CONTENTS

General Editor's Preface 6

THE CRITICAL ORDER 7

REGULARIZATION 15
  The Plan of Haussmann 15
  Other Examples 20
  The Urban Park From Paxton to Olmsted 22
  Paxton's Great Victorian Way and the London Underground Railway 24
  Commentaries and Meta-language 25

PESDURBIA AND REDUCED BEHAVIOR 27
  Residential Towns and Villages in the Suburbs 28
  Workers' Towns, Colonies, and Villages 29

PRE-URBANISM AND URBANISM: THE PROGRESSIST MODEL 37
  The Progressist Model—Pre-urbanism 37
  Progressist Urbanism 99

PRE-URBANISM AND URBANISM: THE CULTURALIST MODEL 102
  Pre-urbanism 102
  Urbanism—Camillo Sitte 104
  The Ambiguities of the Garden City 107

CONCLUSION 108

Illustrations 33
Notes 111
Bibliography 116
Chronological Chart 121
Index 126
Sources of Illustrations 128

Translated by Marguerite Hugo and George R. Collins

© 1969 George Braziller, except in U.S.A.
All rights reserved
For information address the publisher:
George Braziller, Inc. One Park Avenue New York, N.Y. 10016
Standard Book Number: 0-8076-0520-4
Library of Congress Catalog Card Number: 77-90108
Book design by Jennie Bush
Jacket design by Toshio Katayama
Printed in the United States of America
Second Printing
GENERAL EDITOR'S PREFACE

Although we face unique urban problems in our day, many of the strengths and weaknesses of our present cities have been inherited directly from the nineteenth century. Much has been written about the impact of the Industrial Revolution on urban centers, so François Choay is inevitably dealing with many familiar issues in this book. Her analysis of nineteenth-century theory and practice with respect to the regularization and planning of cities has, however, a novelty about it which should permit us to see the accomplishments and frustrations of that century in a different light than usual.

This volume is part of a series of books on cities and planning. It is our intention to deal with a number of epochs, areas, theoretical positions, and individual planners. While the emphasis is on the physical condition or design of towns and cities, we have tried to enlist authors who are concerned with the social, economic, and political forces that are essential to an understanding of architectural and urban form.

It is our hope that a series of concise, illustrated volumes on various aspects of cities and planning will, by the very different attitudes and assumptions of our several authors, fulfill a need and provide a complement to the more encyclopedic survey books that exist in various languages on the history of architectural city planning.

G.R.C.

THE CRITICAL ORDER

We are essentially children of the 19th century, however passionate our revolts or disavowals, however profound our discouragement. Fernand Braudel

The terms urbanización, urbanisme, town-planning, Städtebau, which are used today to designate indiscriminately all forms of city planning from ancient to modern, were, in fact, formulated for the first time during the second half of the nineteenth century. Originally they were intended to mark, with the full impact of a neologism, the advent of an entirely novel relationship between Western man and the organization of his cities—resulting from the Industrial Revolution. When Ildelo Casado coined the word urbanización in 1867, he meant it to define a new field of activity, as yet "intact, virgin," for which the Spanish language had no appropriate term.

This mental attitude toward planning is still true in the twentieth century, but familiarity with the word urbanism has caused us to forget the original impulse that the term represented historically. Therefore, before we can consider the various forms which this new process assumed in the nineteenth century, the specific nature of the process itself must be determined and comparisons must be drawn with previous attitudes in order to show the extent to which it represented a mutation.

Until the Industrial Revolution, the urban complex may have been a semiotic system, whose elements were related synchronically within the context of rules and a code practiced by inhabitant and planner alike. By virtue of its relationship with all the other social systems (political power, learning, economy, religion), the urban system asserted itself as one of communica-

1 The relationship of contiguity dominating—is related to church, feudal system and corporate artisanship. The form of an individual house and its position along the ribbon of the street situated its occupant with relation to the dual transcendence of the cathedral (the clock tower marked the hours of his life) and the castle—and at the same time individualized him within a community of secular tasks. Every urban plan was a direct projection of the objectives of clergy, feudal lord or merchant guild.
During the Baroque period, the urban order no longer had this all-inclusive significance; the role given in Baroque planning to the satisfaction of the eye destroys the former sense of intimacy, and the city is transformed into a spectacle. Nonetheless, the radial avenues, as well as the vantage points where they originated and where they terminated, were still designed with reference to the established power, although in a new form, at the same time as they incorporated the knowledge of the period—since Baroque aesthetics cannot be understood when disconnected from contemporary science. Vauban and Le Nôtre were at once the King's planners and the disciples of Galileo and Descartes. In short, the relationship between the urban system and other concurrent systems was still implicitly accepted by both inhabitant and planner.

The Industrial Revolution brings about a radical transformation. It is accompanied by a spontaneous and unprecedented urbanization which presents two faces. On the one hand new agglomerations are formed, on a gridiron plan—particularly in the United States; meanwhile the Old World experiences an upheaval in her ancient towns which revolutionizes not only the spatial organization, but also the mentality of the city dweller and the initiative of the planner.

The alteration in spatial organization is brought about both by the filling and the overflow of the former city limits and by the division of the town into two antagonist groups that correspond to the production-consumption dichotomy. From 1830 to 1890 the population of London doubled, jumping from two to four million inhabitants. The population of Paris rose from one million to more than two, and that of Berlin, 150,000 at the start of the century, had reached 1,300,000 by the 1890's. Concurrently, a sharp division was created between peripheral areas of factories and manufacturing and the central business districts where stock exchanges were installed, banks multiplied, large stores and hotels appeared. "The cellar population of the working people" began to cluster in central or peripheral slums as opposed to the expensive residential districts to which the city's high-income groups were migrating.

As for the city dweller, he was unable to assimilate this urban revolution in terms of any previous process in which one urban order was blotted out by another. The situation had become dramatic; for he was now confronted with a spatial order devoid of its traditional richness of meaning. It had become monosemantic in the sense that its organization derived solely from the economic cause of its high demographic concentration: capitalist-industrialist production. Three factors combine to explain this semantic impoverishment:

1) the virulence of the economic drive.
2) the fact that the urban community was profoundly disturbed by the irruption of extraneous immigrants from the country, alien to the significance and functioning of the city's institutions, in particular its spatial organization.
3) the development of increasingly abstract means of communication; the continuity of rote communication is replaced by new systems which continue to perfect themselves throughout the nineteenth century, allowing the population greater mobility and providing information that is more precisely synchronized with the accelerating rhythm of history. Railway, daily press and telegraph will gradually supplant space in its previous informative and formative role.

This process, both qualitative and quantitative, is the basis of a new relationship with respect to the urban complex. Following the loss of partial conscious control and of implicit subconscious control, those actually experiencing the urban phenomenon came to consider it as something alien. They no longer felt inside the process and determined by it; they remained outside, observing the transformation with the eye of the spectator. The inhabitant suddenly saw the city as transformed by that "incidence of strangeness," which Claude Lévi-Strauss considers the prerequisite of ethnological observation. Furthermore, this attitude that the city is something subject to examination has been made possible by a simultaneous revolution in the structure of knowledge. Since the end of the eighteenth century, Western man has begun to view the entirety of his material and spiritual productions with a certain objectivity. Historical perspective provided the necessary dimension for the analysis of them and helped elaborate the new concepts of labor, economics, and art. At the beginning of the nineteenth century, conditions were therefore ripe for the advent of a new study of man through the social sciences. True, only at the end of the century did sociology become a theoretical science, but sociological description appeared with the industrial city—which proved to be its favorite subject.

The nineteenth century has its monuments of urban sociology: the works of social reformers like Edwin Chadwick or of Great Britain's Royal Investigations Commissions and Select Committees; the social research of ideologists like Frédéric Le Play, Engels' polemical synthesis in Die Lage der arbeitenden Klasse, and the descriptions of social novelists like Mrs. Gaskell, Dickens, Zola, or Eugène Sue. Here the urban phenomenon is not yet observed with the statistician's cold eye, as it will be toward the end of the century; but it is viewed for the first time with a clinical eye. To these writers the semantic loss of the
urban phenomenon and the transition from partial control in urban development to an absence of control, with its concomitant sanitation problems, makes them view the urban agglomeration as a diseased condition, or worse, a monstrous deformity. Hence the creation of new metaphors evoking the city as a chance, a cancer, a leprous body. In less colorful terms the upheaval will be described as chaos, disorder. In 1844, Engels described the "urban mess" of British industrial cities and to a journalist writing in 1856, London seems "the result of a gigantic accident." Big cities...formless masses, jumbles of houses...architectural chaos," wrote Victor Considérant in 1850.11

Such scandalous "disorder"—a new reality—calls for a new type of planning on the part of the planner. The process of urban organization at this point loses its original immediacy, as it now evolves about an object that has been removed from its context by analysis; for the first time the umbilical cord has been cut, so to speak, and the city subjected to critical examination. Consequently, the planning which was to emerge specifically from this critical approach may be termed critical planning. Its birthplace will be the old town, since the checkerboard layout of new cities was adapted to the requirements of industrial society and provoked only a partial or delayed critical reaction.

During the nineteenth century critical planning will take three forms, best defined as regularisation, pre-urbanism, and urbanism. These, however, include only that fraction of nineteenth-century projects and experiments consciously related to the capitalist-industrialist phase. They must be differentiated from the many previous or contemporary projects and achievements which were to carry on the pre-critical tradition throughout the century. The persistence of the latter can be explained by the complex chronology of the Industrial Revolution, and in the case of Great Britain, by the permanence of her old social structures, which no revolution was able to shatter.

Although the transformation in Western man's mental processes and conceptual tools already began during the last decades of the eighteenth century, and although major technical developments had then taken place—between 1765 and 1774 Watt developed the steam engine and in 1785 Cartwright invented the mechanical loom—it was not until 1806 that the first large cotton mill opened in Manchester. And even as late as 1830 the cotton industry was practically the only one mechanized; in the world's leading industrial country the structure of artisanal labor had remained unchanged. In Europe and the United States, the scales did not tip in favor of the industrial system until the forties, with the development of a new form of communication, the railway. The railway is the major technical invention that brought into play the new forms of production and promoted the growth of large urban concentrations. From 1840 on, railway and capitalism were to develop hand in hand, and having weathered the crises of the years around 1848, the "railways became the new economy's most powerful weapon," causing the new urban type to prevail.

The date 1861, year of the Great Exhibition in London, is a significant one. From then on England is the first country to establish official criteria for differentiating between rural and urban areas. By then, half of Great Britain's population is urban. However, the mutation will not be complete until the 1870's: for a long period of time the structure of urban real estate helped maintain the old spatial order. With respect to Great Britain, which remained the leader until the 1880's, the European countries like Italy or Spain will have to wait almost until the twentieth industrial phase with varying time lags. "The development of their respective railways reveals the age of their economies." Countries like Italy or Spain will have to wait almost until the twentieth century before an industrial order is established.

For these reasons, throughout the entire nineteenth century one witnesses the creation, extension, or organization of cities along three para- or pre-industrial patterns:

1) the Baroque or Neoclassical ceremonial form; 2) the essentially British residential pattern; 3) the colonial checkerboard scheme.

The Baroque and Neoclassical form with its monuments, its broad avenues lined with uniform buildings, its parks, its love for vistas and geometry, remained meaningful until the 1830's, deteriorating into formalism only toward the end of the century. It continued to be used in the creation, extension and embellishment of cities (Fig. 1).

Thus Washington was built on the plan of L'Enfant (1756–1825), with modifications which altered its logic but not its profound meaning. And in 1806, Woodward proposed a plan for Detroit which was based on the same esthetic principles. So around the old cities of Europe, between the ancient walls and the later bastions, suburbs and new towns of the eighteenth century continue to develop as in Berlin (Fig. 2). In Bremen (Figs. 3–4), Lubeck, Cologne, Vienna (Fig. 5) and Cracow, seventeenth-century fortifications that had become useless owing to modern artillery were transformed into promenades and gardens, but the formal esthetic of their design was not modified. Though the meaning of the word had been altered, the structure of the language remained unchanged. This was
equally true within the city proper. In France, Napoleon I was the "exponent of the Old Regime's will" and his urban projects were designed essentially to embellish the city. Thus the first section of the rue de Rivoli was opened up in 1806 with the rue de la Paix, rue de Castiglione and rue des Pyramides as side-streets; uniform houses with arcades were constructed along the rue de Rivoli and rue des Pyramides, the intention being to please the eye and complete the Baroque composition stretching from the Tuileries to the Étoile, which Louis XV had dreamt of extending from the Place du Trône (Fig. 6).

Also Baroque were Antolini's projects for Milan and Bertinelli's for the Pincio in Rome. In Great Britain the archetypal image remained the eighteenth-century masterpiece Bath, with its Circus and its crescents displaying identical facades. John Nash (1752–1835) was to be inspired by Bath—as well as by the rue de Rivoli—in his project for Regent Street (1812–1816) (Fig. 7), the royal ceremonial way that was designed for the pleasure of the Prince of Wales, to connect Portland Place and Carlton House (Fig. 9). And in Vienna, the Imperial power as embodied in Franz Josef, faithfully maintained the ideals of classical planning. By 1858, due to the effects of industrialization on the capital, the Ring had become a practical necessity, but it was nevertheless invaded by monuments and structures in accordance with esthetic requirements (Fig. 8).

In English cities the residential pattern was conditioned by standards and a system of practical and esthetic values which had been established in the seventeenth century and were to remain effective and unchanged until the end of Victoria's reign. Evidence of this is found in London, in the Bloomsbury districts, Mayfair, Belgravia, Regent's Park (Figs. 9–10), from Covent Garden, for which Inigo Jones (1572–1651) received the commission in 1630 from the fourth Earl of Bedford, to Bedford Square (1776), Tavistock Square (1864) or Gordon Square (1860), the principles of layout are the same (Figs. 10–11). This specifically British form of planning was the work of the great landlords and an outgrowth of the particular status of land tenure in some English cities, notably London. The great land-holding families, whose rural estates surrounded the towns and could be used for urban expansion, retained ownership of their property, while renting to building contractors. From the seventeenth to the nineteenth centuries leases were gradually extended from thirty to sixty, then to eighty and ninety-nine years, with increasingly restrictive and detailed clauses pertaining to rental or building. The latent and protracted control which the landowners exercised over the operation of their contractors explains at once the merits and the shortcomings of this form of planning. On the one hand, landlords like the dukes of Bedford, St. Albans, or Westminster rented on a long-term basis and not for immediate profit, as their purpose was to "enhance the long-range value of their estate." As a result:

1. Unlike any contemporary civic plan, their transactions were organized and related over a period of time. (For this reason their building contracts have sometimes been described as "miniature town-planning." )
2. These operations were not conceived with an attitude of pomp or ceremony but for the more realistic and profitable purpose of housing.
3. They performed amply—at least for the upper classes—a certain function: residential developments were protected from contamination with labor operations of various types (trades, crafts and industry) as well as from traffic; thus they flourished to one side of the main traffic arteries in an open fashion around rural elements that were carefully preserved in these so-called squares. Population density was limited, streets broadly designed, and the squares gave a meaning and focus around which to arrange the individual houses whose standardization permitted a maximum of comfort at the same time as they converted these residential areas into class communities. Seen Elor Rushton compares the square to a garden in a convenant.
4. Thanks to restoration and redevelopment, the spacious, airy character of these districts was maintained or improved upon so that when the upper classes abandoned them because they were no longer fashionable (this is what happened in Bloomsbury, for example, toward the 1830's), they were not allowed to deteriorate into slums.

On the other hand, since this form of hygienic and rational planning was motivated solely by the private interests of the individual landlord, the agglomeration as a whole was condemned to fragmentation. In the nineteenth century, London was really made up of nothing more than a number of dormitory villages juxtaposed around the City. Precautionary measures were incorporated into the plans for these communities, in order to ensure their autonomy and preserve their respectability. Thus, in the 1830's, the property of the dukes of Bedford was covered with gates and barriers erected against invasion from the districts of the North, and Figs Mead (Fig. 12), for example, rented in 1834 for the creation of a "model suburb for the lower and lower middle classes," was protected from its slum neighbor, Somers' Town, by using a system of offset and diagonal roads
instead of Somers’ rectangular layout.17 Furthermore, in most
plans the number of openings was increased to the west, while
to the east and north it was kept to a minimum.

Amidst the chaos of the industrial era, the lovely residential
neighborhoods of English cities seem to be symbols of order and
humanism, which explains the enthusiastic praise they elicited
from writers like Lewis Mumford or Steen Eiler Rasmussen. This
should not make us forget, however, that planning of this type,
born in the seventeenth century, is, in the nineteenth, no more
than a relic, an anachronism.

Finally, the predominant urban pattern outside Europe was
our third and last one—the colonial checkerboard—which can
be associated with a variety of vocations and meanings. It
assumed its most elementary form in the African military bases
(Tinumun, Orléansville) and its most elaborate in the cities of
Latin America, where a network of public plazas, consecrated
by Iberian tradition, was incorporated within the gridiron plan.
In British dominions this pattern served administrative or
political ends more and showed traces of Vitruvianism. Such
was the case with Pretoria in South Africa (1835) and, in
Australia, Adelaide which was designed by Light in 1837
(Fig. 13). In the United States mention should be made of the
unusual example provided by Salt Lake City, which was founded
in 1847 in accordance with a plan elaborated by Joseph Smith
in 1833. Here the checkerboard corresponds to a religious order
based on biblical geometry; the city’s generative element is
Temple Block (including Temple, Tabernacle, and Assembly),
whose sides are oriented toward the four cardinal points of the
compass (Fig. 14).

In other North American cities, this ancient form was applied
only in urban fragments. The checkerboard was the elementary
pattern of land division whether applied to virgin land or in
extensions to older cities of European type. The latter is the
case of New York, where expansion to the North, planned in
1811, gave rise to problems of connection—hence Washington
Square, Madison Square and Union Square (Fig. 15). Semanti-
cally meagre, the gridiron pattern has no other meaning than
that of an efficient tool. After serving colonizers, traders and
gold seekers, it became the instrument of industrial capitalism,
simultaneously available for speculation or traffic circulation.

The Baroque, the residential and the colonial patterns—three
forms of urban planning in the nineteenth century—have been
discussed here only incidentally. Though belonging chronologi-
cally to our period, they call into play preceding sociohistorical
orders. Our sole concern in the following pages will be critical
planning, whose originality will stand out more clearly in con-
trast to these briefly described systems. Our purpose is essen-
tially to bring out the meaning and articulation of the new
process which will be described through representative exam-
ple—ideal types—without an exhaustive examination of specific
projects and their execution.

REGULARIZATION

We mean by regularization—a word borrowed from Haussmann
that form of critical planning whose explicit purpose is to
regularize the disordered city, to disclose its new order by means
of a pure, schematic layout which will disentangle it from its
dross, the sediment of past and present failures.18

For the spontaneous urbanization of the industrial era the
Old World had two types of cities to offer: the open city, like
London, which was free for unlimited expansion, and the closed
city, like Paris, bounded by ancient walls. It is not surprising
that the most elaborate and precocious plan originated in an
enclosed city, where the disorder created by spatial limitation
was more shocking and hopeless. In spite of the fact that in
1850 France was economically behind Great Britain, Paris was
the object of the first perfected plan for regularization of a city
in the industrial age.

THE PLAN OF HAUSSMANN

The author of the transformation of Paris, Baron Georges
Haussmann (1809–1891), Prefect of the Seine from 1853 to
1870, has been generally misunderstood. Of his undertaking in
Paris, historians have frequently stressed the destruction that
he inflicted on the city (Figs. 16–17). And the “vandalism” of
this “Attila of the straight line”19 has too often been interpreted
as deference to Napoleon III’s concern with matters of internal
security: the Emperor wanted to put an end to riots by destroying
the medieval structure of Parisian streets (Figs. 18–19) and
replacing them with broad arteries along which the police could
assemble and charge. It is true that Haussmann was a faithful
servant of the Emperor. But the latter had more in mind than his
personal security. He was preoccupied with social problems
and eager to adjust his capital to a revolution whose significance
and consequences he had become aware of during his exile in
England. Moreover, if we compare Haussmann’s scheme with
earlier plans for the reorganization of Paris or if we consider the
Reports he prepared while in office and the Mémoires he pub-
lished at the end of his life, it is evident that being fundamentally
an administrator,20 he actually had little interest in politics. The
scope of his vision far surpassed the Emperor’s, and in this endeavor he was highly creative and original.

Haussmann’s project cannot be explained simply as a matter of strategy or as a concern for improved sanitation—which produced the celebrated water and sewage systems. His initial objective stands in sharp contrast to contemporary projects; his purpose was to give unity to and to transform into an operative whole the “hugs consumer market, the immense workshop”21 of the Parisian agglomerate. In 1853, Paris was still a collection of juxtaposed parts whose particular characteristics were no longer meaningfully related to the viewpoint or behavior of an increasingly mobile and shifting population. This actuated by the capitalist drive for accumulation of wealth. It had apparently never occurred to the successive authors of earlier plans that Paris as a whole, or simply the right or left banks, could one day become a single organism quickened with a unique life.”22

Even when previous planning attempted to project far into the future, it remained fragmentary and governed above all by esthetic considerations. Analysis of the Artists’ Plan, worked out in 1783 for the Convention, shows that planning was done by district (Fig. 20). It had essentially two aims: either the dividing up of property confiscated from the Church with a network of roads suitable for its further development or, whenever a monument seemed inviting, the creation around it of a formal system of radiating avenues. Thus, Saint Sulpice, the Observatory and the Val de Grâce constituted the Left Bank’s three esthetic poles (Fig. 21). The Observatory, for example, gave rise to a star-shaped Baroque project whose only justification was its perspective effects as it did not actually connect any significant centers of activity. Haussmann simply disregarded this and focused on a point farther north—the junctions of boulevards Port-Royal and Montparnasse with the boulevard Saint-Michel (Fig. 22). From his point of view, the problem of the Left Bank was both one of unification—to be achieved by opening wide throughways running in both directions—and one of organic connection to the Right Bank. Consequently, he was to open (among others) the boulevard de Latour-Maubourg as a continuation of avenue d’Anjou, the boulevard Saint-Germain as a line of connection between the two key districts of Étoile and Bastille, and boulevard Saint-Michel as a direct continuation of boulevard Sébastapol.

The Artists’ Plan (Fig. 20) and Haussmann’s (Fig. 22) reflect two conceptions of the city. The first corresponds to the Paris of Balzac,23 with its various societies enclosed within their sep-
are essentially a means of connection (Fig. 21). They form new lines of communication, general ones between districts (east, west, north, south), specific ones between certain old or new key points such as railway stations or market places. Old streets were widened in order to accelerate traffic flow (rues Grenâtre, La Reine); blocked arteries were duplicated (rue Saint-Denis); and diagonals were cut (boulevard de Magenta, rue Turbigo). This overall network of arterial connections constituted what Haussmann described as a kind of "general circulatory system," which he subdivided into hierarchized tributary systems, each organized around a plaza, which is no longer a place in its itself but a traffic node, or what the Perfect termed nodes of relation. The enclosed plaza of the old order, a haven sheltered from traffic, has been suppressed.

Haussmann's own description of his plan is breathtaking. He intends "to cut a cross, north to south and east to west, through the center of Paris, bringing the city's cardinal points into direct communication." The two axes, rue de Rivoli and boulevard Sébastapol with its extension boulevard Saint-Michel, will be completed by the double ring of outer boulevards (which include the continuation of those built under Louis XIV and a second ring), in order to provide a connecting framework within which will be incorporated the "system of the Etoile," the "system of the République," the "system of the Barrière d'Enfer," and so on. The same circulatory scheme will be applied for the new districts to the west, on the undeveloped sites of the old suburban villages of Auteuil or Passy.

The originality of Haussmann's conception can be gauged by the degree of opposition he encountered—both from the Emperor and from the Chamber of Deputies—and by the difficulties he met with at the time of the 1858 Treaty when he attempted to impose his logic of comprehensive planning.

The second important idea behind Haussmann's planning was sanitation through the creation of voids—that is, through systematic recourse to a kind of surgery which has since been considered vandalism. Never before, for sure, had such wide-scale demolition been carried out, never at least in terms of solids and voids. With Haussmann, the notion of open space (Friedrich, still current today, came into being—open spaces which are not laid out for visual or ceremonial effect as in the Baroque, but simply for the negative reason that they are not to be filled in. And related to this idea of open spaces was that of verdured space which is very different from the old public garden in that it has lost its semiotic richness.

Demolition was badly needed, however. Today we find it difficult to imagine the cramped, insanitary conditions existing behind facades which, due to the newly born Paris id, had begun to find to be picturesque. Also, we have forgotten the vast number of structures which had progressively invaded all the city's open areas; some had even crept into the courtyard of the Louvre. Haussmann undoubtedly caused devastation, though nothing to compare with that wrought by the French Revolution. For since that time the archaeological vision had been born, and it forced the Prefect to spare monuments of the past. But in the 1860's and 1860's, the idea of preserving an urban texture had not yet matured. Haussmann's most serious error was to destroy irrevocably the tightly woven and diversified fabric of the Île de la Cité, whose new blocks of giant buildings condemned it to death (Fig. 19). Nonetheless, Haussmann's surgery had its positive side. Within the network of streets designed for traffic flow, he created a hierarchy of planted areas, which he divided into four categories: promenades like the Champs-Élysées; squares, the model of which Napoleon III had brought back from London; public gardens laid out in a romantic pattern (the most successful of these are the Montsours and Buttes-Chaumont parks [Fig. 24]); and lastly, suburban parks situated at the eastern and western limits of Paris. In the latter, formerly royal forests, right-angled paths and star circles intended for the royal hunts in the seventeenth century were replaced by curved roads encircling artificial lakes.

In his Mémoires, Haussmann constantly brings up aesthetic matters. But this aspect of his work is not original and can be summed up as a monotonous repetition of the principles of Neoclassicism: uniform frontage lines along broad, straight streets, research into perspective effects and location of monuments on a perspective axis. For Haussmann, aesthetics are actually secondary, coming as a belated attempt to embellish streets which he had not originally laid out for reasons of beauty. Although indifferent in this respect, his work did not fail to impress some of his contemporaries as evidenced by Vienna and Berlin. But the real basis as well as the originality of his planning lies in the dual concept of a circulatory and respiratory system. This schema of regularization emerges during the last third of the nineteenth century as the fundamental verity of the capitalist-industrialist order. It will be referred to as the Haussmann pattern though it sometimes developed empirically outside the sphere of Parisian influence. For Paris offers the most systematic example of its application and served as a model for the majority of the other cities.
OTHER EXAMPLES

It is in Europe that the Haussmann process was most widely applied and in France that the Prefect’s theories were carried to their ultimate consequences by the visionary Henry-Jules Bois (Fig. 25) and especially Eugène Hénard (1849–1923). Bois was a great admirer of Haussmann; he was an engineer who, in 1865, published an essay entitled "Aérodomes; essai sur un nouveau mode d’habitations applicable aux quartiers le plus mouvementés des grandes villes." His proposition was meant to improve daily life in the great demographic centers, among which he included London, Liverpool, Manchester, New York, Boston, and Chicago. He wished not only to keep these big cities, but also to increase their density; this was made possible through an improved multilevel system of circulation which:

1) occupied 73 percent of the city surface instead of 18 percent in Haussmann’s Paris.

2) offered to pedestrians large streets on interconnected terraces 20 to 30 meters high; the schools were located on the upper terrace (the roof of the aérodome). "Moving rooms" (steam-powered elevators) enabled the people to climb from the lower-level streets to the upper-level ones. At all the levels the streets were interconnected by bridges and glassed-in galleries. Hénard had a greater influence. As a theoretician we owe to him the invention of the rotary intersection, which regularizes traffic flow around plazas (Fig. 26), as well as an analysis of the different categories of movement which is more detailed than Le Corbusier’s; its logical conclusion is the creation of an elevated ground level and the importance given to underground transportation. In the projects he conceived for Paris, his radical approach led him to suppress any cultural obstacles which might stand in the way of widening and straightening streets. Thus, rue de Richelieu was to be made as wide as the Champs-Élysées and was to be cut by a new perpendicular thoroughway which would also cut through the Palais Royal. Hénard’s conception of the city as projected in his drawings (Fig. 27) is not without resemblance to later sketches by Le Corbusier. Practically speaking, his only achievement in Paris was the Alexander III perspective, which he created for the 1900 World’s Fair.

In Germany, especially after the war of 1870, the Haussmann layout, with the architect Joseph Stubben (1845–1896) as a major exponent, frequently inspired total (Berlin, Cologne [Fig. 28]) or partial (Dresden, Munich) restructuration. However, increasing emphasis on archaeological and historical studies, and, to a larger extent, survival well into the nineteenth century of medieval traditions in old towns that often passed without transition into an industrial phase, resulted in the elaboration of circulatory and respiratory systems with a greater respect for the creations of the past. Old elements such as city gates or sections of walls were systematically incorporated into new, significant complexes; and—more important—old and new town were subtly interrelated. This is particularly evident in the treatment of the single and double ring boulevards designed in the place of ancient ramparts (Fig. 29). In addition the function of housing is more carefully studied than in France, and is often set up in parallels and incorporated into networks of side streets that are removed from the main traffic arteries.

In Spain a major problem of regularization arose in Barcelona. Antonio Rovira y Trias (1818–1889), winner of a competition organized in 1859 by the city government of Barcelona, proposed to solve the problem by creating a system of radiating boulevards in trapezoidal sectors between the old town and its extension (Fig. 30). The engineer Idefonso Cerdà (1816–1878) was chosen instead to carry out his own plan for the city’s extension (Fig. 31) but a satisfactory traffic system serving both Cerda’s scheme of a gigantic checkerboard and the old town was not worked out for a number of years. Eventually the traffic situation was partially remedied by creation of the Rondas (anticipated Cerda’s plan) and the plaza de Cataluña (somewhat smaller than the gigantic square proposed in Rovira’s plan) at the top of the old town (Fig. 32).

Throughout Europe we also find other fragmentary efforts: the regularization of certain quarters (such as in Antwerp [Fig. 33], Brussels, or Dresden [Fig. 34]) or simply the unsystematic opening of main arteries like those in the Viviani Plan for Rome, namely the two axes, Corso Vittorio Emanuele (from the Tiber to Piazza Venezia) and Via Nazionale (Fig. 35). In London, similar efforts were the work of official organizations such as the Office of Woods and Forests, the Metropolitan Board of Works, and later the London County Council, who for expediency’s sake cut wide empirical openings through the old urban fabric: Trafalgar Square, New Oxford Street, Shaftesbury Avenue, Charing Cross Road, Kinsgsway.

In the United States the Haussmann pattern made a bidental appearance, for urban disorder had come there late, produced by the juxtaposition of several independent checkerboard layouts (as in San Francisco or Chicago) or by the inadequacy of the checkerboard as a circulatory system beyond a certain degree of expansion (Figs. 36–37). Thus in 1909, the plan devised for Chicago by Daniel Burnham (1846–1912) and Edward Bennett
(1874-1954)—the first major comprehensive project for regularizing an American city—resulted primarily from the desire to create a traffic system which would solve the problems from the city's division into independent gridiron sections (Fig. 38). In the initial scheme, which was only partially executed, a wide central esplanade (N-S) was planned, which would serve as the starting point for ten radial streets. These included the new wide central axis (Empress Street) running perpendicular to Lake Michigan, and six diagonal streets; three wide circumvallating avenues completed this basic arterial structure. A highly elaborated respiratory system was designed to incorporate three large parks—Lincoln Park to the north, Grant Park in the center, and Jackson Park to the south—interconnected by a continuous strip of greenery which provided a structural frame for the grating on of secondary parks. We shall briefly review the origin of this complex type of urban lung known as the Park System.

**THE URBAN PARK FROM PAXTON TO OLMSTED**

Parallel with comprehensive regularization a partial regularization process—or what can be considered an element of regularization, the city park—has been developed in the open cities of the Anglo-Saxon countries. Haussmann had borrowed the idea from Great Britain, but he reduced it almost entirely to its respiratory function. For this reason, it is important to discuss the semantically richer prototype which had served as the model for the Buttes-Chaumont (Fig. 24) or Parc Montsouris in France and was later given new improvements elsewhere.

With the growth of the city in nineteenth-century England, city parks belonging to royal or seignorial domains were preserved by far-sighted landowners, with the same concern as the squares which give increased value to the developments. At the same time, however, due to the growth of an urban proletariat, new districts were spreading on the periphery, in which the back-to-back pattern of residential construction resulted in a total absence of greenery. At this point Edwin Chadwick (1800–1890) and special research committees advanced their theories concerning "The Effect of Public Walks and Gardens on the Health and Morals of the Lower Classes" and called for regularization of the suburbs and the development of a new urban element, a new type of park, designed not only for the purpose of ventilation but also for the recreation and relaxation of the masses.

The prototype for this appeared at Birkenhead, a suburb of Liverpool, where in 1814 Joseph Paxton was called by the municipal government to design and build what became the prototype of the new city park (Fig. 39). The celebrated gardener decided to surround it with houses, and in draining the terrain he excavated sufficient earth to enclose a couple of artificial ponds of irregular form. In the tradition of Lancelot Brown,29 he contrasted leafy and wooded border areas with central lawns and he counterbalanced those areas of the park reserved for walks with the open spaces created for sports and games. Not until much later were the latter introduced into continental parks, which for the time being remained gardens. But the most interesting aspect of the Birkenhead Park was its circulatory system consisting of two completely independent networks: an irregular one of narrow pedestrian paths and a roadway for carriages and horses, that ran all along the outer edge of the park and divided it across the waist.

In the United States the idea of a recreation field integrated into the urban fabric was picked up and expanded by Frederick Law Olmsted (1822–1903), who wrote, following his first trip to England: "I was ready to admit that in democratic America there was nothing to be thought of as comparable with this people's garden."30 With Olmsted, the urban park will be more thoroughly integrated into the city (which in this case is a metropolis), and at the same time more completely contrasted with it, both as a place of recreation and as a segment of unspoiled nature.

In 1856, Olmsted is requested by Calvert Vaux (1824–1885) to take part with him in a competition organized by the city of New York for the creation of an urban park. Their project is the winner. In 1857 Olmsted is appointed Park Superintendent. Central Park (Fig. 40) becomes the new prototype succeeding Birkenhead.

From the outset, Olmsted adopts Haussmann-style, a prospective vision. He designs the park, which was still then suburban, for the time when it would be at the center of Manhattan's steadily developing checkerboard and hemmed in on all sides by buildings.31 It had to act as the lungs of the city without becoming an impediment to communication. The conception of Central Park's circulatory network is a major contribution to a theory especially favored during the second half of the nineteenth century: the separation of traffic systems. For the first time in history, four traffic networks (for pedestrians, riders, fast and slow vehicles) were planned to function simultaneously, yet independently. Going a step further, Olmsted brought the third dimension into play, making use of tunnels, viaducts and any irregularities in the terrain in order to carry out his system. 

Olmsted did not lay the park out in the European tradition. Rather than reshape and domesticate nature, he deliberately designed it in an unspoiled, almost primitive state.32 His purpose was to let it be itself in contrast with the urban fabric. Through
this stark opposition, the city becomes more a city and nature, more nature. Thus, in the case of Manhattan, where man had suppressed the character of the landscape in his effort to achieve a regular checkerboard of asphalt and stone, Olmsted chose to preserve accidents of terrain and the irregular character of the area's original topography. On this point he was explicit. His aim was to "secure an antithesis of objects of vision to those of the streets": not satisfied with avoiding the inconveniences of the city, he wanted to create "an opposite class of conditions." Olmsted, in fact, set apart a kind of reservation, which he endeavored to shield from the vision of the future wall of China that would rise around it and to avoid the various constructions that Reptonian tradition assigned specifically to parks. Even the gardening technique used in planting was to be based on the principles of opposition and contrast. Thus the park as conceived by Olmsted appears semantically rich, its relation with the urban totality became more complex as the American cities requested Olmsted's services. He had already ascribed a regional function to Central Park, but from 1870 on he developed his idea of the Park System: a network of urban parks systematically laid out and interconnected by stretches of greenery. His first application of this scheme was in Boston, in 1851. He was, in fact, the creator of an element of regularization which up to 1857 had been practically nonexistent, but by 1902, on the eve of his death, had been adopted by 796 American towns.

PAXTON'S GREAT VICTORIAN WAY AND THE LONDON UNDERGROUND RAILWAY

Until the twentieth century the Landed Estate remained the basic unit of city planning in Great Britain. However, one project was elaborated which, although it was never executed, came about in the same spirit as Haussmann's. This was a study made by Joseph Paxton (1803–1865) in 1855, at that time a member of Parliament, in answer to a report prepared by the Select Committee on Metropolitan Improvement. Its object was the improvement of the general system of communications (Fig. 41). Paxton's approach to the problem involves exactly the same clinical procedure as Haussmann's. He thinks in comprehensive terms, considers the city as a whole. He viewed it in its historical perspective, criticized former plans, analyzed the various forms and currents of traffic flow and inventoried existing streets. Paxton's solution achieved the same results as Haussmann albeit using entirely different means. He proposed connecting all of London's railway stations by means of a transportation belt whose main axis was oriented east-west (the predominant direction of traffic flow). Designed to avoid duplication of any large existing streets, and to preserve any real estate worth saving, the belt was an unbroken stretch of ten miles and a furlong: it was completed north of the Thames by a one-mile two-furlong branch road running north-south through the Waterloo Road district and behind Piccadilly Circus.

Paxton's great thoroughfare, later called the "Great Victorian Way," was devised to reduce to fifteen minutes the maximum time required for travel between any two points on its perimeter. It was projected as a glassed-in arcade, 22 meters wide, 33 meters high, and flanked on either side by railway tracks in several layers, beginning at the height of 7½ to 8 meters. Thus fast transit was assured by a system of eight lines, both express and local, while on ground level the arcade was an asphalt street protected from bad weather, noise, and dust, and heated along certain sections in winter. Between the City and Regent Street it was lined with shops; during the day it was restricted to the circulation of pedestrians and private vehicles, but could be used at night for transportation of merchandise.

Though Paxton's project was worked out in detail from the point of view of construction and finance, and was supported in Parliament, it remained on paper. George F. Chadwick (see Bibliography) has, however, accurately pointed out its value as a visionary conception and the significance of its three-dimensional arrangement of traffic. As far as his affinity with Haussmann, it should be noted that Paxton took the rapidity of mechanical transportation into account in a systematic way.

The spirit of the Great Victorian Way to some extent found expression in the plan for the London Underground, whose first section was opened in 1863. Actually the underground with its fast, direct, and interconnected lines constitutes a London counterpart of the Haussmann system, a concentration of the same process. Its construction was contemporaneous with the grands travaux de Paris, and inversely, the question arises whether it is not the extensive elaboration of a ground level traffic system in Paris that delayed construction of its Metro until 1900.

COMMENTARIES AND METALANGUAGE

Urbanists in charge of regularization not only drafted projects but also discussed them in an abundant literature that included their comments and theories. The nineteenth century is the century of criticism: in the case of city planning, there is a definite correlation between the semantic impoverishment of the urban system itself, and the appearance of theoretical treatises preceding and justifying various practical proposals. It is in these
texts that one can directly appraise the mutation by which city planning acquired a critical dimension. Haussmann's principles and his Minories (a justification by hindsight, which in fact returns to the a-priori arguments of his decrees and speeches as Prefect) are echoed both by Paxton's testimony, The Evidence,36 and by the didactic writings of German architects like Stubben. But the most astonishing written work we unquestionably owe to Cardá.

In the first volume (eight hundred pages) of the Teoría General de Urbanización (1867),32 written at the same time as the Mémories and twenty-three years before Stubben's Der Stadttebau, all the themes of the new literature are collected, related, and set forth in detail: namely, historical perspective as applied to urban history; research into a taxonomy of not only cities and planning methods but also of urban elements (traffic arteries, streets and places, housing, gardens and so on), which must be based on historical evolution as well as functional analysis; a priority of traffic problems in any planning for the present or future.

In Cardá's work, this semantic priority given to urban circula-
tion is symbolized by the fact that this function is the basis of his classification of cities, the criterion by which the various phases of urban history are put in chronological order: The structure of the most ancient cities is adapted to pedestrian circulation (locomoción pedestre); later it is transformed to fit successively, horseback (locomoción equestre), an intermediate stage of dragged sledges (rastrera), and finally the wheeled vehicle (roda da). The latter is in turn divided into ordinary (horse power) and perfected (perfeccionada), which used the steam engine and had just been worked out in Cardá's time.37 A distinction is thus made between the traditional and the improved roda da which is contemporary with ciencia urbanizadora (urban scien-
ce). One must also notice the importance given by the Spanish engineer to the philology upon which he grounds his theories. Through etymological analysis he was better able to penetrate the meaning of terms that are traditionally employed to designate what is urban, and further to justify the invention of a new ex-
pression—una palabra nueva—for use in the new planning. The language of planning, which came out of critical analysis, is a scientific language, destined by its very nature to become the attribute of a planning establishment—in other words, a meta-
language—though Cardá himself never claimed this and no doubt was unaware of it.

If we analyze the actual accomplishments of regularization as well as its projects and metalinguages, we may define the process as follows:

1) The city is conceived as an object: Both theoretically and in its reality, the modern city came out of the same type of reflective effort that produced the nineteenth-century concepts of art and labor. The city exhibitions first held in Germany at the beginning of the twentieth century were the symbol of this reification—literally an incarnation of nineteenth-century theory. As a consequence of this process and of the century's general awareness of history, the concepts of historical monument and preservation of the past were created. The nineteenth century is the first to be concerned with the conservation of the past as a whole. The leader in this respect was France (in 1837 the Com-
mission des Monuments Historiques was created),32 but her measures of conservation were directed at isolated edifices and not at urban ensembles.

2) An analytical method is used, both in the study of the object and in the elaboration of projects. The key words are classification and system. Its use of classification, in which visual factors were extremely important, appears to have been borrowed from the natural sciences. Moreover, the concept of function evolved by the new biology becomes the basis of the systems created by the city planners who also apply to the city biological images like circula-
tion, nucleus, and cell.

3) Two objectives are given exclusive priority: traffic and hy-
giene.

PSEUDURBIA AND REDUCED BEHAVIOR

While the big city of the industrial era became a pole of attraction and fascination, it also began, as early as the 1850's, to provoke reactions of escape (Fig. 42). While it inspired regularization on the one hand, on the other it gave rise to the creation outside city limits of new agglomerations which were reduced in size and function and which corresponded to a new value in industrial society: housing. Two different and representative types of ac-
cretions occurred: 1) residential communities designed for wealthy or middle-class residents and 2) workers' colonies (or villages or towns). All of them we shall call pseudurbias. They were an outgrowth of hybrid planning which, though crucial, was nonetheless of a retrogressive tendency and indicated a
reduced pattern of behavior with respect to the rich and diversified vocation of the city.

RESIDENTIAL TOWNS AND VILLAGES IN THE SUBURBS

As members of the upper middle class began fleeing the evils of the city to live in the country, there developed simultaneously the concept of the country, as a sort of negative counterpart to the concept of the city. Thus in 1855, Alphonse Pallu decided to create Le Vesinet (Fig. 43), a precocious model of the residential town on a 436-hectare site on the road from Paris to Saint-Germain.

This community represented a haven of domestic life from which various forms of trade and industry had been banned. The only civic elements and public utilities allowed were those considered essential to residential constructions and needs—railway station, post office, schools, church, shops for vital commodities—which were grouped together away from private houses. Enjoyment of a picturesque countryside was the key attraction, in view of which the landscape gardeners Olive and Count de Choulot created a river and five lakes and dispersed the houses in an area designed in the English fashion with a public park as its center.

In Great Britain, the same residential and rural objectives inspired Richard Norman Shaw (1831–1912) when, between 1875 and 1881, at the request of Jonathan Carr, he built the suburban village of Bedford Park, at Tunham Green (Fig. 44). Church, cooperative store, club, and inn were the basic public facilities of this artistic agglomeration, which in this case was designed for a less wealthy section of the population. Landscaping was considered less important than the development of prototypes in housing. Detached or semidetached villas were designed of brick in the Dutch style by this master of English domestic architecture, whose main concern was the interior layout of his homes.

In this type of community, typical in Great Britain, the Germanic countries, and Belgium, the esthetic aspect did not really mature until the end of the century. Its supreme achievement was Hampstead Garden Suburb (1907; Fig. 45), designed by Parker and Unwin. Here analysis of the disposition of houses and paths discloses a series of precise intentions: to create a counterpart of countryside offering varied views and picturesqueness; to secure an intimate space, to ensure privacy for the dwellings, isolated not only from each other but from traffic and from whatever might recall the noises of the city. 40

WORKERS' TOWNS, COLONIES, AND VILLAGES

Certain employers decided to leave the city in order to provide healthier and especially more productive living conditions for their workers. At the edge of the big cities or in the open country, where land was less expensive, more space could be allotted to each individual and dwellings could be better designed and constructed.

In the early phase, these new working-class agglomerations followed a very rudimentary pattern, revealing no concern with matters of esthetics. They were characterized by separation of housing and working functions, orthogonal layouts, and standardization of elements. A basic minimum of public utilities and services was provided (the infamous pub was more often than not excluded by moralizing employers), while the public park represented the only element of luxury. All the effort went into housing, whose models became one of the attractions of the first world's fairs. The movement was inaugurated in Great Britain, and was followed by industrialized Europe, and then by the United States. The varying characteristics of these settlements reflect different degrees of a benevolent paternalism on the part of employers who might or might not choose to welcome residents who were not connected with their business.

Bessbrook (Ireland), created in 1846 by the Benjamin Ward Richardson family for their 2,500 workers, boasted a library, one hotel, and two squares. The famous Saltaire, founded in 1852 by Titus Salt for the 4,000 workers in his textile mill outside Bradford, was more austere, with a park affording its only greenery. In France, the movement was led by the textile manufacturers of Alsace. The Mulhouse Société des cités ouvrières was founded in 1853; its only achievement was the creation of regular groups of small houses placed back-to-back or in blocks of four, with front court and back garden (Fig. 46). In Germany, Krupp's first settlements, dating from 1870, were not any more original and did not even enjoy private gardens. In the United States, the plan for Pullman City (near Chicago) (Fig. 47), where the industrialist George M. Pullman relocated his plant in 1887, was equally unelaborate, although elements of greater commodity were provided. Houses were equipped with running water and sewage disposal. The town had a commercial and cultural center in the Arcade, an isolated building of 80 by 54 meters and 26 meters high, which had a covered gallery running through its middle. There one could find savings banks, a post office, meeting halls, a library, and a theater designed to seat 1,000, but no public bar.

In the 1880's the development of the industrial settlement
entered a second phase, generally localized in Great Britain and Germany. It is characterized by plans that did not incorporate new functions but new values, namely aesthetic principles and individualism, in the development of which parks and greenery are to play an important role. The notion of the model house is succeeded by that of the model village.

The pioneers in this field were the English manufacturers. As early as 1878, the Cadbury family purchased 183 hectares of land five miles from Birmingham, where they built Bourneville (Fig. 48) for the workers in their chocolate factories. Not only were the cottage types designed with great variety, but the picturesque is the explicit aim of the overall plan; the curve was predominant in the layout of streets, which were all planted with a carefully selected variety of trees, and gardens were to form by statute an inviolable part of the whole. Port Sunlight (Fig. 49), a settlement begun in 1888 by the Lever family, was more compact but boasted a central park as well as two traffic systems—a circuit of tree-lined streets 12.2 to 21.3 meters wide for vehicles and a circuit of paths for pedestrians—which had been designed to ensure peace and quiet and to be visually pleasing.

In Germany, an analysis of the progressive development of the Krupp workers' settlements reveals the gradual triumph of romantic aesthetics. Typical of the first phase, in 1872, was Schöдерhof (Fig. 50), with identical houses, a rectangular road pattern, and an English style public park placed at the edge of the town. The transformation began in 1894 with Alfredshof 1 (Fig. 51), where an attempt was made to create picturesque (pseudo-medieval) architectural effects. At Altenhof 1 (Fig. 52) and Alfredshof 2 (Fig. 53), which was an extension to the north of Alfredshof 1, however, the overall plan itself becomes pictorial as it breaks into pieces, loses the former regularity, and re-incorporates continuous stretches of houses. A little later, Margarethenhof was designed in the image of the old German village, and Altenhof 2 broke completely with the straight line and building alignment, skillfully alternating high and low tempo and provided with two networks, one for vehicles, another for pedestrians.

Possibly the most striking example of the picturesque was Aigleia Park (Fig. 54), built in 1895 in Holland by the industrialist Van Marken. Here the public elements (schools, bakery, cooperative store) were dispersed at the four corners of the community whose center was a lake.

Analysis brings out, in spite of obvious differences in their content, the structural identity of residential town and workers' settlement in the second half of the nineteenth century. Their planning, elementary though it may seem, has been discussed here primarily because it represented the beginning of a process of reduction (possibly arbitrary) whose development has continued during the twentieth century. Also, once defined, pseudourbanities can more easily be differentiated from garden cities, with which they have been compared and associated too frequently.51

PRE-URBANISM AND URBANISM: THE PROGRESSIST MODEL

In the process of regularization, urban "disorder" was examined in an effort to extract a potential order out of it; this order itself was not questioned, however. The term urbanism will be used to describe the process that radically contested this hidden order and ultimately led to the a-priori construction of a new and different one.

Though urbanism in this sense was not actually practiced before the end of the nineteenth century, it was preceded by a purely theoretical form of planning that anticipated it. Speculation of this kind was engaged in by a group of social and political thinkers who aspired to the complete restructuring of society—in which the city was but one element. Their cities were utopias. Nonetheless, we may designate them as examples of pre-urbanism, since in creating imaginary constructions like Pha
drange, Hygeia, Icara, or Nowhere, they produced the two basic models of spatial organization later to be retained by urbanism.

One of these models, looking to the future and inspired by a vision of social progress, we shall call progressist. The other, nostalgic in outlook, is inspired by the vision of a cultural community and may therefore be called culturalist.

Analysis of both these models, in their original purity and their ideological context of pre-urbanism, is essential to any understanding of urbanism, whose underlying motives have since been obscured by history's unpredictable twists and turns.

THE PROGRESSIST MODEL—PRE-URBANISM

The progressist model of planning was the first to emerge and is also the most important because out of it came what is today considered to be modern urban space. Although hygienists like Sir Benjamin Ward Richardson (1828–1896) contributed to its elaboration, this model of planning owed itself primarily to founders of socialism, namely Robert Owen (1771–1858), Charles Fourier (1772–1837), and Eusene Cabet (1788–1856), who while condemning the power of industrial society to alien-
ate, yet saw in it the most effective means of liberation, provided that the machine could be used to transform man and his world.

However, among the socialists who denounced the blight and squalor of the industrial city, Marx and Engels never proposed any replacement model. They considered it an illusion to plan the city of the future before the conditions required for its realization, namely revolution and its related restructuring, had been fulfilled. Not until the power was in the hands of the proletariat could a new world be built. This attitude, which persisted in various currents of European socialist thought during the second half of the nineteenth century, was later expressed by Lenin and his disciples, at the time of the October Revolution, as can be seen in the ABC of Communism by Bukharin and Preobrazhensky.

The other progressists, however, and notably those whom Marx called the Utopian Socialists, were to express their faith and their will to transform society in the form of imaginary cities which, though different, possessed a common spatial structure. Inasmuch as a detailed description of each vision would be too lengthy, we shall focus our analysis on the characteristics of the common model they share.

The progressist concept of space breaks with the old contiguous order of things, which regularization had not rejected but had simply modified by cutting into it. From the outset, the progressist spatial pattern is not based on continuity of solids but on a continuity of voids in which constructed elements have burst apart. Air, light, and greenery have become symbols of progress, and dispersal is considered essential to physical hygiene. Owen, for example, arranged the dwellings of his model town, designed for 1,200 inhabitants, within square areas which are planted with gardens in the center and surrounded by 400 to 600 hectares of land (Fig. 55). These small communities dot the countryside like Poussin's phalanges (Fig. 58) and the various versions of the built-up communautary idea (Fig. 57).

The relationship founded on contiguity which previously prevailed in the organization of urban systems is replaced by a relation founded on association; edifices are grouped in a discontinuous manner, according to function. Devised for reasons of efficiency and productivity, this functional classification is the origin of zoning. In all the plans of these authors housing is separated from recreation and work, the latter being further classified by type. Owen's squares are made up of dwellings grouped into what was actually a single building (Fig. 56), with mechanical and industrial activities located outside the unit, followed by agricultural functions. Fourier follows the same pattern with the wings of his Social Palace designed to house certain public utilities that Owen placed at the center of the

4. Bremen, c. 1890. The Ring promenade.

5. Vienna before the Ringstrasse development: view toward Karlskirche from the Augustiner bastion. Suburban development in the distance.

6. Paris, 120° intersection of rue de Rivoli and rue de Castiglione, c. 1885.

Squares in the West End of London, c. 1890.
Top to bottom: Euston, Tavistock and Gordon, Woburn and Tonnin-
tor, and Russell squares.

12. Plan of Fips Mead (1834; left, hatched) and Somers' Town (center).

14. Salt Lake City, Utah:
   1 - Temple; 2 - Tabernacle; 3 - Assembly.
15. New York City, Plan of 1811. The locations of the proposed Washington Square (1), Union Square (2), and Madison Square (3) are indicated.
22. Haussmann's projected transformation of Paris as presented by Jean Alphand, c. 1867.

23. Detail of Plan of Paris made for Haussmann in 1866 (sheet 7). At lower left is junction of boulevards Port-Royal and Saint-Michel, with boulevard Montparnasse off plan on left.
27. C. Bird's-eye view of Hénard's project.


29. Szeged, Hungary. Plan of the late nineteenth century, showing streets, buildings, and house numbers.

42. An example of metropolitan housing according to London's bylaws, Raymond Unwin, publishing this in 1903, remarked: "The truth is that in this work we have neglected the amenities of life. We have forgotten that endless rows of brick boxes, looking out on dreary streets and squalid backyards, are not really homes for people, and can never become such, however complete may be the drainage system, however pure the water supply, or however detailed the bye-laws under which they are built." (Town Planning in Practice, p. 4).

43. Perspective view of the park-settlement of Le Vésinet, 1855.
44. Plan of Bedford Park, Chiswick, drawn in 1896.

45. Hampstead Garden Suburb, designed by Barry Parker and Sir Raymond Unwin, 1907.

46. Bird's-eye view of the workers' colonies at Mulhouse, 1855.

47. Pullman, City, Illinois. Panorama in 1893.
48. Bournville, 1879, for the Cadbury Chocolate Works (from a map of 1897 by A. P. Walker). The first houses are at the lower left, facing Lindon Road.

49. Port Sunlight, built for Lord Leverhulme, 1888. The earliest part is at lower right in this plan of the early 1900's.

51. Krupp colony of Alfredshof 1, Essen, as originally laid out in 1894.

52. Detail of the Krupp colony of Alfredshof, Essen.

53. Krupp colony of Alfredshof 2, Essen, as extended.
A BIRDS-EYE VIEW OF ONE OF THE NEW COMMUNITIES AT HARMONY.
IN THE STATE OF INDIANA, NORTH AMERICA.

56. Rendering by Stedman Whitwell, Owen's architect, of a single Owenite community, c. 1826.

57. Project by André for a community modeled after the system of Communards, based on equality, liberty, fraternity, unity—the eternal principles which may result in happiness. It was not uncommon for social utopias of the nineteenth century to take on forms reminiscent of geometric ideal cities of the Renaissance.
58. Panoramic view of a phalenstère organized according to Fourier's theory, 1847.

59. Main building of a projected Fourierist phalenstère.

60. Guise. Familiâtre or Social Palace with the Godin plant, 1871.


64. Cross-section of the main artery of the first portion of the Ciudad Lineal in Madrid.

65. Layout of actual Ciudad Lineal of Madrid in relation to the center of Madrid (at lower left), 1894.
68. Schematic layout of the cité industrielle by Tony Garnier.

67. Perspective view of the hospital area in Garnier's cité.

68. Residential quarter of Garnier's cité.

69. Primary School in the cité industrielle.
70. John Ruskin finds the culturist model of a city in the old towns of Europe (Zug, 1835), and anticipates the later theories of William Morris and, to a certain extent, Camillo Sitte.

71. Camillo Sitte: Padua, Piazza del Duomo (I).

72. Sitte: Padua.
   I- Piazza delle Steccate; II- Piazza Grande (Garibaldi); a- Palazzo Comunale (de Governatore); b- Madonna della Steccate; c- Palazzo della Procuratoria (del Municipio).
73. Sitts: Suggestion for western portion of the Vienna Ring.

Public Squares: I, II, IV - new plazas around the Votive Church; III - atrium of the Votive Church; V - university plaza; VI - Rathaus plaza; VII - larger theater plaza; VIII - smaller theater plaza; IX - plaza in front of Parliament building; X - plaza in the Volksgarten; XI - plaza in front of the Palace of Justice; XII - new Hofburg plaza.

Buildings: a - chemical laboratory; b - Votive Church; c - site for a large monument; d - university; e - Rathaus; f - Burgtheater; g - projected new building related to Burgtheater; h - Temple of Theseus; j - suggested site for the Goethe Monument; k - an as yet unassigned new building; 1 - Palace of Justice; m - new Hofburg construction; n - projected triumphal arch.

74. Sitts: Project for the transformation monument of the Votive Church plaza, adding buildings G, H, J, monument K, and plazas E and F.

75. Sitts: Project for rearrangement of the Rathaus area (VI and VII in Fig. 73) so as to articulate meaningful voids. A - Burgtheater; B - new structure suggested by Sitts; C - Volksgarten; D - Rathhaus; E and F - new buildings planned by Sitts.
80. Letchworth. Bird's Hill area with its irregular layout of houses. The houses are arranged to afford the greatest number of countryside views.
squares in quadrilateral formation (Fig. 59). Richardson, who reserved separate districts for public buildings, hospitals, hydro-
therapeutic establishments, and laundries, also envisioned a
building area where "each workman can have a work-room on
payment of a moderate sum per week [and where] he may work
as many hours as he pleases...the family is thus separated from
the work."63

However, unlike the case of language or other semiotic
systems, there remains only a slight diversity in the associated
elements of these projects. Here identity64 tends to become the
prerequisite for association. The concept of prototype which
seemed to satisfy their egalitarian and economic aspirations
haunted the progressists under the name of model. Victor
Considérant (1808-1893), following the example of Fourier,
proposes that "a new type of housing" be worked out.65 Cabet is
convinced of the necessity for a standard model of housing as,
"all citizens should be housed in the same way and as well as
possible." And he carries the idea to an extreme; not content
with establishing a definitive prototype at Icaria for each building
category (housing, school, store, city hall), he even standardized
apartments and furniture.66

With all these theorists, the major study is devoted to stan-
dardized housing. The small individual house finds its perfected
model in Richardson's Hygeia (not to be confused with Fig. 1);
It has a roof terrace, laboratory-kitchen on the top floor, rooms
for hydrotherapy and storage, and it totally rejects decoration,
bringing to mind the experiments of the 1920's. The collective
solution, on the other hand, inspired an entirely new prototype
in which space was also analyzed and classified: Fourier's
phalanstère or Social Palace (Fig. 59), a unit of housing for two
thousand people. Formally it is patterned on the anachronistic
archetype of the Château of Versailles (Fig. 59), but this should
not make us forget the originality of its interior economy and
program. Actually the palace incorporates at the same time
apartments (in the center and especially in the wings) which
vary according to the income of the inhabitants and the size of
families and facilities and nurseries. Common facilities, placed at
the center of the buildings, included kitchens, dining halls,
laundries, baths, assembly, reception and concert halls, and a
ballroom, while in dependent wings were nurseries, schools,
workshops and hotels. A glassed-in street gallery on three
levels, "one of the most characteristic 'organs'...connects all the
parts of the whole," both public and private, and serves as an
ideal sheltered meeting place. In the 1920's, the same conception
will be taken up by avant-garde Soviet architects, who will be
able to integrate it, at this time, into a relevant architectural
space.67
Interconnections between model elements and model quarters follow a simple geometric order which strictly precludes the picturesque. The right angle acquires an almost mystical value, and the straight line symbolizes the break with the past and the advent of reason. Much more than the regularizing planners, the pre-urbansists are prepared to make a clean sweep of the past. For them geometry means truth as well as beauty. The problem of circulation is simplified by general classification of other functions. Except in the case of Icaria, where streets "with eight tracks" served to distribute the means of locomotion, the street and circulation problem is essentially centered on protection from the elements; the main concern is to enable pedestrians to move about under shelter from bad weather—in covered passages at Icaria, or in Fourier's famous street-gallery.

The importance of empty spaces and greenery, together with the division into independent functional units of two thousand like Owen's square and the phalansters, leads to a loss of urban character in the progressist agglomerations. The traditional city disintegrates. The new plan has no boundaries; it is made up of endlessly juxtaposable standard units and represents a first step in the gradual suppression of the difference between town and country.

What then is the significance of the progressist model? It is the same as that of regularization insofar as the latter is history-conscious and aims at economic efficiency. For the progressist, however, economic efficiency is no more an end in itself. Progressist ordering is no longer monosemantical; it attempts to recover semantical richness by referring explicitly and not merely implicitly to an ideology which may be defined in terms of two conceptions of man and reason.

This optimistic attitude, the heritage of the Age of Enlightenment, considers that reason is the supreme value, to be discovered in the world and developed in man. "A new era must commence; the human intellect, through the whole extent of the earth, hitherto enveloped by the grossest ignorance and superstition, must begin to be released from its state of darkness... For the time is come when the means may be prepared to train all the nations of the world—men of every color and climate, of the most diversified habits—in that knowledge..." wrote Owen.48

Hence the importance of the idea of a model, which is linked with both the conception of a universal human archetype and with a faith in the power of reason to determine scientifically and a priori a framework for human behavior. Considerent defined his task in almost the same terms as were used later by Le Corbusier: "Consider man, his needs, tastes, and active in-

clinations in order to determine the conditions for the system of construction best adapted to his nature."49

This faith in reason is at once the greatness and limitation of the progressist model. It is great insofar as it consciously assumed a formative role and reflected the will to eradicate social inequality. In this respect it is the birth certificate of functionalism. However, as a corollary of its aspirations toward the universal and its rejection of synagoge and difference, the progressist model condemned itself to remain a rudimentary and repetitious system. Owing, moreover, to its educational vocation and abstract character, it also exercised repression. From a psychoanalytic point of view, it can be associated with the threatening father image as embodied in both Owen and Icaria.

Certain Socialists tried to realize their utopias. Owen founded New Harmony in Indiana in 1825,50 and Cabot organized settlements, first in Texas, in 1848, and later in Iowa, in 1853. Cabot's purpose was "to make an experiment in the interest of humanity in order to determine the system of social and political organization... most conducive to progress" to "experience the system described in The Voyage in Icaria." These experiments were all carried out on too restricted a scale51 and in a politically and economically unfavorable context, and were consequently doomed to failure.

The only lasting achievement, inspired by Fourierism, was the familists, designed by the industrialist Jean Baptiste Godin (1817–1888) for his workers in Guise; it is still operating today (Fig. 60–61). Godin drew up the plan himself, and by 1859 construction had begun. In 1865, the Social Palace was occupied and achieved immediate fame.52

PROGRESSIST URBANISM

Toward the end of the nineteenth century, the progressist model undergoes a new phase of theoretical elaboration. However, owing to an evolution in the power structure, this phase is followed by an extensive practical achievement. On its own the liberal bourgeois sponsors the model of the progressist city. Unlike the apolitical second generation of specialists (following World War I), the two outstanding figures of the first generation of urbanists (before 1914) remained involved, though to a lesser degree than the pre-urbanists, with progressist political ideology. Arturo Soria y Mata (1844–1920) was a Spanish Republican and Tony Garnier (1869–1948) was appointed as chief architect of the city of Lyon by its Radical Socialist mayor, E. Herriot. Soria started out as a theoretician of communication,53 a
politician, philosopher and journalist, but later turned his full attention to urban and suburban traffic problems, and in particular to streetcars, establishing one of the first trolley lines in Madrid. Rapid urban transit by rail was, in fact, the basis of his idea for the linear city. (La ciudad lineal), which he began to develop in 1882 in a series of articles for the newspaper El Progreso. In terms that recall Cerda’s, he wrote, “The form of the city is, or must be, derived from the necessities of locomotion.” George Collins has pointed out that he was “the first person in modern times to evolve a planning method based primarily on the transportation of physical objects and the transmission of public utilities.”

From his first article it is evident that Soria has already formed a total vision: “A single street of 500 meters’ width and of the length that may be necessary—such will be the city of the future, whose extremities could be Cadiz and St. Petersburg, or Peking and Brussels (Figs. 62–63).

“Put in the center of this immense belt trains and trams, conduits for water, gas and electricity, reservoirs, gardens and, at intervals, buildings for different municipal services—fire, sanitation, health, police, etc.—and there would be resolved at once almost all the complex problems that are produced by the massive populations of our urban life. “Our projected city unites the hygienic conditions of country life to the great capital cities.”

Details will come afterward: along two parallel strips on either side of the spinal column, units designed for housing, work, and recreation would spread out, intermingled and unclassified, but interconnected by secondary streets perpendicular to the main thoroughfare. Soria is a fanatic believer in the orthogonal. Housing takes the form of individual units, designed to occupy, independently, one fifth of each allotted portion of residential land.

Space in the ciudad lineal has the same characteristics as in the progressist model: it is conceived a-priori as standardized, open, and functional. If Soria recommends mixing functions, it is perhaps because of the limitation imposed by the narrowness of his layout, to which he had assigned an essentially longitudinal organization based on the importance of traffic flow. At any rate, he abolishes the usual continuity between constructed elements and he standardizes housing. And finally, his linear structure, which afforded to the cities unlimited possibility of extension as well as the proximity to the countryside, tends at the same time to deprive it of a truly urban atmosphere.

Soria confidently defended his plan in numerous lectures and in a periodical entitled La Ciudad Lineal, which ran for nearly thirty-five years. He considered it to be universally applicable in any one of three forms: a ring around an already existing city, a ribbon running through an unpopulated area and connecting two cities (from Algeciras to Gibraltar, for example), or an entirely new town in an unurbanized region like the Andalusian or the Catalan coast. He was to apply his theory in the environs of Madrid, where the foundation of his Compañía Madrileña de Urbanización, in 1889 allowed him the opportunity to build a linear town composed of superblocks of individual houses with their gardens along a central trolley line and roadway (Figs. 64–65).

The ciudad lineal has been more easily ignored by the second generation of progressist urbanists, since it came from an industrially backward country afflicted with social problems. It has also been more consciously ignored since Soria’s idea was to be completely misappropriated. In his proposal for an industrial linear town, Le Corbusier simply lifted Soria’s solution.

The cité industrielle, designed by Tony Garnier, a young winner of the Prix de Rome, during his stay at the Villa Medici between 1889 and 1901, had an altogether different organization, with stricter zoning and a less abstract structure. From the outset, Garnier limited his population to 35,000 inhabitants and picked out a specific geographic region, namely southeastern France, in the vicinity of Rive de Gier, St.-Etienne, St.-Chamond: because of these specifications, elementary as they may seem, the cité industrielle must be considered as an illustration of progressist spatial distribution rather than a universal model. In accordance with Garnier’s classification of space, industrial establishments are spread out along the river, near a hydroelectric plant fed by a waterfall, whereas the city proper is located on a plateau and the sanitary installations on a still higher level (Figs. 66–67). These zones were to be discontinuous, expandable, and separated by areas of greenery. Public buildings, generally classified as administrative services, assembly halls, sports and entertainment centers, were broken down into still finer categories and placed in the central area of the city. Houses and schools, on the other hand, were located along the periphery. These constructed elements were implanted along continuous stretches of greenery intersected by an orthogonal street network (Figs. 68–69).

Tony Garnier’s city was the first major urbanist project to propose prototypical forms corresponding to the new conception of space. Soria was not concerned with architectural and aesthetic considerations; Garnier, on the other hand, designed houses with terraces and atriums, apartment buildings mounted on pilotis, and public halls with reinforced-concrete mushroom
columns. All this was to stir the imagination of a whole generation of architects and introduce them to a new aesthetic in city planning. Le Corbusier, who admittedly learned a great deal from the example of Garnier’s project, saw in it “an attempt to establish order and combine utilitarian and plastic solutions... the selection of essential volumes and spaces [designed] in accordance with practical necessity and the demands of that poetic sense which is peculiar to the architect.”

PRE-URBANISM AND URBANISM: THE CULTURALIST MODEL

PRE-URBANISM

The culturalist model took shape after the progressivist one and unlike the latter emerged not from a revolutionary vision but from criticism of an existing urban situation which was now more thoroughly entrenched.

The new model was retrospective in that it clung to the coherent and exemplary image of the preindustrial city in opposition to the contemporary image of urban incoherence. Underlying it was a new form of nostalgia which had awakened gradually with the development of historical studies at the end of the eighteenth century and with the application of historical perspective to the study of art and culture. Hegel made a first description of the perfect cultural whole embodied by the ancient Greek city, stressing its formative role. During the remainder of the century, historians such as Michelet, Burckhardt, and Fustel de Coulanges compared the disunity of the preindustrial city with the tightly knit cultural communities of the Middle Ages, the Italian Renaissance and ancient Rome. From this period came the concepts of the organic and the mechanical, which were evolved to contrast the functioning of the past with that of the present. Romantic esthetics linked them with beauty and ugliness, respectively. Later they were given more precision by Max Weber in terms of the dichotomy Gemeinschaft-Gesellschaft.

Though a whole segment of nineteenth-century European thought nostalgically analyzed the beautiful organic wholes of the past, only Great Britain was to set them up as models, notably in the writings of John Ruskin (1818–1900) and William Morris (1834–1896). This circumstance may be attributed to the force of tradition in Great Britain, and to the fact that as the pioneer in industrialism, she was also one of its most mutilated victims. In France, Victor Hugo weeps over the same image of the past as do Ruskin and Morris, but he does not project it into the future. “Let there be no mistake,” he wrote, “architecture is dead, hopelessly dead, killed by the printed word. Imagine what an investment would be required to rewrite the architectural book. Humanity’s great poem, her great edifice, will not be rebuilt, it will be printed.” As for Viollet le Duc (1814–1879), he analyzes the system of Gothic architecture, but only to hold it up to modern technicians as an example of rational structure. Neither outlook was in any way comparable to that of A. W. N. Pugin (1812–1852), who, as the instigator of the Gothic Revival, was to inspire Ruskin. Pugin’s purpose was to recapture, through architectural activity, the overall process of an organic society.

For Ruskin and Morris alike, recovery of the urban order of the past represented a way of recovering, through a kind of catharsis, the spiritual values on which rested the past communities. Their model, implicit in Ruskin’s work and explicit in Morris’ description of the twenty-first-century Europe is patterned, by means of critical analysis, on the features of old towns like Rouen, Oxford, or Venice (Fig. 70). It can be contrasted point by point with the progressivist model.

The culturalist city has well-defined limits. There are no more tentacular suburbs. When the hero of Morris’ News from Nowhere returns to the site of old London, he no longer recognizes the city, which has grown smaller, peripheral slum and industrial areas as well as residential sprawl have been suppressed; London is once again surrounded by beautiful countryside. Culturalist cities are small and concentrated: consequently, their urban fabric is continuous. Yet within the close-woven fabric, variety, irregularity, and asymmetry prevail: standardization is condemned. After counting 678 identical windows on the same side of Queen Street, Ruskin asked the inhabitants of Edinburgh: “You do not feel interested in hearing the same thing over and over again—why do you suppose you can feel interested in seeing the same thing over and over again?” His demand for diversity is justified by the variety found in nature; each individual should be free to express his own vital reality by growing, as it were his individual self. The culturalist city derived its significance from the variety of facades whose gables and openings are never identically designed and form the contrast between private buildings and the grander, more sumptuous civic buildings. In this model, organic beauty, the fruit of man’s patient handiwork, assumes the importance attributed to hygiene in the progressivist model.

The culturalist model cannot be considered as reactionary.
nor even as a conservative utopia in Karl Mannheim's sense. For behind it lay the hope of developing an unalienated man who would no more be the simple rational being of the progressists but a complete person. Morris clearly stated: "the Fourierist phalansteries and all their kind, as was but natural at the time, implied nothing but a refuge from mere destitution." Satisfaction of material needs is not enough. The goal of the socialist Morris is the development of a popular culture. "The cause of art is the cause of the people." 146

Nonetheless, the culturalist vision has a negative side: whatever the denials of Morris, who did not wish to be a "mere raider against progress" and perceived "amidst all this filth of civilization the seeds of a great change," it fails to acknowledge the irreversible nature of the mutation which the Industrial Revolution had engendered. 147 In psychoanalytical terms, the culturalist model is associated with the comforting image of the maternal breast: it is regressive.

URBANISM—CAMILLO SITTE

It is Camillo Sitte (1843-1903) who makes the transition from pre-urbanism to urbanism in the culturalist model. In his book, Der Stadt-Bau nach seinen Künstlerischen Grundsätzen, he gives the culturalist model a more complex and precise structure which will eventually lead to its practical application.

Sitte, director of the State School of Industrial Arts in Vienna since 1883 and also an erudite professor of art history, remains primarily an architect. He possesses the technical skill that both Ruskin and Morris lacked, but is devoid of the political social involvement that motivated their work. Esthetics is his guiding principle.

Sitte's book has its origin in the contemporary attempts at modernizing Vienna, and in particular, construction of the Ring, which was taking place practically before his eyes and offered an example of what not to do. In order to indicate the right directions, he elaborated a model of spatial organization based on systematic analysis—"in a purely artistic and technical manner," of the "compositional elements" which came into play in the preindustrial city and evolved from an innate, instinctive aesthetic sense. 148 Pencil in hand and working from books, but more often in situ during the course of frequent travels, Sitte dissected classical, medieval, and baroque spatial organization.

In all three types, one can find the same fundamentals which are inherent in the connection of their elements. Space is continuous, and buildings have meaning only insofar as they are related to each other; for Sitte "the modern disease of isolated con-

struktion" is to be condemned and monuments are actually to be built into the urban fabric: on ancient European plazas, for example, churches were seldom entirely disengaged from adjacent buildings on more than one side (Figs. 71-72). Hence, also, the importance and value given to connecting elements such as plazas and streets which modern planning can conceive of only in terms of voids: "Plazas used to form a whole with their surrounding buildings," wrote Sitte. "...In the Middle Ages and the Renaissance there still existed a vital and functional use of the town square for community life and also, in connection with this, a rapport between square and surrounding public buildings. Meanwhile in our day plazas are, at most, used as parking lots." 149

What is more, to function effectively, urban space should be enclosed... The main requirement for a plaza, as for a room, is the enclosed character of its space. 146 Enclosure is also considered by Sitte as essential to a feeling of well-being. Analysis shows that access streets leading off like turbine blades contribute to the closed-in feeling that is characteristic of ancient plazas. In this spirit, the Viennese planner considers areas of greenery to be like plazas, carefully circumscribing them with buildings in order to keep them from losing their urban character.

In the distribution of solids and voids, the only criteria should be irregularity, imagination, and asymmetry. This is to condemn the straight line, regularity, and symmetry which have led modern planners to place statues and fountains at the center of a plaza and not, as in the past, along its edge.

The first practical instance to which Sitte applies his analysis is in connection with a project for the Ring 148 (Fig. 73). In the area of the Votive Church, for example, Sitte confronts the problem of an inert, ununified space in which disparate edifices (church, university and a chemical laboratory) stand out as isolated units (Fig. 74). He chooses to interconnect them by means of a series of arcades and new construction adjoining the church which will partition the area. Thus he obtains two new plazas and achieves limited vistas to avoid the former feeling of vacuousness; he attains intimate enclosures, human scale and a surprisingly rich network of walkways.

Hence the main features of the Sittesque spatial model are continuity in constructed elements, enclosure, diversity, asymmetry, irregularity, and connecting elements which are significant in themselves. Sitte for the first time radically challenges a priori abstract city planning which comes off the drafting board, and points out its failure to take concrete experience into account. Thus he stresses the existential value of space and defines what might be called a behavioral space (Fig. 75). No wonder that Aristotle's word security appears on the first page...
of his book, his investigation into esthetic value in city planning should not be confused with the numerous contemporary tendencies toward two-dimensional pictorial effects.

The limitations of Sitjesque planning arise, nonetheless, from the exclusive importance accorded the esthetic dimension, even when it is extended to include physical and psychological well-being. In his project for the Ring, for example, Sitte designs buildings and elaborates forms primarily for the purpose of arranging space and scarcely considers their meaning or their intended use. This purely esthetic approach became as monoszental as the economically determined planning of Haussmann. Sitte’s model misses the fundamental destination of the modern city and ignores its complexity; it applies only to neighborhoods, on the level of the everyday activity of the pedestrian.

This explains, in fact, why it was used mainly in plans for suburban areas and for city extension. In this connection, as soon as his book was published Sitte’s ideas were immediately and enthusiastically adopted in Germanic countries, where, as the Collineses have pointed out, they appealed to a latent nationalism and began to undermine the prevalent Hausmann-type planning. Following the publication of his book, several municipalities (Altona, Brienzer, Linz, Olmütz) were to request Sitte or his collaborators as urbanist. The most important achievements based on Sitjesque planning are by Karl Henrici (1842–1922) (Fig. 76), who planned the extension of Dessau (1890) and of Munich (1893); Theodor Fischer (1862–1938), the Chief Town Planner in Munich from 1893 on; Theodor Goetze (1850–1919), Otto Lasne (1864–1935), and Friedrich Puettner (1871–1922) who worked in Darmstadt, Wiesbaden, Mainz.

In Great Britain, Sitte exerted a strong influence, though not until the beginning of the twentieth century, when his cause was taken up by Patrick Geddes and Sir Raymond Unwin. On the other hand, in French-speaking countries where his book was translated in 1902, Sitte was almost completely ignored. After World War I, the situation was aggravated by Le Corbusier when he stigmatized the Austrian planner as an apologist “for the donkey’s way” and a “passé au petit pied.”

Outside the specific realm of urban planning, Sitte’s theories also apply to the conservation of old cities. Thanks to Sitte and his contemporary, Burgomaster Charles Buis (1837–1914), who was responsible for the restoration of the Grande Place in Brussels, a new objective was formulated: the preservation of an urban ensemble and its fabric.

THE AMBIGUITIES OF THE GARDEN CITY

In 1898 the Socialist Ebenezer Howard (1850–1928) designed the Garden City, one of the last and most influential utopian models to come out of the nineteenth century. This model does not rely upon imagination nor does it provide a three-dimensional image; it consists of diagrams and their explanation.

Howard intended the Garden City as a refuge from the alienating character of the big city and a compensation for the deficiencies of country life. A new type of entity, it was to combine the social advantages of the city and the healthy conditions of rural areas.

The Garden City is limited in size and population. But it is autonomous and designed to incorporate all types of labor. It is encircled by an inalienable rural greenbelt. It encompasses an area of 6,000 acres, though only 1,000 acres (one sixth) were reserved for the city proper, which is conceived on a circular plan (Fig. 77). The radius of the city scarcely exceeds one-half mile, and its population must not exceed 32,000 inhabitants.

In his diagram, Howard indicated that secondary and primary sectors (factories and agricultural activities) should be localized on the periphery, while the tertiary sector would be established in the center—with the main public buildings—around a navel-like park (Fig. 78). As soon as the population tends to exceed the specified maximum, a part forms a new nucleus, which will give birth to a new city. According to this process, Howard envisioned whole systems of Garden Cities, situated on the perimeters of large circles of ten-mile radius whose centers would be occupied by a mother city which might, on occasion, attain a population of 65,000 inhabitants. All these units are interconnected, and also connected to the mother city, through a system of rapid transit by electric rail.

The term garden has led to misinterpretation, and Howard’s Garden Cities have often been confused with paeudurbias, as is the case with Georges Benoit-Levy, whose plan for a garden city is actually a garden dormitory. Howard revealed his originality, in comparison with the paternalistic pseudurbia, in the creation of true, complete urban units in which all forms of human activity should be represented.

It is obvious that the Garden City has many features in common with the progressist model. Soria was not mistaken when he repeatedly compared it with his cité modern, stressing in particular the objective common to both conceptions: rus in urbe (country in the city). It cannot be denied that physical hygiene was one of Howard’s main preoccupations. Further-
more, he also recommends a kind of zoning, and he relates his satellite city to a transportation system.

The differences, however, are greater than the similarities. The Garden City is, in fact, a particular version of the culturalist model, primarily because of its precise limitation in space. Such Malthusian restraint is a prerequisite for the type of social life envisioned by Howard and for the development of individuals within a differentiated community. Moreover, as Soria well understood, Howard condemns standardization and encourages variety in the handling of space and building. The independent, individual house is permitted only on condition that it coexists with related constructions. Finally, the town-center has an urban atmosphere, and it may be said that the Garden City's productive relationship with the surrounding countryside recalls somewhat the role of countryside with respect to the medieval town, which Lewis Mumford described as "being of the country."72

The first Garden Cities actually created were evidence of this profound adherence to culturalism. Howard was a realist as well as a utopian. As early as 1889, he founded the Garden City Association, which enabled him to purchase the necessary land for Letchworth in 1903, where he undertook his first experiment, with Richard Barry Parker and Sir Raymond Unwin as architects (Fig. 79). Unwin, who was assigned the task of drafting the plan, used Howard's diagram but also borrowed heavily from Sitter: layouts for paths, intimacy in space, diversified buildings made to interrelate three-dimensionally (Figs. 80-81). Unwin himself acknowledged how much he owed to preindustrial urban patterns in his aesthetic treatment of space.

CONCLUSION

Along with the emergence of critical planning, the nineteenth century experienced a parallel development of urban studies that branched out into corrective sociology. In his studies of the European working class, Frédéric Le Play (1806-1882) demonstrated the relationship between the structural pattern of labor, family, and social groupings. Later, geographers brought to light the role that geohistorical factors play in the formation of cities, while the German school, with Friedrich Ratzel as its exponent, developed the science of urban ecology. In France, Ellis Reclus (1830-1905) stressed the unique personality of each city, taking up again and further elaborating the metaphor of the urban unit as a living organism; the dynamism of a city, he maintained, can be grasped and interpreted only through the annals of its history. Time plays a creative role, in accordance with Darwinian theory, and what was soon to be Bergsonism.

Out of an assimilation of these works, Patrick Geddes (1854-1932) evolved the survey method at the beginning of the twentieth century. But while this method acted as a corrective for urbanism by respecting the complexity of reality and rejecting the a priori, it was nevertheless used by Geddes within the context of a culturalist system of values and it remained dependent on the creative intervention of a planner. Consequently, it did not fundamentally alter the course of critical planning.

Ultimately, regularization, pre-urbanism, and urbanism are the specific modes observable in urban planning for nineteenth-century industrial society. In their common departure from earlier procedures they share certain mutual traits. First there is the agent of the break, namely self-conscious, reflective process out of which came, through a series of problematic propositions, the actual concept of the city (and especially in the case of pre-urbanism and urbanism, the associated concept of countryside).

Secondly, there is the objectivising of urban space, for the first time conceived as a value in itself; a status made possible only by the semantic reduction to which the urban agglomeration was subjected as a consequence of the Industrial Revolution. Urban space ceases, in fact, to be implicitly related to significant social systems. This explains why city planning was preceded and accompanied by the development of metalinguages that justify, interpret, and in the last analysis, substantiate it. In all three phases, moreover, the urban project is thought out with reference to a systematic taxonomy more or less based on the idea of the city as an organism. The epistemological model, however, borrowed from the natural sciences, becomes increasingly involved with the matter of function.

The difference between the three approaches is essentially one of ideology or lack of ideology. Regularization, an analytical process, furthers the ends of the monosemantical industrial order, which neither Haussmann nor Olmsted questioned; they merely seek to give it a good form.

Pre-urbanism, on the contrary, is synthetic and based on a priori reasoning; it relates its proposals to ideologies. Whether it opts for or opposes the values of industrial society, its models are fraught with justifications which provide compensation—an (unconscious) analogue of the lost polysemy. Ideology in the guise of a science, actually takes the place of former institutional systems.
Urbanism, a latecomer, since its first practical achievements date only from the 1890's, follows the two main courses charted by pre-urbanism. By this time, however, the urbanist-architect (Sitte, Unwin, Garnier) has arrived on the scene, and city planning has laid claim to being a science; as a result, the options underlying each of the orientations tend to become obscured. These developments make the relocation of space complex.

Though cut off from their ideological roots, the two models born of pre-urbanism continued to survive well into the first half of the twentieth century. The present model was propagated, particularly by the Bauhaus, Le Corbusier and the rationalist architects of C.I.A.M. It was also developed during the 1920's in the Soviet Union, where, contrary to what occurred in other European countries, it was linked with revolutionary ideology. Fourier's housing unit as interpreted there by Moisei I. Ginzburg, acquired a meaning totally lacking in Le Corbusier's Unidades. Also envisaged in Soviet Russia is Boris's linear city, which is looked upon as an ideal instrument for production. 75 As for the culturalist model, it has mainly been applied in the Anglo-Saxon world, viz. in England after World War II when it inspired the building of the New Towns.

With these models has persisted an anachronistic nineteenth-century outlook. No attempt has yet been made to psychoanalyze the choice of directions in urban planning, and even more seriously lacking is an epistemology of methods. Metalanguages cannot be helped but they ought to be synchronized with the epistemology, the conceptual tools and processes of today. Modern planners still think in terms of classification and biological metaphors borrowed from the Lamarck-Darwinian thought approach. Up until World War II the idea of system, which is related to positivism, did not give way to that idea of structure which is necessary to keep pace with the other branches of science. In our day it would seem that this structural approach must be looked for in some form of regularities: urbanism that will remain abreast of the movement of history, and at the same time be open to creative innovation.

NOTES

THE CRITICAL ORDER

1. In his preface to Les Bourgeois Compagnons, p. v.
3. F. de Saussure, one of the founders of structural linguistics, coined the word "semiology" (from the Greek, meaning "science of signs") to mean "a science of signs expressing ideas and thus comparable to writing, to the deaf and dumb's alphabet, to symbological signs, to forms of postures... it is nothing but the most important among those various systems." But this particular system represents a kind of ideal type, from the study of which research in other fields of symbological activity may be stimulated and developed. Saussure foresaw that "linguistics might become the general model of any semiology." Such was to be the point of linguists like E. Benveniste or R. Jakobson. Some nonverbal semiotic systems have actually been studied in this light by Claude Levi-Strauss and R. Barthes, in his Elements de sémantologie (see English translation as Elements of Semiology, published with Writing, Degree Zero, London: Jonathan Cape, 1967), the latter indicates that "the aim of semiological research is to restore the functioning of systems of meaning other than language."
4. This word has been borrowed from the linguists who, following de Saussure, have differentiated two fundamental types of relationships between linguistic elements: to wit, spatial contiguity and similarity (which schematically correspond to two forms of mental activity: conjunction and association). Syntagm corresponds to the relationship of contiguity; paradigm to the relationship of similarity. From this double process, which one finds in all semiotic systems, R. Jakobson has taken (borrowing from the field of rhetoric) the concepts of metaphor and metonymy which he uses to characterize the style in the aesthetic systems (literature, music and painting). Regarding our own use of the word "symmetrical", I could have used metonymy: it is considering that "placed in a context, a term assumes its value only in opposition to preceding or following terms, or both." Barthes, op. cit., p. 131.
5. With regard to crowding in the old city, Engels had this to say in Die Lage der arbeitenden Klasse in England... the confusion has only recently reached its height when every space of space left by the old way of building has been filled up and patched over until not a foot of land is left to be further occupied." (English translation, p. 48.)
6. Concerning the absence of segregation of social classes in big French cities prior to the industrial era, see G. Doux, La vie ouvrière en France sous le Second Empire (Paris: Gallimard, 1956). But then Engels in Die Lage remarks: "Every great city has one or more slums, where the working class is crowded together. True, poverty often dwells in hidden alleys close to the palaces of the rich, but in general, a separate territory has been assigned to it, where removed from the sight of the upper class, it may struggle along as it can." (p. 26.) And, in Manchester, "by unconscious tacit agreement, as well as with outspoken conscious determination, the working people's quarters are sharply separated from the sections of the city reserved for the middle class." (p. 45.) Finally: "I have never seen so systematic a shutting out of the working class from the thoroughfares, so tender a concealment of everything which might offend the eye and the nose of the bourgeoisie, as in Manchester." (p. 47.)
7. Edwin Chadwick speaking of Liverpool, Manchester, and Leeds; he quotes Victor Hugo, "I have descended into the cellars of Life. I have seen these dark tombs.
9. In connection with these pathological metaphors of the city one might mention the poetry of this Belgian Emile Vanhoutte: Les Campagnes Abîmées rates of 1883 and Les Villes Ténuaires of 1895. These comparisons will caustic the nineteenth century and persist to our own day. To Le Corbusier...
Paris appears as a "cancer [which is] in good health," and he makes frequent use of Verhaeren’s phrases, in particular these: Pierre Lavedan, in *Histoire de Furnasvante* (Paris: Laurens, 1925), entries the second chapter: The Sick City and the Cured City, pp. 11-12. (p. 83.)
14. Olsen remarks incidentally that "where the English have sought luxury and display, they have done so not in town, but in the country. The country house is the great architectural symbol of Post-Reformation English culture. The town was by comparison a machine for living which people used when they had to be in London." (Town-Making in London, the Eighteenth and Nineteenth Centuries, 95, New Haven: Yale University Press, 1964, p. 4.)
15. Lower lengths: Covent Garden (1630), thirty-one years; Bloomsbury (early eighteenth century), sixty-nine years; Bloomsbury (end of eighteenth century), ninety-nine years. The average length of time is nine to nine years until the second half of the nineteenth century, and then it decreases. (Olsen, ibid., pp. 29f.)
16. Ibid., p. 29.
17. Sorens "Town was Lord Sorens’ private property; all landlords were not contemptuous of taking immediate profits. The characterization of Figs Maid is Olsen’s." (Ibid., p. 28.)

REGULARIZATION

18. Hausmann’s use of the expression "regularization" is to be found in his Mémoires (Paris: V. Havet, 1890-1933), Vol. III, pp. 67, 91, with regard to the parts of old Paris where he was establishing his new circulation system:
20. When offered the high position of Prefet de Police by the Emperor’s envoy in 1851, Hausmann, then Prefet de Geneve, refused: "never in my life was I involved either in family affairs or in political affairs, unless date bound. On the other hand, I have a deep relish for administration per se: it is my occupation." (Hausmann, op. cit., II, p. 8.)
23. The earliest series of Babas’s Condeór figures was published between 1830 and 1847 (Le caser Paris), whereas Zola developed his Routon-Marguets cycle from 1871-1892. English industrial novels corresponding to Zola’s phase are much earlier: Mary Barton was published in 1848, Hard Times in 1854.
24. In order, for instance, to avoid costly mistakes like the opening of the rue des Écoles as had been ordered for Napoleon III.
26. Ibid., p. 50.
27. Ibid., pp. 70, 80.
28. It is presently the fashion among a group of archaeologists to admire without restraint the old Paris which they certainly never know except through specialized books and collections of drawings... They complain about the shameless stir of Baron Hausmann... But they simply ignore the fact that the narrow winding streets of the center were practically impenetrable to traffic—dirty, stinking, and unhealthy... Do we show a single monument, one artistic building which my administration destroyed (and not built) to us?" (Ibid., p. 28.)
29. Brown, a gardener of genius (1716-1783) after the experiments of the early eighteenth century and notably Kent’s attempt at the picturesque, arrived at the English natural garden based mostly on hill composition and the contrast of "broad masses of light and shade, of lawn and trees." (Derek Clifford, A History of Garden Design (London: Faber and Faber, 1962.).

Paxton was also under the influence of Loubon, author of Arborium et Rhododendron, Buxuscom (1838), who advocated artificality and exoticism.
31. "Twenty years hence the town will have enclosed Central Park. Let us consider, therefore, what will at that time be satisfactory, for it is then that the design will have to be really judged. No longer an open suburb, our ground will have around it a continuous high wall of brick, stone, and marble." (Frederick Law Olmsted and Calvert Vaux, Description of a Plan for the Improvement of the Central Park (New York: 1858-1863), p. 8.)
32. This can be traced back to the vastness of wild spaces in America and in the case of Olmsted to the thousand-mile journeys by foot and on horseback during which he traversed the United States as far as California and Mexico. (See Olmsted and Kimball, Frederick Law Olmsted.)
33. Ibid., p. 48.
35. Report from the Select Committee on Metropolitan Communications, Session 1854-55, Evidence of Sir Joseph Paxton, p. 79. (June 7, 1855).
36. The reading of this volume (which has not yet been translated) is, in spite of its length, fascinating. The equally large second volume contains only statistical data. The most recent study of Gaudi is by Antoni-Susana y Puig in Hogar y Arquitectura (Madrid), No. 65, 1967, pp. 65ff.
37. See Vol. I, Book 4, Chap. 1, entitled "De la formation des arbres, considerèd sous le point de vue de la nécessité des espèces de pointe, de conformité avec les medes de locomotion de que en cada una de estas ha podido disponer el hombre." In the opening pages of his book, Cerda gives a lively description of his emotion and wonder when he saw one of the first trains: he immediately sensed its importance for city planning.
38. Barthes’ definition of metalexicon: “a system in which the content (as opposed to the expression) is itself formed by a system of meaning: in other words it is a semiotic system dealing with a semiotic system.” (“Édit너로와 de sémiologio in Communications 4 (Paris: Le Seuil, 1964), p. 130.), i.e., metalexicon is used when one discusses language itself. Compare with Cerda’s inventions the addition of Patrick Geddes on coming new words such as megalopolis, pathopolis, megalospe, polispeiosis, polispolity, palis- and neo-technical, usharizes, many of which have been adopted.
39. Note in particular the part played by Prosper Merimeé (1803-1870), who was nominated Inspector Général des monuments historiques in 1841.

PSEUDURBANITY AND REDUCED BEHAVIOR
40. The most complete and up-to-date analysis of these British efforts to be found is Walter Gropius, The Search for Environment: The Garden City Before and After (New Haven: Yale University Press, 1966).
41. In particular, by Georges Bercot-Livy, see La Cité-jardin (Paris: Henri Jouve, 1904).

PRE-URBANISM AND URBANISM: THE PROGRESSIST MODEL
42. The author has already used the terminology and concepts of pre-urbanism, progressist, picturesque in L’Urbanisme, utopias et réalités (Paris: Le Seuil, 1965).
44. While suppressing the differences which characterize syntagmatic association. See Note 4.

47. See Annette Kopp, *Ville et évolution* (Paris: Anthropos, 1967), which deals with architecture and city planning in the U.S.S.R. during the Stalin years, from 1920 to the early thirties. (For forthcoming translation, see *Town and Revolution*, New York: George Braziller.)


49. Le Conclusur wrote, "Tous les hommes ont même organisme, même fonction. Tous les hommes ont les mêmes besoins." (All men have the same organisms and functions. All men have the same needs.) (Voir une architecture (Paris: Editions Clos, 1923), p. 106.) Again, for him man can be defined by "le somme des constantes psychosociologiques innommes, inventoriées par des gens compétents." (The sum of a series of psycho-sociological constancies admitted and inventoried by competent people.) (Manuel de passer l'urbanisme (1945), a series of articles republished by Gordhan, 1963, p. 38.)

50. Robert Owen had bought 30,000 acres of land. Three years later he had to sail back to England, having lost four fifths of his fortune.

51. In his first experience, Ermes Cabet had been joined by seventy men for the exploitation of a thousand acres. In 1855 approximately a hundred people lived in Nauvoo, his second colony.

52. Gudin has described the fundamentals in his very important book *Solutions sociales publiques en France* (Paris: Editions Ouvrières, 1967), pp. 160–166, which gives detailed information about Gudin and his work, considers that Gudin confronts us with the only true philanthropist experience, in spite of the charges of paternalism which were immediately made against it by contemporary socialists.

53. He had invented telegraphic apparatus and tried to have Madrid equipped with telephones and swallows.

54. The first article is dated March 6, 1882, and the major one March 5, 1883.


56. Ibid., p. 16.

57. Ibid., p. 35.

58. He gives it a valus both biological and metaphysical: "The straight line, perimeter and mate of a plan in all its details, represents perfection, convenience, riches, well-being, learning, and, indeed, the republic is a form of government." (Quoted by George Collins in ibid., p. 18.) Seeia will remain faithful to this position until the end of his life as evidenced by his "For Principles of Planning of 1913. Compare Seeia's utopianism of the right angle to Le Corbusier's, especially in *Le Pouème de l'angle droit* (Paris: Editions Vervu, 1955).


60. Raymonde Williams, (see Note 8), part I, chapters 1, 2, 4, 6, 7.


67. Ibid., p. 16.

68. Ibid., p. 32.

69. Sitte explains his scheme in ibid., chap. XII, "Example of an Urban Arrange-ment According to Artistic Principles."

70. For this residential suburb in Darmstadt see George R. and C. C. Collins, *Camillo Sitte and the Birth of Modern City Planning* (New York: Random House, 1965), fig. 16.

71. The Collinses showed how misleading C. Sitte's translation was—chapter 7 was added entirely by the translator. Such alterations were even more damaging because, having no English version at their disposal, non-German architects and planners tended to read Sitte in the truncated French version.

72. See Charles Buls, *Esthétique des villes* (Brussels: Bureau d'Ouvriers, 1893) and "La conservation du cœur des anciennes villes," *Aufnahme* (Brussels, 1912), nos. 65–66. In its Petit lac à l'Esthétique, Buls refutes the French deficiency in that field, and praises the Belgian masterpieces which he says, were already numerous in 1860. His quotes in particular the names of Vaux-le-Vicomte, Boitier, Schwepp, Luka. Simler. At about the same time, Buls translated into French the first and up to now the only sample of Stubbein's writings, a report to the International Engineering Conference in Chicago (1893), under the title "La construction des villes. Rapport préliminaire et esthé- tiques à suivre pour l'édification des plans de villes" (Brussels: Lyon-Claussen, 1898). At the time of Esthétique, he seems to have been totally unaware of Sitte and his Ziehthe-Bau.


CONCLUSION

74. Geddes, a biologist, who suddenly had to change his career in 1878 because of a dramatic loss of visual acuity, which made microscopic research impossible, immediately approached sociological phenomena in the light of Darwin. He himself declared that his method was directed against utopian writing.

BIBLIOGRAPHY

BACKGROUND MATERIAL

The special, original character of city planning in industrial society and the break with tradition engendered by a new reflective approach toward planning can be fully grasped only in relation to other causes and transformations which occurred correspondingly during the nineteenth century. A complete list of works about economics, epistemology and technique would be too long, so we have made a selection of recommended titles.

Economics and Politics

Chapman, J. H. An Economic History of Modern Britain. Cambridge: The University Press, 1930–1938, 2 volumes...


Epistemology

Foucault, Michel. Les mots et les choses. Paris: Gallimard, 1966. An important work describing the transformations in the structure of Western thought since the sixteenth century, as observed in three key sectors: the theory of language, economics, and the natural sciences. The big break of the nineteenth century is clearly and forcefully defined.


A comparison between city planning in preindustrial and industrial society in many countries can be made initially with the help of the following general works:

Halbwachs, Maurice. La population et les tracés de voirie à Paris. Paris: Alcan, 1928...

"Les plans d'extension et d'aménagement de Paris avant le XIXème siècle. Le vie urbain (1520)."


Muntord, Lewis. The Culture of Cities. New York: Harcourt, Brace, 1939. Remains the most enlightening work in so far as it establishes the Industrial Revolution as the significant pivotal point.


Concerning the specific subjects of our book, we have provided a bibliography by chapter. Only basic works have been included; others are in the Notes. A large number of writings by urbanists and contempo-

REALIZATION

THE CRITICAL ORDER

Urban sociology in the nineteenth century and the "clinical eye" (texts of the period)


Maunou, P. Des agglomérations urbaines de l'Europe contemporaine. Paris: Belin Frères, 1899...

"Du concept de ville autonome et exsudatif. La vie urbaine (1919)." p. 145. One of the best approaches to the semantic reduction experienced by large urban agglomérations during the nineteenth century.


The tradition of urban construction by English landowners


REGULARIZATION

Hausmann


look of a contemporaneous. The transition to a new order as perceived through a poetic, caricatural, but accurate vision.


Halbwachs, Maurice. La population et les tracés de voirie à Paris: Paris: Alcan, 1928...

"Les plans d'extension et d'aménagement de Paris avant le XIXème siècle. La vie urbain (1920)." In spite of the title and the fact that the author views Hausmann's plan as a pure product of collective need, the brief article gives the clearest account of the Hausmann process and reveals its originality.

Hausmann, Baron Georges. Mémories. Paris: V. Hauard, 1880–1885. vols. See in particular the third volume for which Hausmann was correcting the proofs at the time of his death. This basic work is more valuable than the secondary studies of his work.

Attempts at regularization other than those by Hausmann, and the City considered as an Object (texts of the period)


Daly, Clas. "Comment les villes on sont formées." Revue générale de l'architecture (Paris, 1854).
Urbanism

Books:


Survey and urban geography.


City exhibitions.

Chronological Chart

1765. Beginning of the transformation of St. Petersburg
1767. Royal Crescent, Bath
1770. jot proposal for the extension of Edinburgh
1772. Matter, Miarbou le plus important de l'architectur
1772. Boden: Course of Architecture
1773. Ledoux's project for the town of Château-
1775. Volta: electrophorus
1776. Bedford Square, London
1781. First aeronautical flight with the
1783. Cort: puddling
1784. L'Enfant's plan for
1789. Plan for Paris known as the
1794. Condorcet: Esquisse d'un tableau historique des progrès de l'esprit humain

*This chart is not complete. Our purpose is not to catalog all the major events of the eighteenth century but to indicate certain major events of the eighteenth century and the development of a new and more efficient, rapid system of information and transmission which concepts and of new methods in science and philosophy. Finally, a correlation between the metaphysical and critical urban planning and the theoretical languages used in natural and biological sciences. In some instances, especially from the 1780's, the absence of any correlation has been noted as well.

The table of this book does not permit a complete chart, with a fourth column indicating artistic developments (plastic arts and literature). Therefore, this column, which, however, instructive, would have been less directly related to the subject of our book, has been omitted.

Bold face indicates events or inventions directly related to communication and information.
1797
1798
1800
1804 Ledoux: L’Architecture, considérée sous le rapport de l’art, des moeurs et de la législation
1806 Regnault: Enquiry into the Changes of Table in Landscape Gardening. First section of the rive du Rampo
1807
1809
1812 (-1827) Nash: Regent Street and Regent’s Park
1813 Owen: A New View of Society
1816
1817
1818
1821 (-1822)
1824
1825
1826
1828
1829
1830
1836
1837
1939
1940
1941
1942
1943
1944
1945
1947
1948
1949
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962

Mathematics, Natural Sciences and Applications
Philosophy and Social Sciences

First trip made by
Thevirtschaft’s first train locomotive
Lamarck: Philosophie Zoologique
Laplace: Théorie analytique des probabilités
G. Couper: Le règne animal distribué d’après son organisation
The Times, steam printed
D. Ricardo: Principles of Political Economy and Taxation
Schopenhauer: Die Welt als Wille
J. Grimm: Deutsche Grammatik
J. Fourier: analytic theory of heat
N. Niepce: first photography
Salt Carroll: Second Principle of thermodynamics
First train owned by a private company is driven by Stephenson’s steam engine
F. Woehler: synthesis of urea
Stephenson: construction of The Rocket
Inauguration of the first modern railway line, Liverpool-Manchester: The Rocket, 32 kilometers per hour
Foundation of the Krupp factories
Classic electric telegraph (presented to the Baxon railways)
Owen: The Book of the New Moral World
Foundation of Adelaide, Australia

Schelling: Ideen zur einer Naturreligion
Matthes: An Essay on the Principle of Population
Hegel: Phénoménologie des Geistes
Hegel: Wissenschaft der Logik
F. Bopp: Über das Konjugations-
ystem der Sanskritsprache
D. Ricardo: Principes de Politique Economie et de la Taxation
Schopenhauer: Die Welt als Wille
J. Grimm: Deutsche Grammatik
Champollion: Lettre à M. M. Dacier, relative à l’alphabet des hiéroglyphes
N. Niepce: first photography
Salt Carroll: Second Principle of Thermodynamics
First train owned by a private company is driven by Stephenson’s steam engine
F. Woehler: synthesis of urea
Stephenson: construction of The Rocket
Inauguration of the first modern railway line, Liverpool-Manchester: The Rocket, 32 kilometers per hour
Foundation of the Krupp factories
Classic electric telegraph (presented to the Baxon railways)
Owen: The Book of the New Moral World
Foundation of Adelaide, Australia

Mathematics, Natural Sciences and Applications
Philosophy and Social Sciences

First elevator in New York
Housemann appointed Prefect of the Seine
Housemann’s plan for Paris: first thoroughfares. First project for the Metropolitan Railway, London
Paxton: Crystal Palace (International Exhibition in London)
Titus Salt: Saltaire (Yorkshire)
Hausmann appointed Prefect of the Seine
R. Bismarck: Über die Hypothese Welche die Geometrie zu Grunde Liegen
G. Bauër: An Investigation of the Laws of Thought
Humboldt: Cosmos
Darwin: The Origin of Species
Asphalt

Schleicher: Abreiß de Gegen-
menge compriant des langues indo-germaniques
J. Burali-Forti: Die Kraft der Renaissance in Italien
Fechner: Elemente
Spencer: Principles
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Reference/Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1863</td>
<td>London Underground Railway</td>
<td>Maxwell: theory of the electric field</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Martian oven</td>
</tr>
<tr>
<td>1865</td>
<td>G. Mendel: birth of genetics</td>
<td>F. A. Kekulé: structure of benzene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maxwell: theory of the propagation of electromagnetic waves</td>
</tr>
<tr>
<td>1866</td>
<td>First transatlantic cable</td>
<td>F. de Coulounies: La ciel antique</td>
</tr>
<tr>
<td>1867</td>
<td>C. F. Adams: Theory of the Earth</td>
<td>E. Adolfo: Electric Telegraph</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marx: Das Kapital (first book)</td>
</tr>
<tr>
<td>1868</td>
<td></td>
<td>Schliemann: Ithaka</td>
</tr>
<tr>
<td>1869</td>
<td>Mandela: classification of the elements</td>
<td>Balloon postal service during the siege of Paris</td>
</tr>
<tr>
<td>1870</td>
<td></td>
<td>E. B. Tyler: Primitive Culture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F. Klein: Anthropology</td>
</tr>
<tr>
<td>1871</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1874</td>
<td>Richardson: Hygrograph</td>
<td></td>
</tr>
<tr>
<td>1877</td>
<td>Shew Bedford Park, Morris Society for the Protection of Ancient Building</td>
<td>Peacock: origin of infectious disease</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Claude Bernard: Lecons sur les phenomenes de la vie commune</td>
</tr>
<tr>
<td></td>
<td></td>
<td>box animaux et box vegetaux</td>
</tr>
<tr>
<td>1878</td>
<td>Edison: incandescent light bulb phonograph</td>
<td>F. de Sauvage: Memoire sur le systeme prodigieux des voyelles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dans les langues indo-europeennes</td>
</tr>
<tr>
<td>1879</td>
<td>Birmingham, England</td>
<td>Le Play: La methode sociale</td>
</tr>
<tr>
<td>1880</td>
<td>Pullman City, U.S.A.</td>
<td>Nietzsche: Human, all too human</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1882</td>
<td>Sonya: Le Ciudad Lineal (in El Progreso)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dopps: first long-distance transmission of power by electric current</td>
</tr>
<tr>
<td>1884</td>
<td>Foundation of Johannesbourg</td>
<td>Nietzsche: Die fruehliche Wissenschaft</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Berlin: God and the State</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mommenen: Rätoroman Geschichte (end)</td>
</tr>
<tr>
<td>1887</td>
<td>Automatic telephone</td>
<td>Nietzsche: Glauben Dämmerung</td>
</tr>
<tr>
<td>1888</td>
<td>Port Sunlight, England</td>
<td></td>
</tr>
<tr>
<td>1889</td>
<td>Creation of London County Council</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sitt: Der Städtische Bau nach seinen künstlerischen Grundzüge</td>
<td></td>
</tr>
<tr>
<td>1890</td>
<td>Henrici: plan for the extension of Dresden</td>
<td></td>
</tr>
</tbody>
</table>