated works of contemporary architecture in the world: the Ministry of Education and Culture in Rio de Janeiro, constructed between 1936 and 1943 (figures 14-16).

In Rio, Le Corbusier worked directly with a Brazilian team of architects on this project, headed by Lucio Costa and including Costa's students Niemeyer, Reidy, Moreira,

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[2] See Evenson 1973:117-44 for a summary of the top six entries, all of which are of the CIAM type.

Leão and Vasconcellos, all later to become prominent
architects. Le Corbusier contributed two original schemes
for the Ministry building on alternative sites. Although he
claimed paternity of the final project as well in his later
publications, the constructed Ministry is today attributed
principally to the Brazilian team. Nevertheless, it is a
"pure" Le Corbusian building. It applies with great success
the defining features of Le Corbusier's public architecture,
such as the brise-soleil sun screen; the building raised on
columns to free the ground for gardens and circulation; the
functional yet sculptural massing of volumes; the synthesis
of sculpture, painting and architecture; the glass
façade; the modern construction techniques of column
support and non-weight bearing partitions; and the location
of structures within the building lot rather than along its
edges to create an open plaza. These are exactly the
principles of architecture, along with others in the Le
Corbusian "grammar," that Costa and Niemeyer later used in
Brasilia.

The enormous international success of this building had
two important consequences for Brazilian architecture.
First, it launched Brazil's fledgling modern architects into
international prominence. Second, perhaps more than any
other cultural expression in Brazil, modern architecture
became for the government the symbol of Brazil's emergence
as a modern nation.

This symbolic association developed essentially because modernism in Brazil simultaneously broke with the past as it posited a radiant future. It expressed both a rupture with the colonial legacies of underdevelopment and a future of industrial modernity. The new architecture attacked the styles of the past -- the Iberian and neo-classical architecture that constituted one of the most visible symbols of a legacy the government sought to supercede. Instead, it demanded industrial-age building materials and an industrial aesthetic appropriate to "the new age." In planning, it privileged the automobile and the "beauty of speed" at a time when Brazil (especially under Kubitschek) was embarking on a program of industrialization especially focused on the automobile industry. Moreover, it required centralized planning -- an exercise of "state will," which appealed to the "statist" interests of the political elite. For many in this elite, modern architecture's break with history came to symbolize and, in the important sphere of public works, to constitute Brazil's own efforts at modernization.

Thus, in the government's rhetoric of development, modernist architecture was trumpeted as a most visible symbol of Brazil's "progress," "industrialization," "independence" and national identity as a "modernizing" nation. The most influential proponent of this "ontological" relation between the development of modern

architecture in Brazil and the rise of modern Brazilian
society was Juscelino Kubitschek himself, first as mayor of
Belo Horizonte (1940-45) for whom Niemeyer built his famous
Pampulha complex (cf. Braund 1981: 107-115), then as
governor of Minas Gerais (1951-56) and finally as president
(1956-61):

> I have long been aware that modern architecture in
> Brazil is more than a mere aesthetic trend, and
> above all more than the projection into our
> culture of a universal movement. It has in fact
> put at our service the means with which to find
> the best possible solution of our city planning
> and housing problems.... It is, furthermore, a
> strong affirmative expression of our culture,
> perhaps the most original and precise expression
> of the creative intelligence of modern Brazil.
> (cited in Papadaki 1960: 7)

On the basis of this "affirmative" relation between modern
Brazilian art and modernizing Brazilian society, governments
at the municipal, state and federal levels consistently used
modernist architecture and planning as one of the most
important symbols of their commitment to creating a "new
Brazil" -- an association culminating in the construction of
Brasilia.

For both the architects and the government, therefore,
modernist architecture signified a break with the colonial
past and a leap into the future. Immersed (as we shall see)
in the radical politics of modernism in Europe, the
architects interpreted this symbolic rupture as the
opportunity to break with the capitalism of that past. For
them, the anti-colonialism of modern architecture signified

anti-capitalism as well. For the government, modernist architecture also meant the effacement of the colonial past from public building projects. But for its leaders, this symbolic anti-colonialism was associated with "modernization" and nationalism and not socialist revolution.[3]

Considering Brasilia's pedigree, therefore, I use the terms "modern architecture and city planning" to denote the tenets of CIAM and its associated aesthetic, the International Style. Most specifically, I refer to Le Corbusier's formulations of them in The Athens Charter (1941) and The Radiant City (1933), and in his architectural and planning projects for "A Contemporary City for Three Million Inhabitants" (1922) and "The Radiant City" (1930). Together these constitute the core of what is popularly known as "the modern(ist) city." I also include as part of these denotations related architectural groups and styles which historians distinguish from CIAM but which share many of its basic principles. I must spend a moment justifying this inclusive and non-relativistic view of modern architecture because it will become important in determining the extent to which I can generalize from the analysis of

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[3] When I asked Niemeyer, a life-long member of the
    Brazilian Communist Party, how it was that a notorious
    communist could be consistently employed by notoriously
    anti-communist regimes, he retorted "Why is it me that
    has to answer? Those who hire me know of my ideas, and
    when they ask me to do a project it is the architect
    that interests them" (interview, August 1981).

Brasilia to other examples of modernist planning.[4]

Soviet modernism presents one case in point of a distinct architectural and planning tradition related to CIAM. I am referring to the Soviet avant-garde movements, especially the O.S.A. faction of Constructivism as it developed in the 1920s and '30s, and to the "modern functionalism" of the post-Stalin era. As Cohen (1981: 117) states: "Indeed, if there is any country where the rules set down in The Radiant City and codified in the Athens Charter have the weight of law, it is certainly the U.S.S.R." Although the Russians did not participate in CIAM meetings or manifestos, they maintained working relations with its leaders. Both groups shared many of the same basic principles in developing a critique of existing urban conditions, a comprehensive theory of the new city, and specific architectural solutions for the new institutions of industrial society; viz., for mass housing, factories, administration buildings, parks and traffic systems.

In addition, members of the two groups shared basic social and political positions, such as a radical critique of private property and "money relations"; the development of new building types, which the Russians called "social

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[4] Readers unfamiliar with the history of modern architecture and city planning may find the following introductory references helpful: for general histories -- Banham 1960, Benevolo 1977, Frampton 1982, Giedion 1941 and Jencks 1973; for manifestos and other primary documents -- Conrads 1970; for urban planning -- Benevolo 1967 and Fishman 1982; for individual "modern masters" -- Pevsner 1960.

condensers," designed to create new forms of social experience and thereby transform society; the conception of the dwelling unit as part of public services; the liberation of women from domestic servitude; and, the corporate organization of apartment blocks and neighborhood units.[5] However, they did have important differences, especially in the issue of "urbanization versus deurbanization" (see Kopp 1970: Appendix 6 and Cohen 1981: 102-8), and their mutual criticism tended to be caustic. Nevertheless, their relationship was essentially one of siblings, though perhaps not of comrades. Although Le Corbusier was not a Communist, he was continually mistaken for one by his Western critics.

I draw attention to this relationship because of the influence of Soviet architecture on Brazilian architects. This influence has been particularly significant on the architects of the "left," notably Niemeyer who is a leading member of the Brazilian Communist Party (PCB). The influence of Soviet architecture is due in part to its sibling relationship with CIAM but most especially to its explicitly revolutionary objectives. Thus, both Soviet

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[5] For a general study of the Soviet case, see Kopp 1970. Also see Kreis 1980 on the "communal house" and its restructuring of domestic organization; Cohen 1981 and Starr 1981 on the relation between Le Corbusier and Soviet Constructivism; and, Lodder 1983 on the relation of the several art forms of Constructivism (but with less focus on architecture) to modernism in Western Europe. For pre-Stalin primary sources, see Ginzburg [1928] 1982 (O.S.A. Constructivism) and Lissitzky [1929] 1970 (ASNOVA Constructivism). For post-Stalin "modern functionalism," see Gutnov et al 1968.

Constructivism and post-Stalinist functionalism provide more
than just examples of specific architectural solutions for
the Brazilians. They also provide the model of what
Niemeyer ([1955] 1980b: 55) calls "social architecture" in
"the solution of collective problems": "While in so many
countries [the architect] attends almost exclusively to the
solicitations of a minority of the dominant classes, there
[in the Soviet Union], to the contrary, his work is directed
to the great projects of urban planning which have as their
objective the common happiness and well-being."

In a complex argument which I have analyzed more fully
elsewhere (Holston n.d.:56-68), Niemeyer (ibid: 53-4) argues
that such a "social architecture" is impossible in Brazil.
This is because Brazil lacks the "social base," "great
collective plans" and "heavy industry" that are for him the
necessary pre-conditions for "social architecture."
Consequently, as a practicing architect, Niemeyer states
that he has no choice but to serve either the elite classes
or a "demagogic and opportunistic" government. However, as
a politically radical modernist architect, Niemeyer claims
that he is therefore forced to assume a basic contradiction
in his practice between his necessarily "non-social"
architecture and his political convictions. In this
contradictory situation, Soviet architecture provides
Niemeyer and others on the left with a model of the desired
alternative.

Thus, when I use the terms "modern architecture and planning," I am also referring to a broad consensus of issues between CIAM and Constructivism. I am emphasizing the structural similarities of their models of the modern city, rather than their historical differences as "movements" within the avant-garde of modern architecture.

This same consensus holds among the various factions within CIAM -- the French "formalists," the Bauhaus "functionalists," the Dutch De Stijl, the reformists and revolutionaries. For CIAM was first and foremost an international movement. Eighteen nations were represented by over 100 delegates at the 1933 meeting on "The Functional City."[6] These delegates analyzed detailed studies of 33 cities from all parts of the world except Africa and South America. Le Corbusier ([1933] 1967: 220ff.) had himself studied the problem of urbanization in these regions in his master plans for Rio de Janeiro (1929), São Paulo (1929), Buenos Aires (1929) and Montevideo (1929) in South America; and for Algiers (1931-34), Domaine de Badjara (1932) and Nemours (1934) in North Africa. Considering these studies, he later (1941) codified the results of the 1933 meeting in The Athens Charter. Obviously, the Charter represents more

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[6] Brazil has been an important member of CIAM since 1930.
During his 1929 lecture tour in São Paulo, Le
Corbusier invited the "first" Brazilian modern
architect, Ukrainian-Italian immigrant Gregori
Warchavchik, to become CIAM's South American delegate
(cf. Bruand 1981: 68). However, Brazil does not appear
to have sent a representative to the 1933 Congress.

of Le Corbusier's own version of the Congress than anyone else's. Equally obvious is the fact that CIAM was always divided into feuding groups so that its manifestos can only be read as compromise statements (see Jencks 1973: 37, for a revealing example of compromise in the 1928 resolution on the "redistribution of private property in land").

However, CIAM never pretended to represent an ideologically pure doctrine. It was based on resolutions (partially reprinted in Le Corbusier 1967: 187-89) that the delegates prepared from extensive studies and then voted upon. Rather than pure doctrine, it claimed to have achieved an international consensus on the principles of modern architecture and urban planning. The explicit purpose of CIAM was to develop this consensus among groups of different architectural and political "tendencies" -- "to express the maximum possible agreement between all the necessarily diverse tendencies represented by the very active members of such an international architectural conference: Catalan trade unionists, Muscovite collectivists, Italian fascists, and...sharp-eyed technical experts" (Le Corbusier [1933] 1967: 188). Precisely because the CIAM model city manages to unite the interests of groups that in other areas are discordant, its impact has been

global.[7]

The diversity of architectural movements related to CIAM is therefore less important for our purposes than the international consensus CIAM achieved on a basic model for the modern city. While it is important for architectural historians to study this diversity, social scientists must not think that it signifies the absence of an underlying model of the city. For in modern urban planning, such a model exists, and it is the one proposed in CIAM manifestos. As CIAM has dominated theory, practice and education in modern architecture and planning since the 1930s, it is precisely this model that has had the greatest impact on cities and their populations the world over.

We must therefore set out the principles of the CIAM model city within its architectural context. In this model, an "ideology of planning" proposes an indissoluble link between urban transformations and social transformations: between the urban model, its architectural proposals, and the socio-economic and technological premises upon which it is based. We must therefore determine what the objectives of this ideology are and how they are concretized in plans.

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[7] In the case of Brasília, this consensus produced a remarkable group of "bedfellows": it is a city planned by a "left-center liberal," designed by a Communist, constructed by a developmentalist administration and consolidated by a bureaucratic-authoritarian regime, each claiming an "elective affinity" with the city.

2. The Ideology of the Plan

> Take an airplane. Fly over our 19th century
> cities, over those immense sites encrusted with
> row after row of houses without hearts, furrowed
> with their canyons of soulless streets. Look down
> and judge for yourself. I say that these things
> are the signs of a tragic denaturing of human
> labor. They are proof that men, subjugated by the
> titanic growth of the machine, have succumbed to
> the machinations of a world powered by money. (Le
> Corbusier [1933] 1967: 341)

The CIAM city is conceived as a city of "salvation." It is

proposed as a plan for deliverance from the "tragic

denaturing of human labor" produced in and by the

metropolises of industrialized society. According to CIAM

doctrine, it constitutes a solution: a solution to the

urban and social crises attributed to the unbridled

domination of private interests in the public realm of the

city, in the accumulation of wealth, and in the development

of industry.

All of the avant-garde movements associated with CIAM

were engaged in solving the crisis industrial capitalism had

created in metropolitan organization and society. All

shared a similar analysis of the situation: having been

organized for private profit, the forces of production

"unleashed" in the Industrial Revolution had reduced

European cities to chaos by the turn of the century and had

shattered their social fabric. The radical solutions

proposed by CIAM called for the assertion of collective

action and collective rights over private interests both in

ordering the city and in managing the forces of industrial
development. They proclaimed a "New Machine Era" in which
the potential benefits of the Industrial Revolution would be
extended to all classes and in which the city would be as
orderly as an industrial assemblage.

These egalitarian and functional prescriptions for the
metropolitan crisis provided the common ground for the
numerous avant-garde groups associated with CIAM. They
established the basis of the consensus which the CIAM model
city finally achieved. As these prescriptions constituted a
political critique of the development of capitalism in
Europe, they therefore "politicized" architecture. Most of
the avant-garde movements explicitly adopted political
parties as models of action. Nevertheless, it was a
critique amenable to different political affiliations among
the "Catalan trade unionists, Muscovite collectivists,
Italian fascists, and technocrats." Consequently, the
avant-garde movements in architecture were distributed over
the available political spectrum. Most affiliated with a
"radical left" -- Constructivism and Cubo-Futurism in
Russia, Utopianism and Expressionism in Central Europe, the
Bauhaus and "Der Ring" in Germany. It was the "Der Ring"
organization of Gropius, May, Taut, Wagner and others which
represented the radical architects of Germany in CIAM (cf.
Lane 1968: 127). Yet several members of this group and of
De Stijl in Holland also associated with social-democratic
coalitions of the "left center" to build experimental

residential quarters for the working class in Amsterdam,
Frankfurt, Hamburg and Berlin (cf. Lane 1968: 87-124 and
Tafuri 1976: 109-124). Still others of the M.I.A.R.
(Movimento Italiano per L'Architettura Razionale, cf.
Benevolo 1977:564ff) embraced Italian fascism before
Mussolini himself turned away from modernism and adopted
monumental classicism as the architectural style of his
regime.

It should be understood, however, that these political
affiliations were often mercurial and ambiguous as "radical"
architects appeared at the door of whichever Authority, on
the left or right, seemed capable of implementing total
planning. "France needs a Father," Le Corbusier proclaimed.
"It doesn't matter who. It could be one man, two men, any
number" (cited in Fishman 1977: 265). Thus, hoping to find
an omnipotent patron, he wrote on the titlepage of his major
publication, The Radiant City: "This work is dedicated to
AUTHORITY." The political history of the avant-garde
movements in architecture cannot detain us here.[8] For our
purposes, what is significant is that all of these
architectural avant-gardes shared certain fundamental
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[8] Unfortunately, there is as yet no comprehensive
    treatment of the subject to which to refer the reader.
    An introductory account is given in Benevolo 1977:
    Chapter XVI. There are, however, several case studies
    which describe the political affiliations of various
    national groups. For German modern architecture and
    planning, cf. Lane 1968 and Taylor 1974; for Soviet, cf.
    Kopp 1970, Miliutin 1974 and Gutnov et al 1968; for
    Dutch, cf. Jaffé 1956; for Le Corbusier, cf. Fishman
    1977, 1982: 182-257.

premises in their evaluation of the crises of metropolitan
society. In Architecture and Utopia: Design and Capitalist
Development, Tafuri (1976: 50-124) establishes the unity of
these premises in a persuasive, if dense, argument. One,
somewhat compact, summary passage is worth quoting to
reinforce this point:

> Free the experience of shock [i.e., the "crush" of
> the big city] from any automatism [i.e.,
> passivity, alienation, anomie]; found, on the
> basis of that experience, visual codes and codes
> of action transformed by the already consolidated
> characteristics of the capitalist metropolis
> (rapidity of transformation, organization and
> simultaneousness of communications, accelerated
> tempo of use, eclecticism); reduce the artistic
> experience to a pure object...; involve the
> public, unified in an avowed interclass and
> therefore anti-bourgeois ideology: these are the
> tasks that all together were assumed by the avant-
> garde of the twentieth century.... And I must
> repeat, all together, and without any distinction
> between Constructivism and the art of protest.

From 1922 the various avant-gardes regularly held
conventions to unify their positions on modern art and the
metropolis (ibid: 95 and 95n). They managed to synthesize
such distinct theories as Dadaist anarchy and Constructivist
"decomposition" into a united front through manifestos,
publications and exhibitions.

These efforts eventually produced similar propositions
for a new kind of city. Principally through the leadership
of Le Corbusier, these in turn were synthesized into the
basic working model of CIAM. Once consolidated in this
form, it eventually became the universally accepted image of
the "modern city." It is this model that has produced

Brasilia -- one of its most complete examples, and therefore this model that we must understand. At the risk of somewhat oversimplifying its diverse historical components, I shall briefly describe its major premises. I shall focus especially on: (1) its anti-capitalist/egalitarian basis; (2) its "machine metaphor"; (3) its redefinition of the social "functions" of urban organization; (4) its development of revolutionary building typologies and planning conventions as instruments of social transformation; (5) its environmental determinism and anti-contextuality; and (6) its reliance on state authority, "total planning," and the "techniques of shock" to realize its objectives of social change.

CIAM doctrine attributes the metropolitan crisis to the interactions of two factors. First, it points to the failure to plan cities according to the requirements and consequences of the machine and industrial production. Second, it attacks the institution of private property as the primary impediment to comprehensive planning. In analyzing the interaction of these two factors, CIAM propounded an argument based on the historical development of cities under capitalism to justify its planning proposals.

The cities of the Industrial Revolution, CIAM argued, were not planned as either the production units or the administrative centers that the development of industry

demanded they become. They were organized neither by the
needs of the production process nor by an efficient,
"taylorized" cycle of industrial production, distribution
and consumption. If they have any organization at all
according to CIAM ideology (Le Corbusier 1957: arts. 72-3),
it is only that of the "ruthless" rule of private property.
As a consequence, CIAM argued that the unplanned urban
centers could not effectively manage the massive influx of
migrants drawn to industrial employment and related sevices.
Nor could they accommodate their own natural growth. Over
the course of the 19th century, the population of major
cities in Europe grew at an extraordinary rate (cf. A. Weber
1963). Both London and Paris quintupled in size. London
swelled from 860,000 to 4.2 million and Paris from 550,000
to 2.5 million inhabitants. Berlin increased 8 fold, from
200,000 to over 1.6 million. Manchester, Frankfurt,
Hamburg, Lyons, Milan and many other cities posted similar
gains at the close of the century.

To describe the effects of this phenomenal expansion on
the city, Le Corbusier developed a set of "urban disease
metaphors" in an etiology of urban chaos. The monstrous
growth of worker tenements created "cess-pools" of
tuberculosis and cholera. As the urban periphery of slums
expanded "contagiously," the city spread into the
countryside "like a disease." The sprawling metropolis lost
the coherent physical structure of a "healthy organism" it

once manifested. Instead, it showed all the symptoms of being in the final phase of a fatal malady: its circulation clogged, its respiration polluted, its tissues decaying in their own noxious wastes. As in a coroner's report, _The Athens Charter_ (Le Corbusier 1957: art. 94) concludes:

> All kinds of unpleasantness have come upon people who were unable to measure accurately the extent of technological transformations and their repercussions on public and private life. Lack of urban planning is the cause of the anarchy that reigns in the organization of cities and the equipment of industries. Because people have failed to understand the rules [of urban development], the countryside has been emptied, cities have been filled beyond all reason, concentrations of industry have taken place haphazardly, workers' dwellings have become hovels. Nothing was done to safeguard man. The result is catastrophic and it is almost identical in every country. It is the bitter fruit of a hundred years of the undirected development of the machine.

The Athens Charter attributes this "undirected development of the machine" to the dominance of private interests in collective affairs. Private interests control not only the means of production (and thereby the development of industry) but most importantly the city's resources, principally land. In CIAM's view (Le Corbusier 1957: art. 72), the second and determining cause of the urban crisis is the control the interests of private property exercise over the development of the city.

CIAM argued that under "pure" capitalism, private ownership dominates land use and thereby determines the structure of the city. Considering the growth of 19th

century cities, this conclusion is justified. Even in those
cities that have numerous public squares and parks, the
private control of public resources is evident when one
considers how the public is defined in relation to the
private.[9] The dominant public spaces in these cities are
streets and squares. Both are defined architectually and
legally by the buildings around them. Any attempt to widen
a street or reorganize a square to accommodate heavier
traffic, for example, must confront the rights of adjacent
property owners whose land will be affected. Futhermore,
real estate speculation for private profit determines the
land value of these lots and this in turn controls building
construction. Thus, the interests of private property in
housing determine the physical structure of these cities:
they not only control those holdings that are in private
hands but they restrict development in the public areas of
the city as well.

It is at this point that the conflict between private
interests and "the common good" engages the CIAM planner.
Without some form of land expropriation available to
planners, private ownership easily blocks attemps at urban
reform, not to mention comprehensive planning for
development. Therefore, The Athens Charter (ibid: art. 94)
proposes that "the soil -- the territory of the nation --

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[9] For a study of the architectural definition of the
    relation between the public and the private, see Holston
    1981.

ought to be available at any moment and at its fair value,
estimated before plans have been drawn up. The ground
should be open to mobilization when it is a matter of
general interest." In an earlier description of this
proposal, Le Corbusier ([1933] 1967: 189) characteristically
exposes the radical implications of the somewhat guarded
version presented in The Athens Charter:

> Mobilization of private property, whether built on
> or not, [is] a fundamental condition of any
> planned development of Cities.... Destruction of
> the legal system! Modification of age-old truths!
> In order to provide liberty for the individual and
> all the benefits of collective
> action...contemporary society must have the entire
> land surface of the country at its disposal. 'To
> have at its disposal' does not mean doing away
> with private property, or stealing, or
> depredation. It means improving the assets
> represented by our land for the benefit of
> mankind. Let the lawyers find a way!

As this statement makes clear, CIAM ideology never
espoused the abolition of private property, only its
redefinition. While this redefinition is never fully
specified (a lawyer's task), its outline is nevertheless
evident. It entails redefining the concept of ownership in
land. Although residents in the CIAM city would have the
right to buy and sell land, the state would hold the
ultimate rights over land alienation. This right would be
exercised by the planning authorities of local government in
accordance with a national policy of land development. Land
would be "redistributed" (Le Corbusier's term) from the
private domain to the public in cases of conflict between

the "development of the common good" and private interests. Expropriated owners would receive payment at a market value determined by the state and not real estate speculation.

Thus, in contrast with the capitalist view of land as disposable real estate, the CIAM proposals consider both urban and rural land as, ultimately, inalienable state patrimony. This redefinition does not abolish private property but it does remove the right of disposal in certain circumstances from the bundle of rights associated with land ownership. The other rights of ownership remain. CIAM doctrine also stresses that ownership is a right ultimately legitimated by the state as part of its collective organization. On the basis on this legitimation, CIAM proposals justify the right of planners to intervene in matters of land tenure when "the benefit of mankind" is at issue.

Thus, the "mobilization" of land is at the basis of several key ojectives in CIAM planning. First, CIAM planners believed that "mobilization" would abolish the ultimate power of private interests to block planning initiatives (Le Corbusier 1957: art. 73). Without property restrictions, planners would thus be able to assume, as the foundation of their plans, a position of unchallenged authority over the destiny of the city. CIAM planners argued that as a result, their urban plans would become blueprints for development, based on this presumed ability

to control the future through action guided by rationality and centralized authority. Second, CIAM planners wanted to "mobilize" the land in order to establish a regional development policy, incorporating city and country into their comprehensive plans (ibid: art. 77). Third, they insisted that "mobilization" would curtail the pernicious effects of real estate speculation in the city (ibid: art. 72).

By controlling speculation, CIAM planners proposed that they would be able to distribute urban resources on the basis of factors other than wealth. The basis of this distribution would in effect be the master plan of the city itself, which would allocate the advantages of collective organization -- such as housing, recreation, education and health facilities -- to all classes of residents according to objective and rational criteria. As a result of this egalitarian distribution, CIAM argued that the modernist city would achieve an ultimate goal: it would be a city neither socially nor spatially stratified into "money classes." It is therefore evident why "mobilization" was a key proposal of CIAM: not only would it supposedly establish the conditions for a "classless" city (an ultimate political objective), but moreover this would be a city in which the planner's master plan is the absolute basis of urban order, and the planner its arbiter.

However, land expropriation for public use was not a new issue. It had its origins in the very beginning of urban planning legislation in France and England, and it is important to see how the CIAM proposals for urban reorganization differ from this legislation. The phenomenal growth of unsanitary housing in both countries during the 19th century had led to numerous legislative attempts beginning in the 1830s to regulate the private ownership and construction of tenements (cf. Benevolo 1967: 85-104). Social reformers and sanitation specialists pioneered these bills, seeking to make ownership in real estate accountable to minimum standards of health and welfare set by the state. Inevitably, these entailed a restriction of the rights of property ownership through government intervention in one form or another.

Until the late 1840s, liberal bourgeois opposition to state interventio n and, from a different perspective, defenders of "the rights of citizens" combined to defeat these proposals. But successive cholera epidemics in Paris and London during the 1840s finally necessitated immediate action on the governmental regulation of unsanitary housing. In England, the Public Health Act of 1848 was the first in a series of such regulations, culminating in the Housing of the Working Classes Act of 1890. These laws empowered a variety of government commissions to hold landlords responsible for the sanitary conditions of their dwellings.

They established the right of health inspectors and planners
to levy fines, taxes, and "property improvement rates," to
have free access to property to inspect and condemn, and
finally even to requisition property. In France, the laws
of 1841 on public works and of 1850 on slum housing went a
step further. They gave the Municipal Council, through the
courts, the necessary authority for the compulsory
acquisition of land.

Devised for public works and slum clearances, these
French laws were amended in 1852 to give the executive
institutions of government the power to expropriate land
without recourse to the courts. It was this ensemble of
legislation, especially the acquisition of land by executive
order, that enabled Baron Haussmann to realize his profound
transformation of Paris in the following two decades. In
the second part of the 19th century, laws similar to these
were enacted in Belgium, Austria, Spain, Italy and England,
giving the state the power to carry out large-scale planning
operations. From these executive powers came the spate of
enormous public building projects that transformed European
capitals: Paris (1853-69), Brussels (1867-71), Barcelona
(from 1859), Florence (1864-77), the building of the
Ringstrasse in Vienna (from 1857) and the installation of a
main drainage system and foundations for the underground
rail in London (from 1848).

It cannot be doubted that this "haussmannization" of European capitals greatly influenced CIAM planning. Le Corbusier (1967: 209-11) admired the Baron for bringing a measure of geometrical order to Paris and for using a scheme of broad avenues to unite isolated areas of the city -- two paramount principles in CIAM doctrine. Haussmann himself provided a model for the CIAM planner: technocrat, engineer, "surgeon"; incorruptible, autocratic. Furthermore, Haussmann established a rationale for large-scale planning that CIAM adopted. He justified his surgical incisions through workers' quarters as measures necessary to endow urban centers with "space, air, light, verdure and flowers, in a word, with all that dispenses health" (Haussmann 1890: quoted in Vidler 1977, p.91). This "justification" is nearly identical, word for word, with CIAM's own explanation for its even more comprehensive "greening of the city" (Le Corbusier 1957: art. 12). Just as Haussmann had done, CIAM (ibid: arts. 8-17, 23-40) adopted the technical, technocratic and moral justifications of public works legislation (issues of sanitation, housing, and state intervention) for its radical transformation of the 19th century city.

However, CIAM's planning proposals go far beyond 19th century legislation in several crucial ways in developing a comprehensive program for urban reorganization. In the first place, building sites acquired and improved at public

expense under 19th century legislation did not remain public property after improvement. They were restored to their original owners (Benevolo 1967:135). As Haussmann himself protested, these improvements resulted in enormous capital gains for the original landlords at the expense of the city.

In CIAM planning, expropriated sites would be purchased _before_ improvements and would remain public property after redevelopment (Le Corbusier 1957: art. 94). Thus, as the government redeveloped the city, more and more of it would become public and less private. Eventually, a new kind of entirely public city would emerge as the end-product of CIAM development planning. In this situation (as in fact initially occurred in Brasilia), citizens' rights to hold housing property need not be abolished because they simply become irrelevant.

In the second place, the "haussmannization" or evisceration of the central quarters of numerous European cities did not solve the problem of mass housing or provide for the kind of egalitarian distribution of urban resources CIAM proposed. In fact, it had just the opposite intent and effect: that of securing the city for the rich by marginalizing the poor. These large-scale planning projects "solved" the housing problem of the working classes by exiling them to the periphery. The broad avenues cut through working class neighborhoods were surgical incisions designed to remove "the dangerous classes" from the hub of

the city. Engels (1872: 74-5) did not fail to recognize the
true class intentions of Haussmann planning: "Breaking
long, straight and broad streets through the closely built
workers' quarters...turn the city into a pure luxury
city.... The scandalous alleys and lanes disappear to the
accompaniment of lavish self-praise from the
bourgeoisie...but they appear again immediately somewhere
else." Furthermore, while these avenues did bring a measure
of fresh air into the city, their broad dimensions were
calculated to facilitate military maneuvers against the
barricades of working class rebellions -- an urban planning
"lesson" learned in the wake of successive Parisan revolts.

It is true that Le Corbusier's 1925 Plan Voisin for
Paris (based on his first ideal city of 1922) proposed a
"haussmannization" on a scale not even Haussmann imagined.
In the Plan, the managerial elite of this new Paris occupy
the center while the working classes have been "removed" to
outlying satellite suburbs. Just as Engels had attacked
"haussmannization" as an instrument of class oppression,
French Communists condemned the Plan Voisin as Fascist (as
Brazilian Communists would later do in response to Costa's
plan for Brasilia). They argued that it presupposed a
centralized authoritarian government run by an elite corps
of capitalists and managers, and that its center-satellite
organization unabashedly represented stratified class
distinctions.

However, between 1925 and 1930, Le Corbusier underwent a political _crise de conscience_ (cf. Fishman 1982: 205-34). He became disillusioned with the kind of bourgeois rule such projects presumed. The "Radiant City" of 1930-35, the prototype of _The Athens Charter_, abolishes the satellite system and incorporates all classes within the city. In theory, it distributes its collective benefits to all residents. We should remember that this "radiant" and "classless" model is the one adopted for the Master Plan of Brasilia, which similarly specifies that all inhabitants live within its residential units (Costa 1957: art.17). Thus, Le Corbusier ([1933] 1967: 13) could argue that the objective of urban planning is a city without classes: "I had created the prototype of a _classless city_, a city of men busy with work and leisure in surroundings that made these possible." However, it remains to be seen whether in fact Le Corbusier's "radiant" projects (or Lucio Costa's) do not require the same type of authoritarian rule and do not have the same class stratifying effects as Baron Haussmann's.

Thus, CIAM planning proposed to solve the urban crisis of capitalism by adopting the technical and rational arguments of public health legislation in the context of a comprehensive strategy of public works. As we have seen thus far, it expands this strategy in two ways. First, it considers the entire planned city as a state-sponsored public domain. Second, it proposes to distribute the

benefits of this collective organization on the basis of a master plan for development.

In yet a third way, CIAM reconceived this strategy of public works. The discourse of urban reform in the 18th and 19th centuries was often presented in terms of a metaphor of disease in an analogy between cities and the human body: the city was a diseased organism which required radical "surgery" in the form of planning "operations" to "cut open" its afflicted parts, to make "incisions" with broad avenues through "congested" quarters, to rehabilitate the city's "lungs" with new parks (cf. Vidler 1977: 38-42, 68-96 on these medical analogies). As we have seen, Le Corbusier also adopted this rhetorical device of describing cities as malignant growths. However, CIAM based its planning prescriptions not on a model of the organism but on a model of the machine.

In CIAM's analysis, the solution to the "crisis of the machine" is to be found in the machine itself. If the machine had destroyed the cities of the First Machine Age (1730-1930), it would be the salvation of the cities of the Second. Nearly all of the avant-garde movements viewed the machine as a potential source of tremendous liberation: "The machine, that vast modern event, will be seen [in the "Radiant City"] for what it really is, a servant and not a ruler, a worker and not a tyrant, a source of unity and not of conflict, of construction and not of destruction" (Le

Corbusier 1967: 176). In this prognostication, the machine

would liberate society from the drudgery of manual labor,

freeing women especially from domestic slavery and giving

both men and women a new measure of humanity. Moreover, in

this view, the machine destroys class and national

boundaries. It creates international and interclass

communication; it is an equalizer, a vehicle of social

progress. For society to realize these benefits, cities

must be planned "in harmony" with the development and use of

the machine.

The simplest way to do this, CIAM proposed, would be to

treat the new city itself as a machine; that is, to plan it

as an engineer plans an industrial process by conceiving of

the city as an industrial product. This new city would be

organized not as a metaphor of the machine but quite

literally as a machine, a "machine for living in" (as Le

Corbusier once described the house). In this organization,

the city would be broken down into its essential functions.

These would be "taylorized," standardized, rationalized,

assembled. Thus, the comprehensive scope of modernist

planning derives from thinking of the city as a machine.

For a machine is never partially designed or partially

constructed; only its completeness guarantees its

functional, working order.

In these machine-cities, the architect no longer

designs individual objects. Instead, the architect

organizes these objects into processes -- into functions, interrelations and communications, and plans their future development. Only through this kind of comprehensive planning in which the city is ordered as an industrial assemblage, could its complexity be controlled and could the potential benefits of the machine be extended to all classes of residents. Thus, the CIAM city took as its organizational model the very event which had destroyed pre-industrial cities: the machine itself.

The purely technical arguments which the modernists developed to justify their planning proposals thus derived in part from public health concerns and in part from the model of the machine in industrial production. This constellation of technical arguments, moreover, is linked to a comprehensive reassessment of the "functions" of the city. The model of the machine entails not simply breaking the city down into its essential functions, but more significantly it demands reorganizing and at the same time reconceptualizing these functions. It is at this point that CIAM's notion of the "four functions" of urban planning becomes crucial. As we have seen, CIAM proposes that the essential functions of the city are four: housing, work, recreation and traffic. It proposes to relate these functions through a master plan which will ensure that each one performs its assigned tasks in harmony with the others, as the gears of a machine do. But it does much more than

just provide a blueprint of functional order. It cannot simply accept the identity of these functions as they had developed in the chaos of 19th century cities.

The new architecture therefore set out to redefine systematically the social basis of each function. It does not simply redesign apartment buildings; it proposes to restructure domestic organization and the family as an economic unit. In completely separating pedestrian and vehicle, it not only abolishes streets, it moreover eliminates the type of urban crowd and public activity streets support. In planning "a city in a park" of playing fields and gardens, it does not simply "green" the city; more significantly, it proposes a new focus for the displaced public activity of streets. The design of modern factories, commercial facilities and super-highways reconceives the relationship between residence, work and commerce, and between market and market place. Together, these redefinitions constitute a program of social change in which the institutional structures that had previously characterized each function are radically transformed.

Corresponding to these redefinitions, CIAM architects developed a set of equally revolutionary building types and urban structures. They were motivated by the central idea in architectural modernism that the creation of new _forms_ of social experience would actively transform society. They viewed architectural innovation as precisely the opportunity

to create such new forms of experience. "The introduction
of new building types into the old fabric of the city
affects the whole by transforming it" (Lissitzky 1970:52).
The units of habitation, buildings sited in the middle of
continuous open spaces, transparent glass façades,
gardens on rooftops, avenues without intersections, the
"free plan," are all, in this modernist ideology,
instruments of social progress. They are designed to
transform society through the medium of architecture by
forging new forms of collective associations and personal
habits and by precluding the "undesirable" ones.

One of the clearest statements on the new architectural
typology as a medium of social transformation is found in
the O.S.A. Constructivist manifesto of 1928 (Kopp 1970: 94):

> We are opposed to such prerevolutionary building
> types as the speculative apartment house, the
> private residence, the "noblemen's club," etc.,
> all products of prerevolutionary social,
> technical, and economic circumstances, but still
> serving as a model for buildings now being erected
> in the U.S.S.R.: [instead we propose] new types
> of communal housing, new types of clubs, palaces
> of labor, new factories, etc., which in fact
> should be the conductors and condensers of
> socialist culture.

Architecture as "the conductor and condenser" of a new way
of life -- this is a metaphor drawn from the model of the
machine. These "social condensers" would transform human
nature as electrical condensers transform the nature of
current, turning the bourgeois individualist and the
denatured laborer of capitalist society into fully developed

members of the socialist collective. Modern architecture

therefore is not only or even most fundamentally an

"argument" for a new technology in building construction.

Its new building typologies and planning conventions were

developed as instruments of social change.

In this theory of architectural "condensation," the

assemblage of "social condensers" produces a _total_

environment for the future society. It is a doctrine

characterized by a type of environmental determinism in

which there can be no half measures or partial solutions to

the crisis of industrial or industrializing society. One of

the most distinctive features of CIAM architecture is that

it refuses any accommodation whatsoever to existing urban

and social conditions. The break with the past must be

absolute. This anti-contextualist ideology is readily

evident in _any_ modernist urban planning project. If we

take, for example, Le Corbusier's (1967: 206-7) Plan Voisin

for the reconstruction of central Paris or Hilberseimer's

(Rowe and Koetter 1978: 95) 1927 project for central Berlin,

we see that in both an enormous area of the city has simply

been leveled to make room for the insertion of a new and

complete environment (see figures 17, 18). The contrast

between the old city and the new could not be greater.

Their opposition is one of total antagonism. The one is the

complete inversion of the other in every architectural

detail.[10]

With the few exceptions of cities actually built _de novo_, the modernists rarely had the opportunity to carry out their projects on such an apocalyptic scale. Most of their built work exists in the form of single buildings. But even in these, it is clear that each is but a fragment of a total vision, of an unrealized totality. The principle of totality is fundamental to the modernists' project of creating "social condensers" because the very totality of these new environments permits no escape from what is essentially a forced conduction to radical changes in social relations.

How is this "conduction to change" possible? In large measure, it relies on the techniques of shock. The elements or conventions that compose the new architectural order constitute what we may call a strategy of defamiliarization. This strategy was central to all of the avant-garde movements in the arts during the formative period of modern architecture. It is essentially a concept of perceptual renewal and change (cf. Jameson 1972: 50-91). The Russian Formalist, Viktor Shklovsky, defined defamiliarization in art as the technique of making objects strange (_ostranenie_) so as to renew perceptions of them. It is a means of breaking through the deadening and mechanical habits of daily routines in order to desacralize unquestioned values,
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[10] The modernist inversion of preindustrial city planning conventions is analyzed in Holston 1981.

to restore conscious experience and generate a critical reappraisal of the objects and institutions around us.

Furthermore, Shklovsky characterized modern art as precisely that which deliberately draws attention to its own techniques of defamiliarization. As he put it, modern art forms deliberately "bare" or reveal their own devices for making the world strange so as to call attention to the processes of constructing and changing meaning. Brecht (ibid: 58) developed a similar notion in his theory of the "estrangement-effect" (Verfremdung). The purpose of this estrangement and of "baring" its devices in art is to show us that society is not a "natural" given but itself the result of historical change and therefore changeable.

The techniques of shock which the avant-gardes developed to raise critical consciousness include inversion, arbitrary juxtaposition, de-contexualization, decomposition and deconstruction. The theories of shock abound: Dadaist anarchy, Surrealist objective chance (le hasard objectif), De Stijl decomposition, Constructivist deconstruction, and Le Corbusier's objects in poetic reaction (objets à réaction poétique). As modern architecture is a synthesis of several art forms (e.g., sculpture, painting, graphics), it drew from a large repertoire of such theories and techniques of shock -- a combination brutally effective on the inhabitants of modernist projects.

In modern urban planning, the strategy of defamiliarization is designed to "make the city strange." It consists in the attempt to impose a new urban order through a set of architectural conventions that negate previous expectations about urban life. The objective of such negation is to restructure society by brutally shocking new urban habits into being. The modernists viewed the capitalist city as architecturally organized by discriminations between the public and the private and by distributions of wealth that had to be totally changed. In response, they developed a number of formal conventions to produce a new type of city in which such discriminations would be effaced from architecture. For example, the "curtain wall of glass" is such a convention. An all-glass façade exposes the private domain, previously concealed behind walls, to public scrutiny. Glass transparency dissolves an opposition between private and public, and between inside and outside, that had in the past been fundamental to the the concept of "façade."

Such conventions were intended to impose a totally planned city, and therefore a totality of perceptions, in which the "targeted" social distinctions would no longer be discerned simply because they would no longer be the focus of architectural design. By rendering them architecturally illegible, the utopian plan would render them socially irrelevant.

3. Conclusion

CIAM ideology considers the link between architectural
innovation, perceptual change and social transformation as
indissoluble. Although innovation develops through the
search for architectural forms that "condense" new types of
social experience, modernist doctrine essentially views the
relationship between architecture and society as transitive:
change the architecture and existing society will be forced
to follow the program of social change that the architecture
represents.

In this "transitive prescription" for the metropolitan
crisis, the planning of CIAM becomes decidedly utopian. The
utopian factor in the CIAM model of the city-as-machine
rings clearly in the words of the grand master, Le Corbusier
(1967: 143): "On the day when contemporary society, at
present so sick, has become properly aware that only
architecture and city planning can provide the exact
prescription for its ills, then the time will have come for
the great machine to be put in motion."

The "great machine" of modern architecture is not
merely a technological transformation of the city. The
great machine is essentially a strategy for creating a new
type of urban public. It is a utopian strategy precisely
because it attempts to produce a "collectivity" in which
private property would no longer be the basis of public
order. Instead, the utopian plan calls for a redefinition

of the public and private functions of urban organization in capitalist cities. Its objective is to restructure the institutional relationships between the public and the private domains of social life so that they are both entirely regulated by a comprehensive, state-sponsored master plan. This project amounts to a proposal for transforming the social structure of capitalist society itself. For in the state-regulated city of the plan, the very distinctions between the public and the private disappear because the master plan eliminates private property as an institutional basis of either domestic or urban organization. The resulting utopian city is therefore entirely "public."

As the foregoing analysis of CIAM planning suggests, the modernists proposed to implement this reconstruction of society through two types of transformations in their planned cities, the one institutional and the other architectural. The first essentially consists in what I call a displacement of social institutions traditionally centered in the private domain -- such as property, residence, domestic organization, child and health care, and education -- to a new state-sponsored public sphere of collective services, residences, associations, social clubs and administrative councils.

The CIAM model proposes this displacement by redefining the institutional basis of the "four functions" of urban

order (residence, work, recreation and circulation). As I have described elsewhere for the case of Brasilia, the model's basic proposals displace the regulation of each function from the private sphere of social relations to the public sphere of social services. This institutional displacement is intended to maximize the role of the state's corporate domain and to minimize that of the familial domain in social organization. In the utopian plan, this displacement would render traditional distinctions between the public and the private socially irrelevant.

At the same time, the utopian plan would render these distinctions architecturally illegible. This "disfigurement" constitutes the second strategy for creating a new type of urban public. It consists in transforming the nature of the capitalist city through a set of building types, urban structures, and architectural conventions that negate its established way of life. These "social condensers" are designed to "shock" the new society into being. They impose the new urban order as a _totality_ of perceptions in which the traditional identifications between what is public and what is private are no longer legible in architecture because discriminations between them are no longer the focus of architectural design. In the modernist city, the CIAM master plan achieves its total and totalizing order precisely by translating its objectives of institutional displacement into conventions of architectural defamiliarization.

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1. Plaza of the Three Powers
2. Esplanade of the Ministries
3. Cathedral
4. Cultural Sector
5. Entertainment Sector
6. Banking and Office Sector
7. Commercial Sector
8. Hotel Sector
9. Radio and TV Tower
10. Sports Sector
11. Municipal Plaza
12. Barracks
13. Railroad Station
14. Warehouses and Light Industries
15. University City
16. Embassies and Diplomatic Missions
17. Residential Sector
18. Single-family Houses
19. Horticulture, Floriculture
20. Botanical Garden
21. Zoo
22. Golf Club
23. Bus Station
24. Yacht Club
25. Presidential Residence
26. Jockey Club
27. Area for Fairs, Circuses, etc.
28. Airport
29. Cemetery
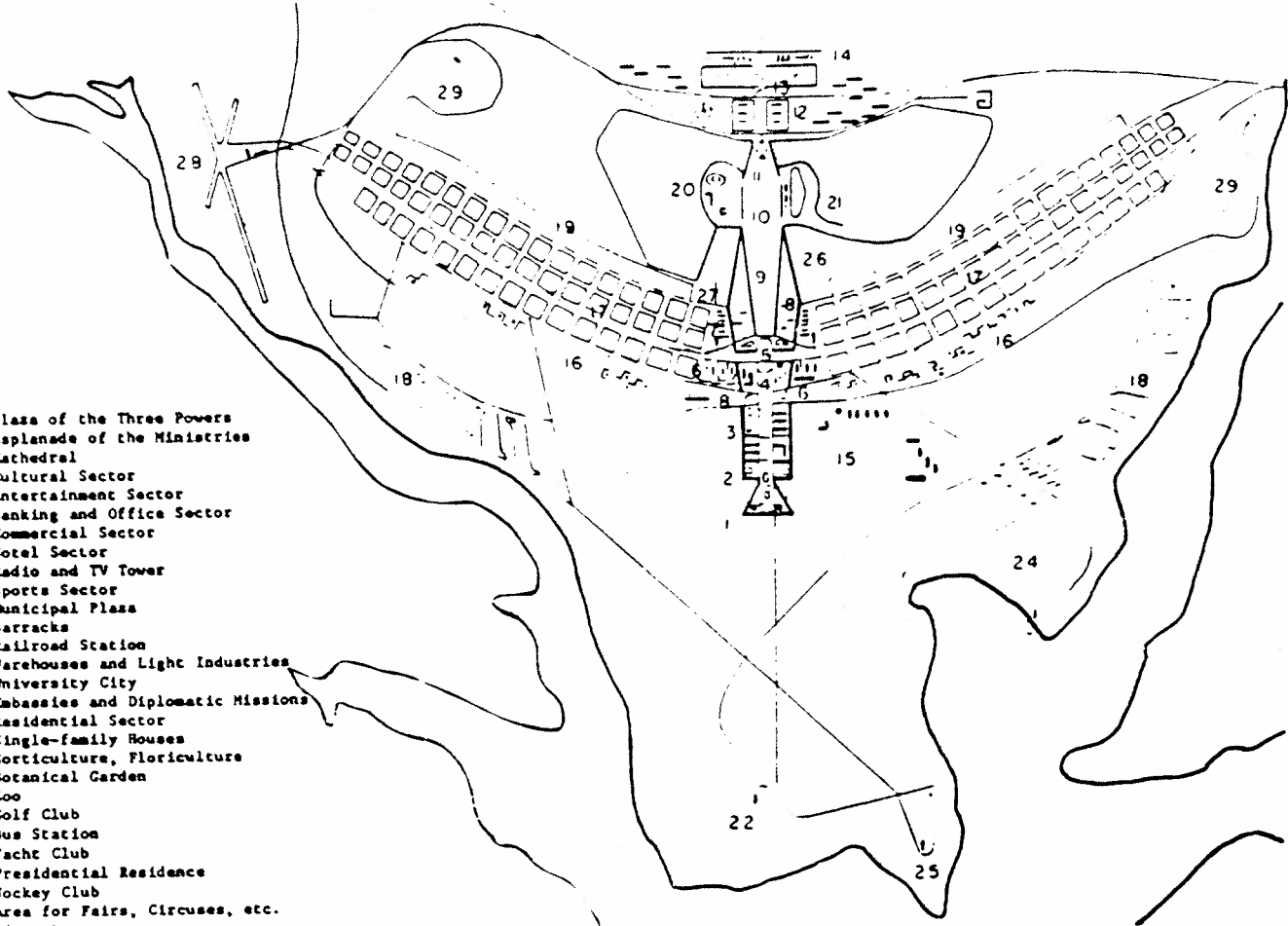
1, 2. Lucio Costa: Brasilia, master plan and perspective sketch, 1957.

3. Le Corbusier: A Contemporary City for Three Million Inhabitants, perspective, 1922
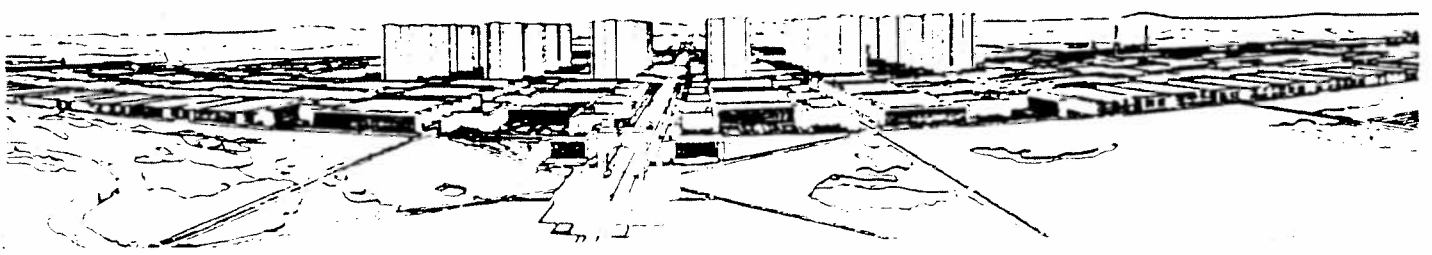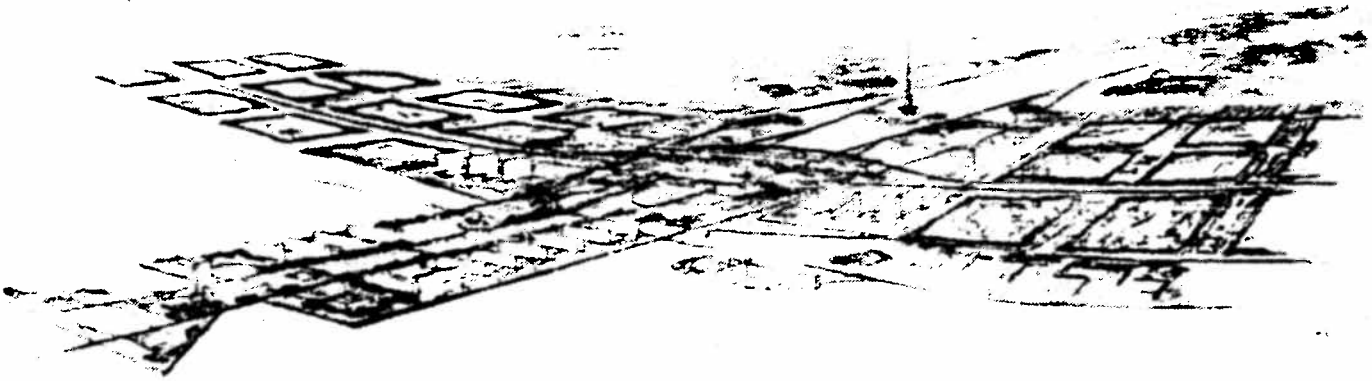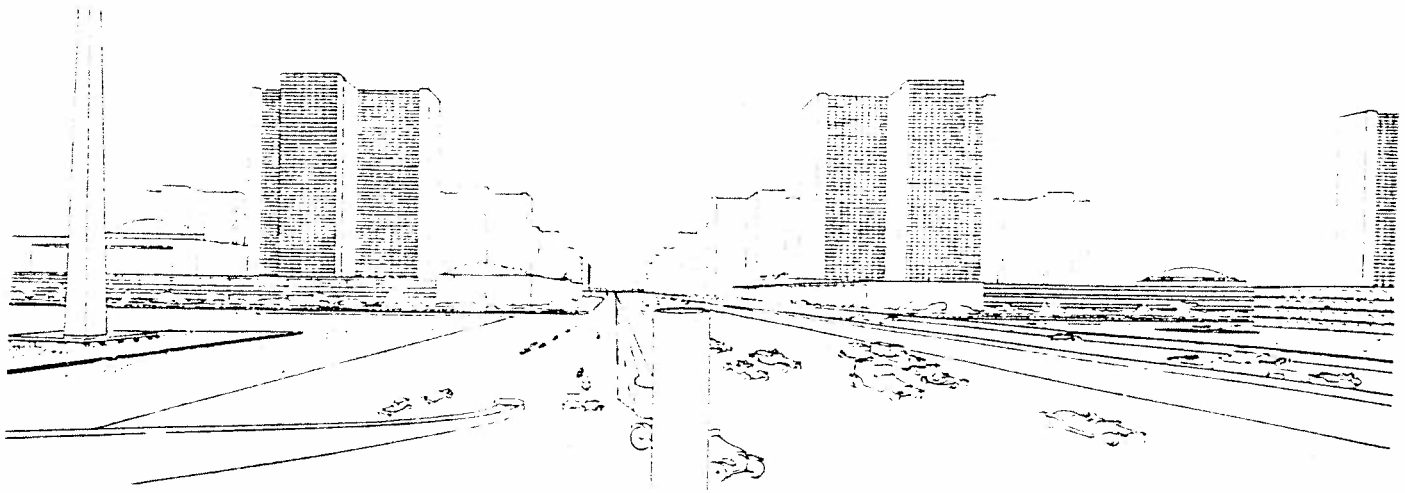
"The 'City' seen from the 'great arterial' freeway. To the left and right, the Administration Buildings. In the background, the museums and universities. One sees the ensemble of skyscrapers bathed in light and air."

"A 'street' running along an 'indented' group of dwellings (6 double storeys). The indentations create a unique architectural impression, a far cry from the typical 'corridor streets.' Every window of each apartment (on both sides) opens out towards the park."
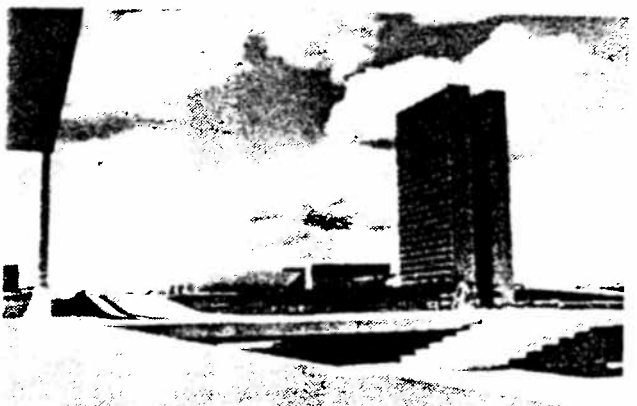

4, 5. Le Corbusier: A Contemporary City for Three Million Inhabitants, perspectives, 1922.

6. Brasilia: South Wing, aerial view, 1981.

7. Brasilia: crossing of Residential and Monumental Axes; Bus Terminal, Platform and Entertainment Sector, aerial view, 1981.

8. Brasilia: Monumental Axis, view of the Congress and the Esplanade of the Ministeries from the Supreme Tribunal in the
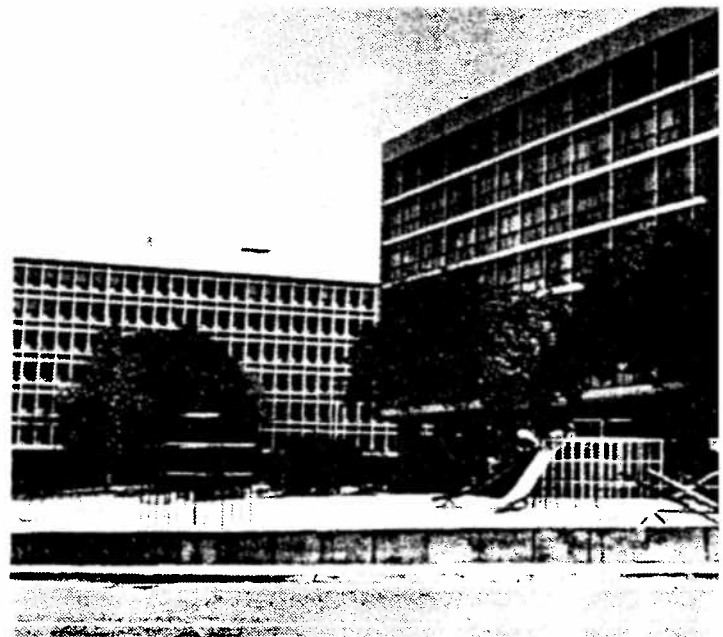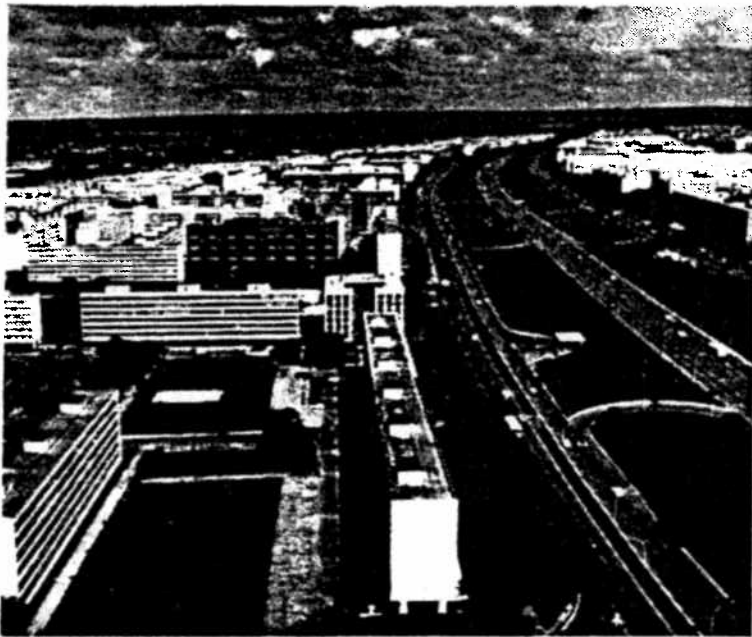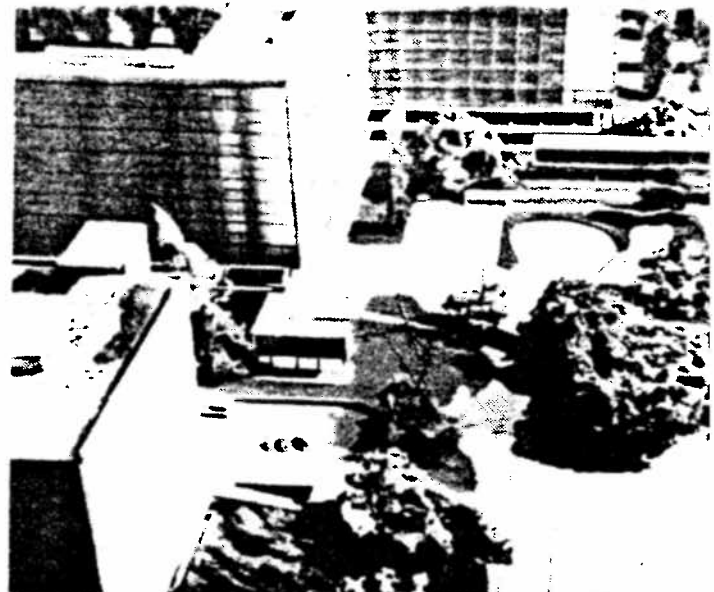
9, 10. Le Corbusier: The Radiant City,
model showing residential sector, 1930.
"In zones of habitation such as this,
streets have no excuse for existing. The
city has become a green city. Buildings
used by children are situated in parks.
Adolescents and adults can play outdoor
games right outside their dwellings.
Separation of pedestrian from automobile."

11. Brasilia: South Wing, view of the
residential sector, 1981.

12. Brasilia: Superquadra 108 South, view
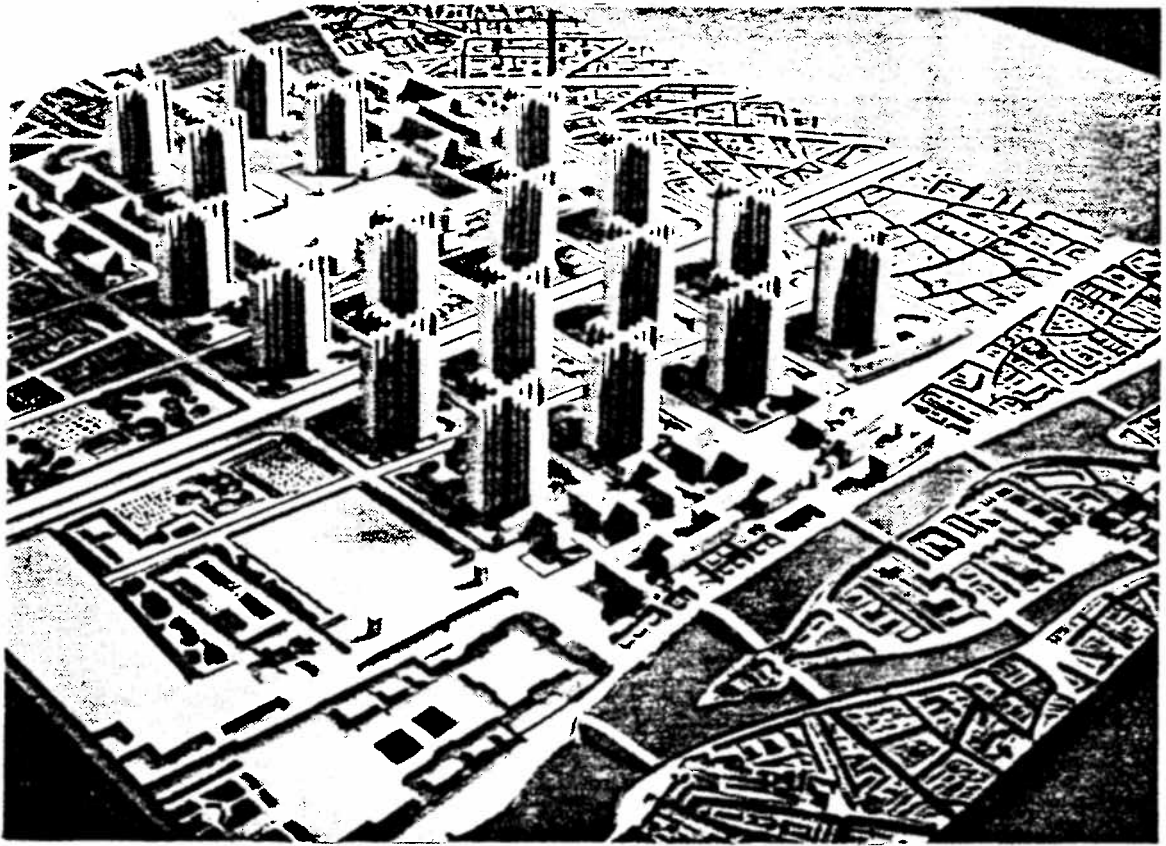of housing blocks and playground, 1980.

13. Brasilia: South Wing Superquadras 308
307, 108, 107, aerial view, 1981.
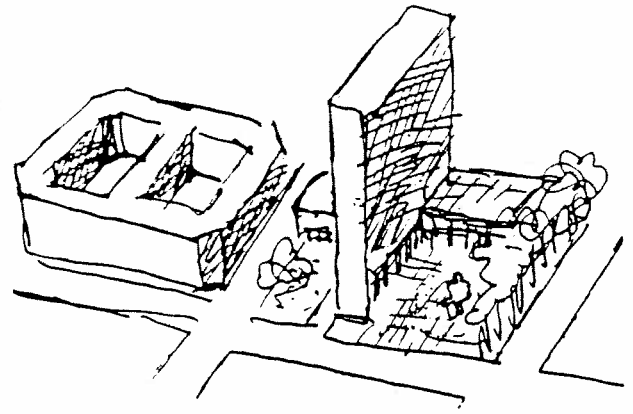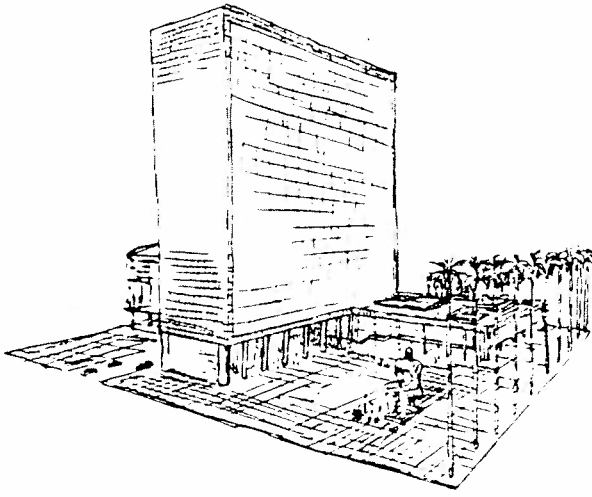
14, 15. Le Corbusier: second project for the Ministry of
Education and Culture, Rio de Janeiro, 1936. Note differen
in fig. 15 between "traditional" and modernist city-block.
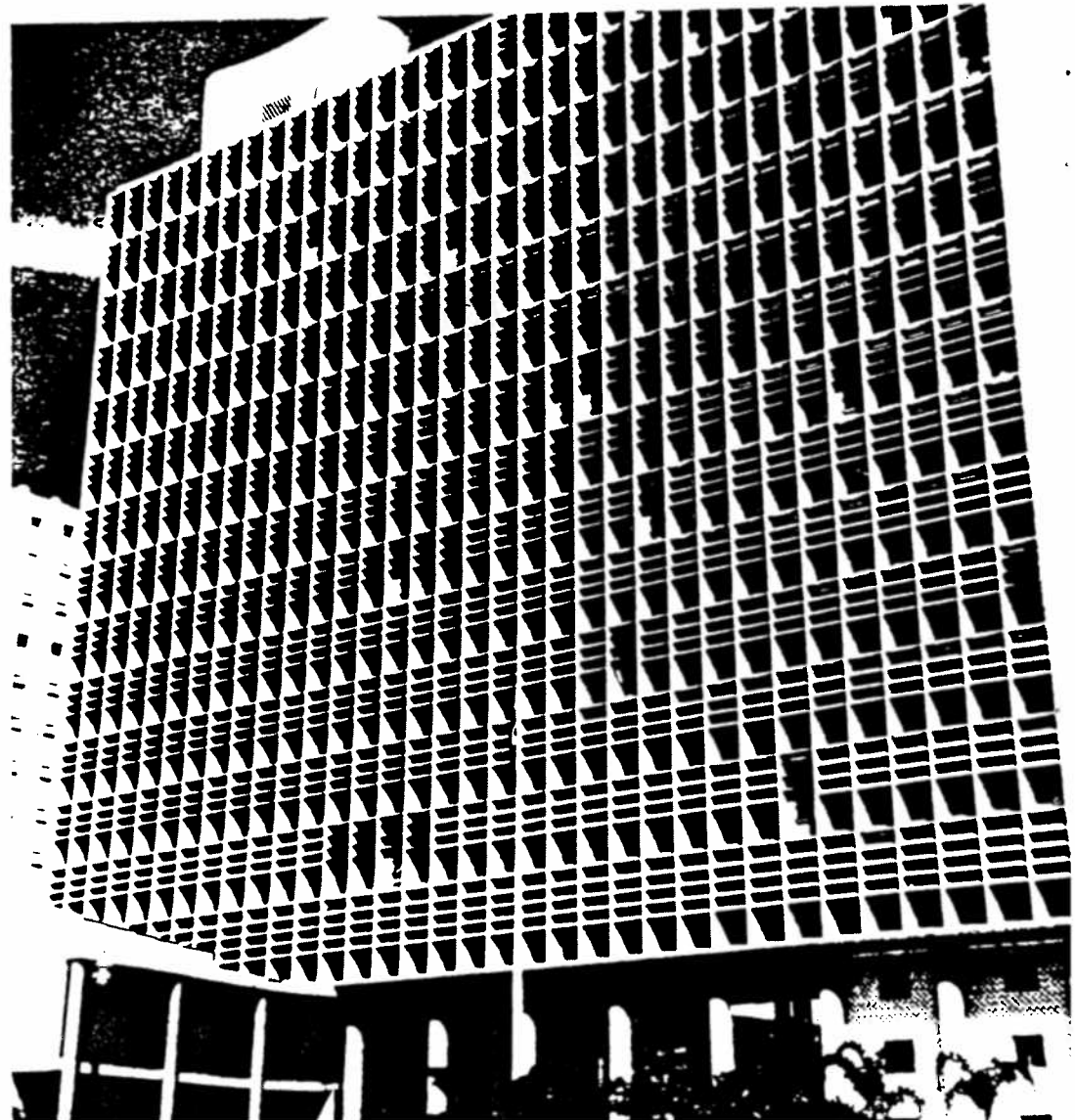
16. Ministry of Education and
Culture, north elevation, Rio
de Janeiro, 1937-3.

17. Le Corbusier: Paris, Plan Voisin, 1925.

18. Hilberseimer: Project for Central Berlin, 1927.