

OPPOSITIONS BOOKS

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The Architecture of the City

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Our description of the city will be concerned primarily with its form. This form depends on real facts, which in turn refer to real experiences: Athens, Rome, Paris. The architecture of the city summarizes the city's form, and from this form we can consider the city's problems.

Chapter 1 The Structure of Urban Artifacts

The Individuality of Urban Artifacts

By architecture of the city we mean two different things: first, the city seen as a gigantic man-made object, a work of engineering and architecture that is large and complex and growing over time; second, certain more limited but still crucial aspects of the city, namely urban artifacts, which like the city itself are characterized by their own history and thus by their own form. In both cases architecture clearly represents only one aspect of a more complex reality, of a larger structure; but at the same time, as the ultimate verifiable fact of this reality, it constitutes the most concrete possible position from which to address the problem.

15 Palazzo della Ragione, Padua, Italy.

We can understand this more readily by looking at specific urban artifacts, for immediately a series of obvious problems opens up for us. We are also able to perceive certain problems that are less obvious: these involve the quality and the uniqueness of each urban artifact.

In almost all European cities there are large palaces, building complexes, or agglomerations that constitute whole pieces of the city and whose function now is no longer the original one. When one visits a monument of this type, for example the Palazzo della Ragione in Padua, one is always surprised by a series of questions intimately associated with it. In particular, one is struck by the multiplicity of functions that a building of this type can contain over time and how these functions are entirely independent of the form. At the same time, it is precisely the form that impresses us; we live it and experience it, and in turn it structures the city.

Where does the individuality of such a building begin and on what does it depend? Clearly it depends more on its form than on its material, even if the latter plays a substantial role; but it also depends on being a complicated entity which has developed in both space and time. We realize, for example, that if the architectural construction we are examining had been built recently, it would not have the same value. In that case the architecture in itself would be subject to judgment, and we could discuss its style and its form; but it would not yet present us with that richness of its own history which is characteristic of an urban artifact.

In an urban artifact, certain original values and functions remain, others are totally altered; about some stylistic aspects of the form we are certain, others are less obvious. We contemplate the values that remain—I am also referring to spiritual values—and try to ascertain whether they have some connection with the building's materiality, and whether they constitute the only empirical facts that pertain to the problem. At this point, we might discuss what our idea of the building is, our most general memory of it as a product of the collective, and what relationship it affords us with this collective.

It also happens that when we visit a palazzo like the one in Padua or travel through a particular city, we are subjected to different experiences, different impressions. There are people who do not like a place because it is associated with some ominous moment in their lives; others attribute an auspicious character to a place. All these experiences, their sum, constitute the city. It is in this



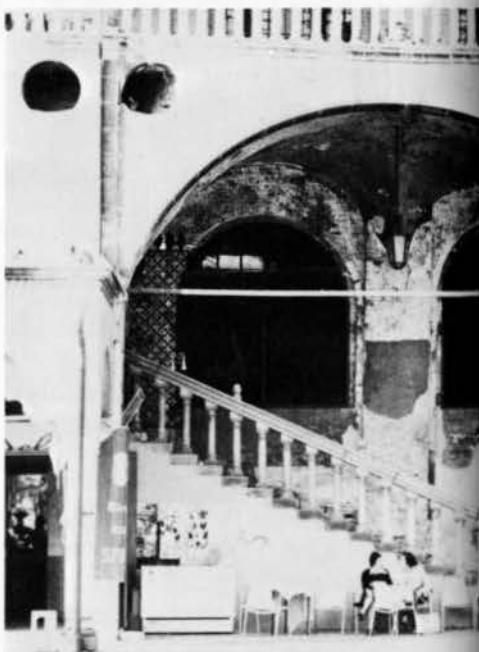
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16 Palazzo della Ragione, Padua, Italy.

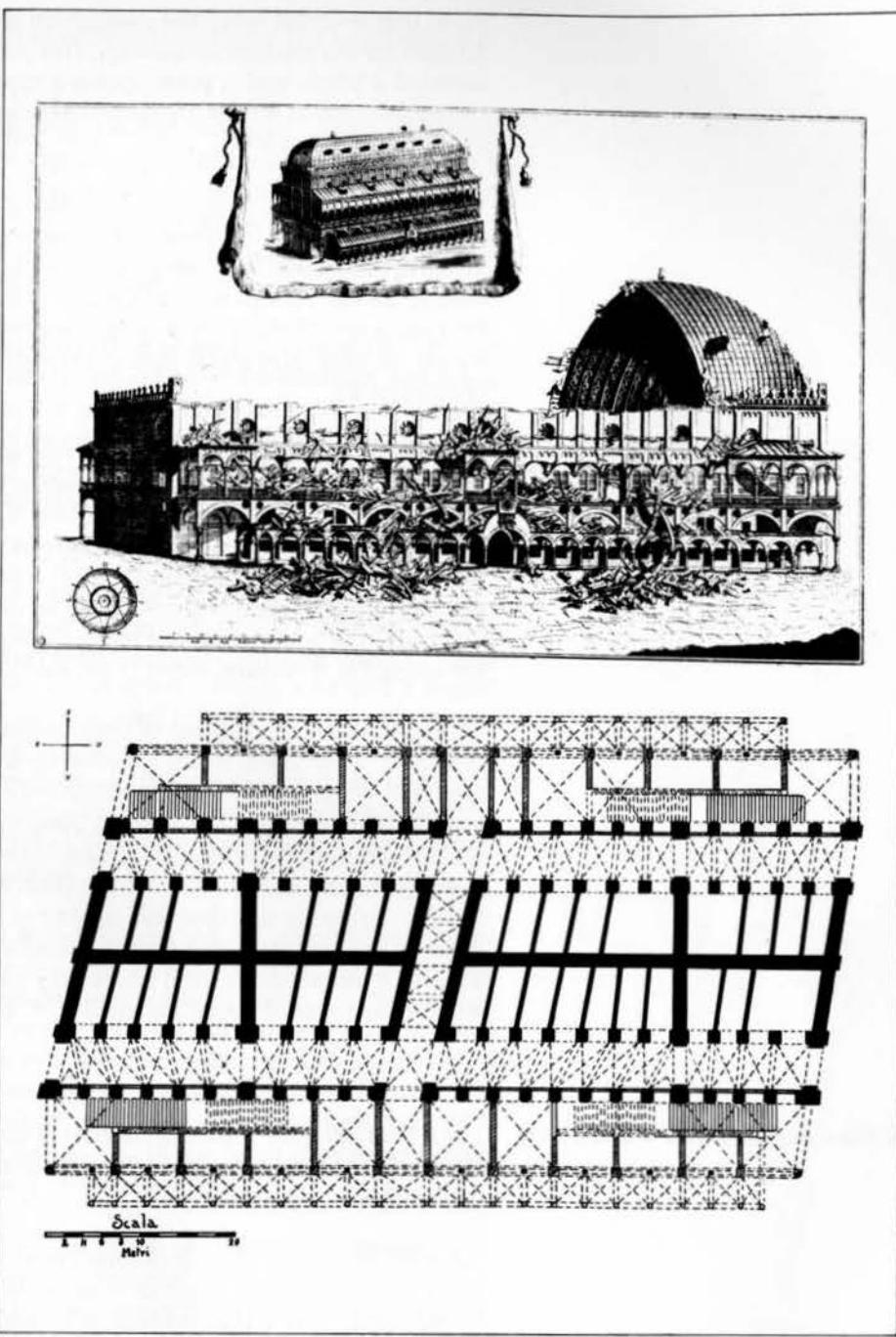
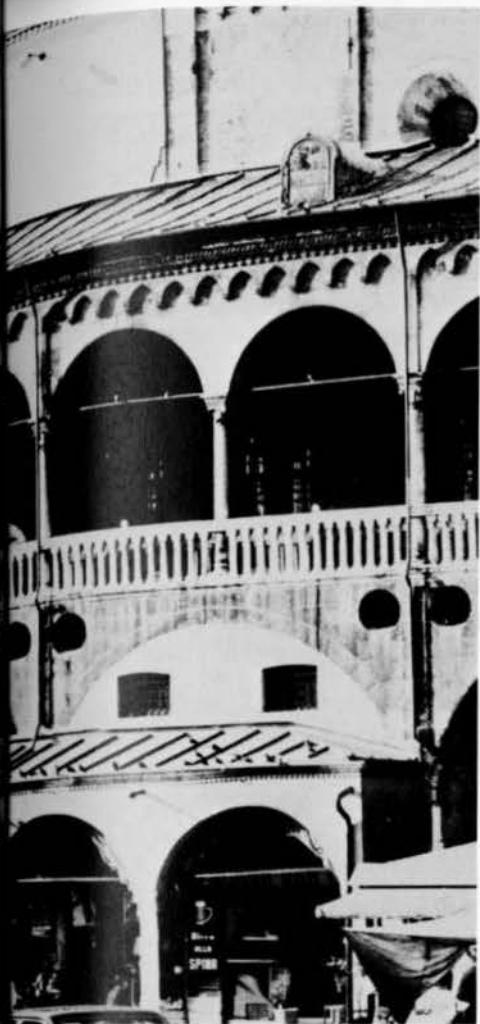
17 Palazzo della Ragione, Padua, Italy.

18 Palazzo della Ragione, Padua, Italy. Above: "Drawing of the remains of the Salone della Ragione ruined by

a hurricane on August 17, 1956," by Giorgio Fossati. Below: Ground floor plan as it has existed from 1425 up to today, according to the reconstruction by A. Moschetti. Thirteenth-century walls in black.



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sense that we must judge the *quality* of a space—a notion that may be extremely difficult for our modern sensibility. This was the sense in which the ancients consecrated a place, and it presupposes a type of analysis far more profound than the simplistic sort offered by certain psychological interpretations that rely only on the legibility of form.

We need, as I have said, only consider one specific urban artifact for a whole string of questions to present themselves; for it is a general characteristic of urban artifacts that they return us to **certain major themes: individuality, locus, design, memory**. A particular type of knowledge is delineated along with each artifact, a knowledge that is more complete and different from that with which we are familiar. It remains for us to investigate how much is real in this complex of knowledge.

I repeat that the reality I am concerned with here is that of the architecture of the city—that is, its form, which seems to summarize the total character of urban artifacts, including their origins. Moreover, a description of form takes into account all of the empirical facts we have already alluded to and can be quantified through rigorous observation. This is in part what we mean by urban morphology: a description of the forms of an urban artifact. On the other hand, this description is nothing but one moment, one instrument. It draws us closer to a knowledge of structure, but it is not identical with it.

Although all of the students of the city have stopped short of a consideration of the structure of urban artifacts, many have recognized that beyond the elements they had enumerated there remained the *âme de la cité*, in other words, the *quality* of urban artifacts. French geographers, for example, concentrated on the development of an important descriptive system, but they failed to exploit it to conquer this ultimate stronghold; thus, **after indicating that the city is constituted as a totality and that this totality is its raison d'être, they left the significance of the structure they had glimpsed unexamined**. Nor could they do otherwise with the premises from which they had set out: all of these studies failed to make an analysis of the actual quality of specific urban artifacts.

The Urban Artifact as a Work of Art

I will later examine the main outlines of these studies, but first it is necessary to introduce one fundamental consideration and several authors whose work guides this investigation.

As soon as we address questions about the individuality and structure of a specific urban artifact, a series of issues is raised which, in its totality, seems to constitute a system that enables us to analyze a work of art. As the present investigation is intended to establish and identify the nature of urban artifacts, we should initially state that there is **something in the nature of urban artifacts that renders them very similar—and not only metaphorically—to a work of art**. They are material constructions, but notwithstanding the material, something different: **although they are conditioned, they also condition.¹**

This aspect of “art” in urban artifacts is closely linked to their quality, their uniqueness, and thus also to their analysis and definition. This is an extremely complex subject, for even beyond their psychological aspects, urban artifacts are complex in themselves, and while it may be possible to analyze them, it is difficult to define them. The nature of this problem has always been of particular

interest to me, and I am convinced that it directly concerns the architecture of the city.

If one takes any urban artifact—a building, a street, a district—and attempts to describe it, the same difficulties arise which we encountered earlier with respect to the Palazzo della Ragione in Padua. Some of these difficulties derive from the ambiguity of language, and in part these difficulties can be overcome, but there will always be a type of experience recognizable only to those who have walked through the particular building, street, or district.

Thus, the concept that one person has of an urban artifact will always differ from that of someone who “lives” that same artifact. These considerations, however, can delimit our task; it is possible that our task consists principally in defining an urban artifact from the standpoint of its manufacture: in other words, to define and classify a street, a city, a street in a city; then the location of this street, its function, its architecture; then the street systems possible in the city and many other things.

We must therefore concern ourselves with urban geography, urban topography, architecture, and several other disciplines. The problem is far from easy, but not impossible, and in the following paragraphs we will attempt an analysis along these lines. This means that, in a very general way, we can establish a logical geography of any city; this logical geography will be applied essentially to the problems of language, description, and classification. Thus, we can address such fundamental questions as those of typology, which have not yet been the object of serious systematic work in the domain of the urban sciences. At the base of the existing classifications there are too many unverified hypotheses, which necessarily lead to meaningless generalizations.

By using those disciplines to which I have just referred, we are working toward a broader, more concrete, and more complete analysis of urban artifacts. The city is seen as the human achievement par excellence; perhaps, too, it has to do with those things that can only be grasped by actually experiencing a given urban artifact. This conception of the city, or better, urban artifacts, as a work of art has, in fact, always appeared in studies of the city; we can also discover it in the form of greatly varying intuitions and descriptions in artists of all eras and in many manifestations of social and religious life. In the latter case it has always been tied to a specific place, event, and form in the city.

The question of the city as a work of art, however, presents itself explicitly and scientifically above all in relation to the conception of the nature of collective artifacts, and I maintain that no urban research can ignore this aspect of the problem. How are collective urban artifacts related to works of art? All great manifestations of social life have in common with the work of art the fact that they are born in unconscious life. This life is collective in the former, individual in the latter; but this is only a secondary difference because one is a product of the public and the other is for the public: the public provides the common denominator.

Setting forth the problem in this manner, Claude Lévi-Strauss² brought the study of the city into a realm rich with unexpected developments. He noted how, more than other works of art, the city achieves a balance between natural and artificial elements; it is an object of nature and a subject of culture. Maurice Halbwachs³ advanced this analysis further when he postulated that imagination and collective memory are the typical characteristics of urban artifacts.

These studies of the city which embrace its structural complexity have an unexpected and little-known precedent in the work of Carlo Cattaneo. Cattaneo never explicitly considered the question of the artistic nature of urban artifacts, but the close connection in his thinking between art and science as two concrete aspects of the development of the human mind anticipates this approach. Later I will discuss how his concept of the city as the ideal principle of history, the connection between country and city, and other issues that he raised relate to urban artifacts. While at this point I am mostly interested in how he approaches the city, in fact Cattaneo never makes any distinction between city and country since he considers that all inhabited places are the work of man: ". . . every region is distinguished from the wilderness in this respect: that it is an immense repository of labor . . . This land is thus not a work of nature; it is the work of our hands, our artificial homeland."⁴

City and region, agricultural land and forest become human works because they are an immense repository of the labor of our hands. But to the extent that they are our "artificial homeland" and objects that have been constructed, they also testify to values; they constitute memory and permanence. The city is in its history. Hence, the relationship between place and man and the work of art—which is the ultimate, decisive fact shaping and directing urban evolution according to an aesthetic finality—affords us a complex mode of studying the city.

Naturally we must also take into account how people orient themselves within the city, the evolution and formation of their sense of space. This aspect constitutes, in my opinion, the most important feature of some recent American work, notably that of Kevin Lynch.⁵ It relates to the conceptualization of space, and can be based in large measure on anthropological studies and urban characteristics. Observations of this type were also made by Maximilien Sorre using such material, particularly the work of Marcel Mauss on the correspondence between group names and place names among Eskimos.⁶ For now, this argument will merely serve as an introduction to our study; it will be more useful to return to it after we have considered several other aspects of the urban artifact—of the city, that is, as a great, comprehensive representation of the human condition.

I will interpret this representation against the background of its most fixed and significant stage: architecture. Sometimes I ask myself why architecture is not analyzed in these terms, that is, in terms of its profound value as a human thing that shapes reality and adapts material according to an aesthetic conception. It is in this sense not only the place of the human condition, but itself a part of that condition, and is represented in the city and its monuments, in districts, dwellings, and all urban artifacts that emerge from inhabited space. It is from this point of view that a few theorists have tried to analyze the urban structure, to sense the fixed points, the true structural junctions of the city, those points from which the activity of reason proceeds.

I will now take up the *hypothesis of the city as a man-made object*, as a work of architecture or engineering that grows over time; this is one of the most substantial hypotheses from which to work.⁷

It seems that useful answers to many ambiguities are still provided by the work of Camillo Sitte, who in his search for laws of the construction of the city that were not limited to purely technical considerations took full account of the

"beauty" of the urban scheme, of its form: "We have at our disposal three major methods of city planning, and several subsidiary types. The major ones are the gridiron system, the radial system, and the triangular system. The sub-types are mostly hybrids of these three. Artistically speaking, not one of them is of any interest, for in their veins pulses not a single drop of artistic blood. All three are concerned exclusively with the arrangement of street patterns, and hence their intention is from the start a purely technical one. A network of streets always serves only the purposes of communication, never of art, since it can never be comprehended sensorily, can never be grasped as a whole except in a plan of it. In our discussions so far street networks have not been mentioned for just that reason; neither those of ancient Athens, of Rome, of Nuremberg, or of Venice. They are of no concern artistically, because they are inapprehensible in their entirety. Only that which a spectator can hold in view, what can be seen, is of artistic importance: for instance, the single street or the individual plaza."⁸

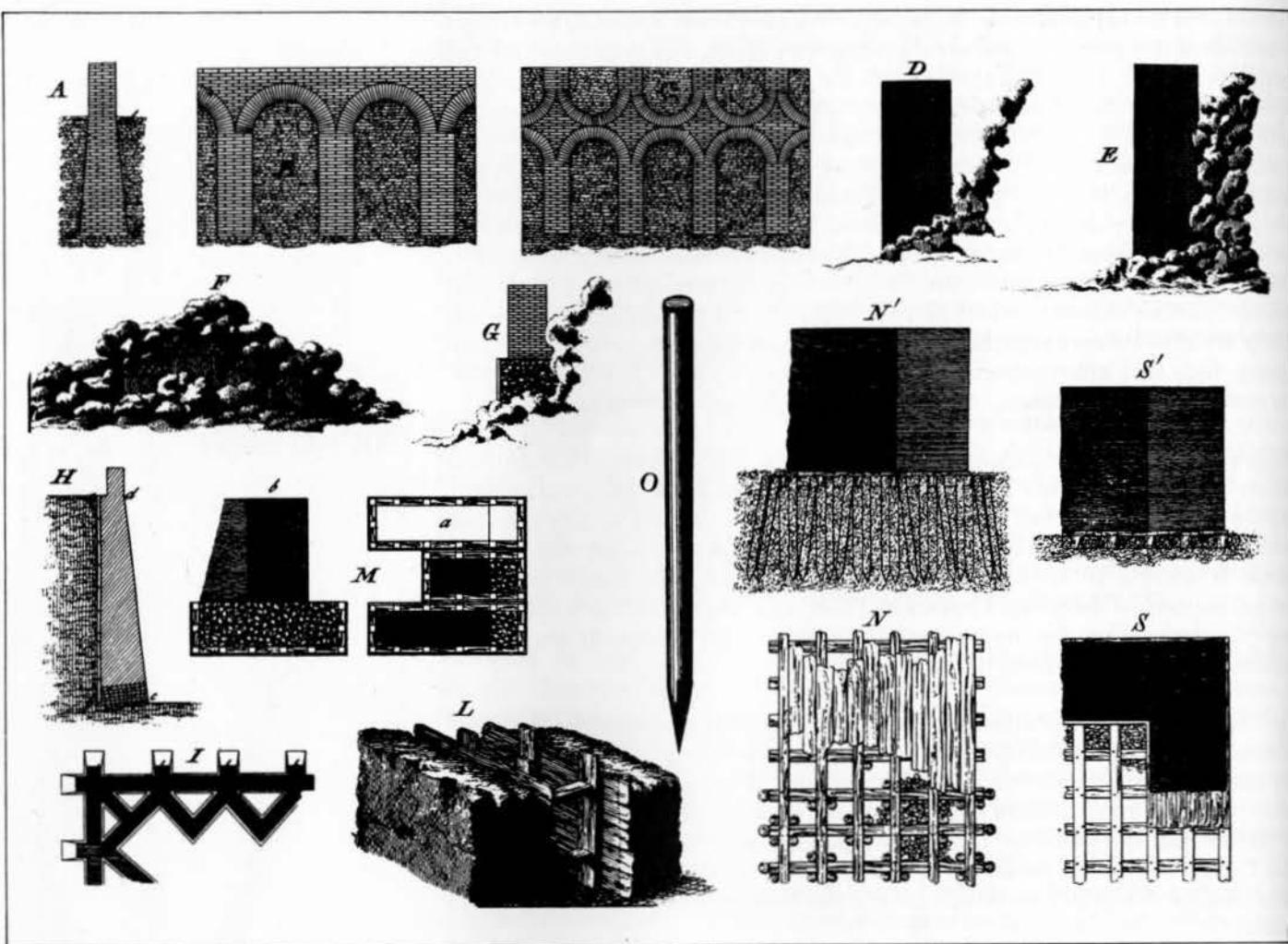
Sitte's admonition is important for its empiricism, and it seems to me that this takes us back to certain American experiences which we mentioned above, where artistic quality can be seen as a function of the ability to give concrete form to a symbol. Sitte's lesson beyond question helps to prevent many confusions. It refers us to the technique of urban construction, where there is still the actual moment of designing a square and then a principle which provides for its logical transmission, for the teaching of its design. But the models are always, somehow, the single street, the specific square.

On the other hand, Sitte's lesson also contains a gross misconception in that it reduces the city as a work of art to one artistic episode having more or less legibility rather than to a concrete, overall experience. We believe the reverse to be true, that the whole is more important than the single parts, and that only the urban artifact in its totality, from street system and urban topography down to the things that can be perceived in strolling up and down a street, constitutes this totality. Naturally we must examine this total architecture in terms of its parts.

We must begin with a question that opens the way to the problem of classification—that of the typology of buildings and their relationship to the city. This relationship constitutes a basic hypothesis of this work, and one that I will analyze from various viewpoints, always considering buildings as moments and parts of the whole that is the city. This position was clear to the architectural theorists of the Enlightenment. In his lessons at the Ecole Polytechnique, Durand wrote, "Just as the walls, the columns, &c., are the elements which compose buildings, so buildings are the elements which compose cities."⁹

The city as above all else a human thing is constituted of its architecture and of all those works that constitute the true means of transforming nature. Bronze Age men adapted the landscape to social needs by constructing artificial islands of brick, by digging wells, drainage canals, and watercourses. The first houses sheltered their inhabitants from the external environment and furnished a climate that man could begin to control; the development of an urban nucleus expanded this type of control to the creation and extension of a microclimate. Neolithic villages already offered the first transformations of the world according to man's needs. The "artificial homeland" is as old as man.

Typological Questions



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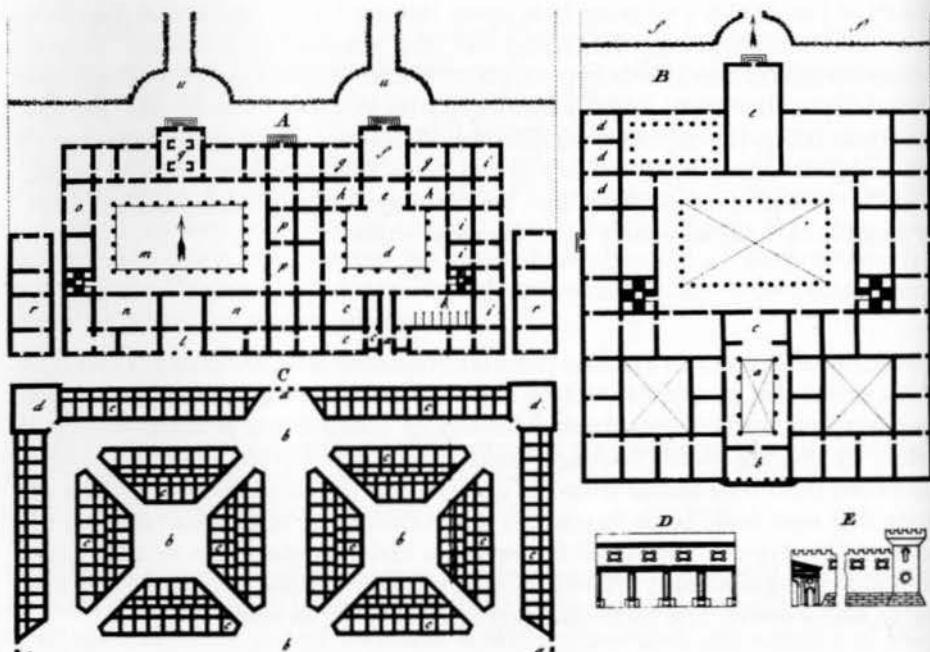
19 Various types of foundations.

From "Principj di Architettura Civile," Francesco Milizia, 1832.

20 Courtyard housing and walled marketplace. A) Plan of a Greek house. B) Plan of a Roman house.

C) Plan by Scipione Maffei showing half of the marketplace of Verona.

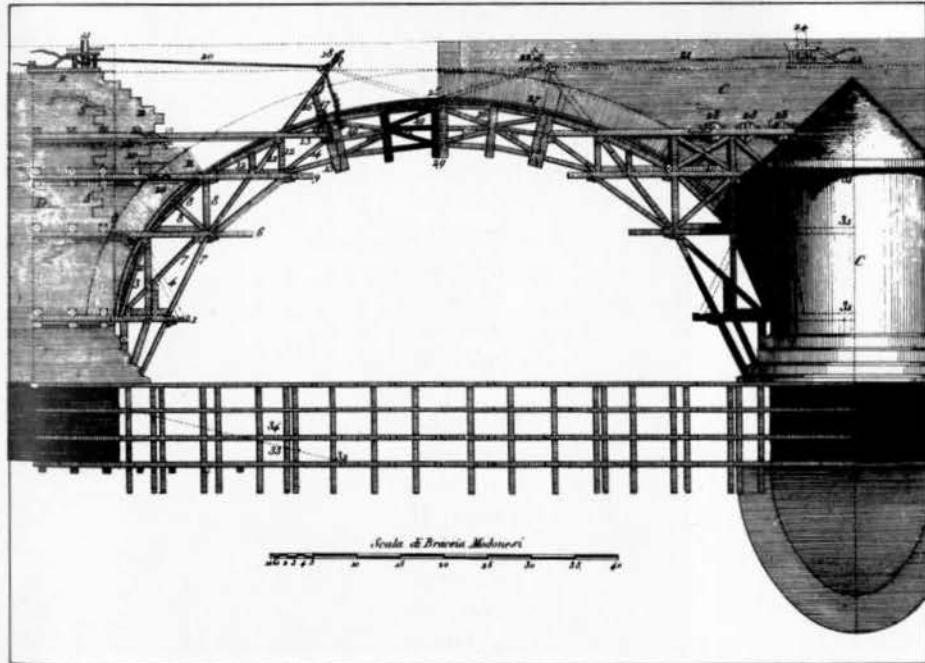
D) View of the shops of the marketplace (marked "c" in the plan). E) External view of the wall encircling the marketplace. From "Principj di Architettura Civile," Francesco Milizia, 1832.



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21 *The Doric order. From "Principj di Architettura Civile," Francesco Milizia, 1832.*

22 *Wooden armature for the construction of vaults. From "Principj di Architettura Civile," Francesco Milizia, 1832.*



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23 Corral of Valvanera, Seville, Spain.

24 Corral of Valvanera, Seville, Spain.

25 Calle Pais Vasco, parallel to the main street of the town of Viana in Spain.

26 "Alley of the Washerwomen" between Corso San Gottardo and the Naviglio canal, Milan.



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In precisely this sense of transformation the first forms and types of habitation, as well as temples and more complex buildings, were constituted. The *type* developed according to both needs and aspirations to beauty; a particular type was associated with a form and a way of life, although its specific shape varied widely from society to society. The concept of type thus became the basis of architecture, a fact attested to both by practice and by the treatises.

It therefore seems clear that typological questions are important. They have always entered into the history of architecture, and arise naturally whenever urban problems are confronted. Theoreticians such as Francesco Milizia never defined type as such, but statements like the following seem to be anticipatory: "The comfort of any building consists of three principal items: its site, its form, and the organization of its parts."¹⁰ I would define the concept of type as something that is permanent and complex, a logical principle that is prior to form and that constitutes it.

One of the major theoreticians of architecture, Quatremère de Quincy, understood the importance of these problems and gave a masterly definition of type and model:

"The word 'type' represents not so much the image of a thing to be copied or perfectly imitated as the idea of an element that must itself serve as a rule for the model The model, understood in terms of the practical execution of art, is an object that must be repeated such as it is; type, on the contrary, is an object according to which one can conceive works that do not resemble one another at all. Everything is precise and given in the model; everything is more or less vague in the type. Thus we see that the imitation of types involves nothing that feelings or spirit cannot recognize. . . .

"We also see that all inventions, notwithstanding subsequent changes, always retain their elementary principle in a way that is clear and manifest to the senses and to reason. It is similar to a kind of nucleus around which the developments and variations of forms to which the object was susceptible gather and mesh. Therefore a thousand things of every kind have come down to us, and one of the principal tasks of science and philosophy is to seek their origins and primary causes so as to grasp their purposes. Here is what must be called 'type' in architecture, as in every other branch of human inventions and institutions. . . . We have engaged in this discussion in order to render the value of the word *type*—taken metaphorically in a great number of works—clearly comprehensible, and to show the error of those who either disregard it because it is not a model, or misrepresent it by imposing on it the rigor of a model that would imply the conditions of an identical copy."¹¹

In the first part of this passage, the author rejects the possibility of type as something to be imitated or copied because in this case there would be, as he asserts in the second part, no "creation of the model"—that is, there would be no making of architecture. The second part states that in architecture (whether model or form) there is an element that plays its own role, not something to which the architectonic object conforms but something that is nevertheless present in the model. This is the *rule*, the structuring principle of architecture.

In fact, it can be said that this principle is a constant. Such an argument presupposes that the architectural artifact is conceived as a structure and that this structure is revealed and can be recognized in the artifact itself. As a constant, this principle, which we can call the typical element, or simply the type, is to be

found in all architectural artifacts. It is also then a cultural element and as such can be investigated in different architectural artifacts; typology becomes in this way the analytical moment of architecture, and it becomes readily identifiable at the level of urban artifacts.

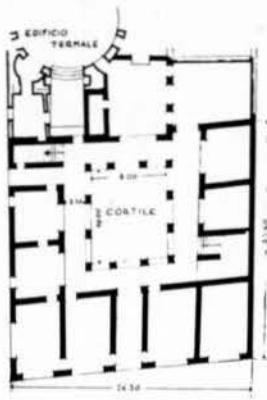
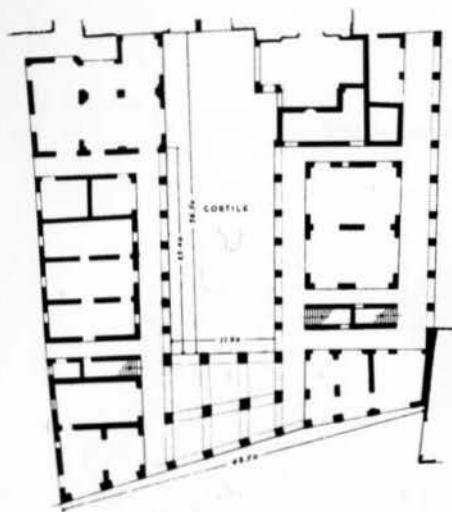
Thus typology presents itself as the study of types of elements that cannot be further reduced, elements of a city as well as of an architecture. The question of monocentric cities or of buildings that are or are not centralized, for example, is specifically typological; no type can be identified with only one form, even if all architectural forms are reducible to types. The process of reduction is a necessary, logical operation, and it is impossible to talk about problems of form without this presupposition. In this sense all architectural theories are also theories of typology, and in an actual design it is difficult to distinguish the two moments.

Type is thus a constant and manifests itself with a character of necessity; but even though it is predetermined, it reacts dialectically with technique, function, and style, as well as with both the collective character and the individual moment of the architectural artifact. It is clear, for example, that the central plan is a fixed and constant type in religious architecture; but even so, each time a central plan is chosen, dialectical themes are put into play with the architecture of the church, with its functions, with its constructional technique, and with the collective that participates in the life of that church. I tend to believe that housing types have not changed from antiquity up to today, but this is not to say that the actual way of living has not changed, nor that new ways of living are not always possible. The house with a loggia is an old scheme; a corridor that gives access to rooms is necessary in plan and present in any number of urban houses. But there are a great many variations on this theme among individual houses at different times.

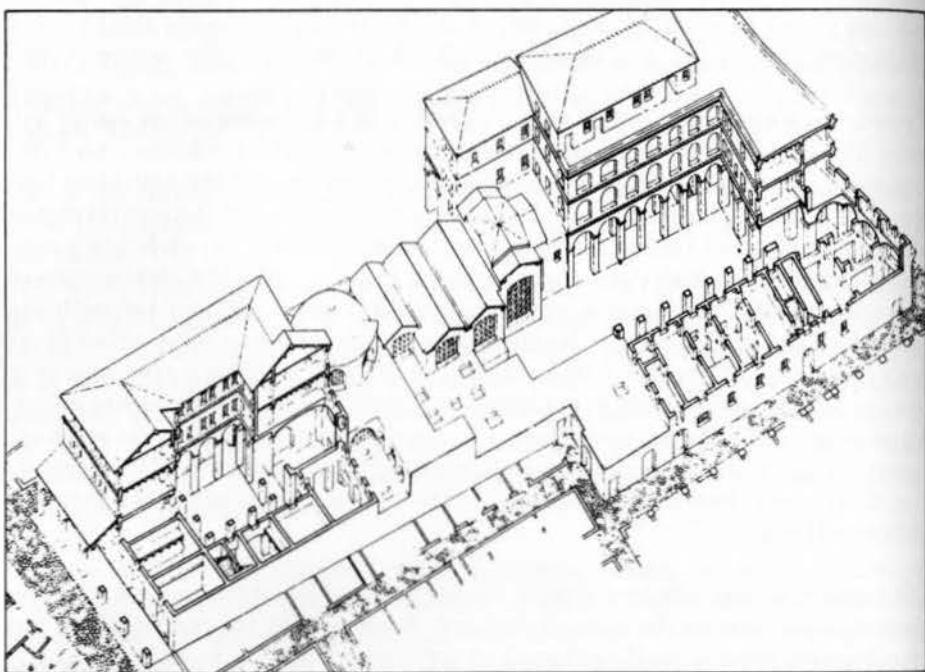
Ultimately, we can say that type is the very idea of architecture, that which is closest to its essence. In spite of changes, it has always imposed itself on the "feelings and reason" as the principle of architecture and of the city.

While the problem of typology has never been treated in a systematic way and with the necessary breadth, today its study is beginning to emerge in architecture schools and seems quite promising. I am convinced that architects themselves, if they wish to enlarge and establish their own work, must again be concerned with arguments of this nature.¹² Typology is an element that plays its own role in constituting form; it is a constant. The problem is to discern the modalities within which it operates and, moreover, its effective value.

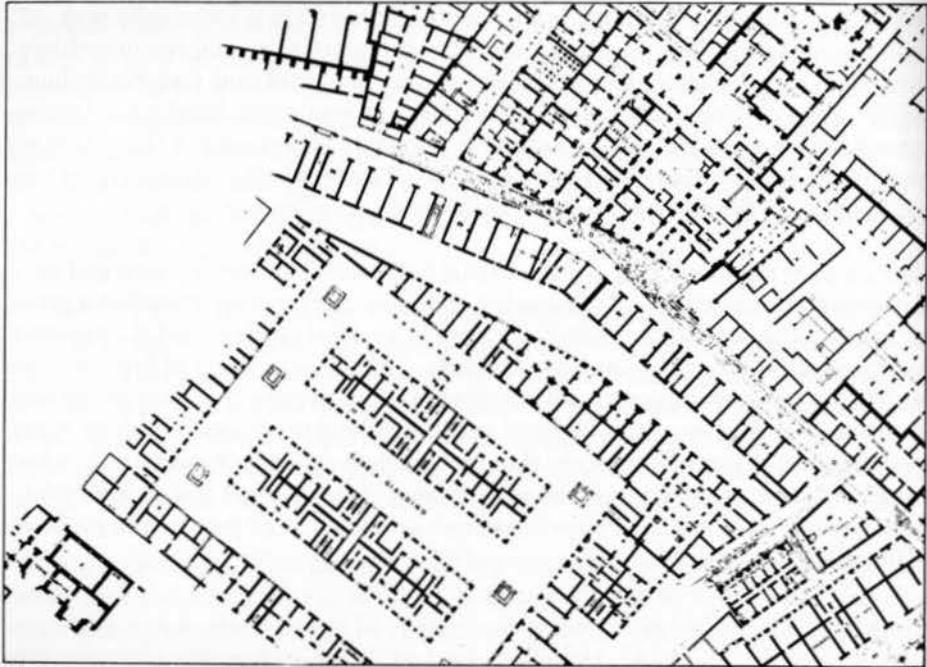
Certainly, of the many past studies in this field, with a few exceptions and save for some honest attempts to redress the omission, few have addressed this problem with much attention. They have always avoided or displaced it, suddenly pursuing something else—namely *function*. Since this problem of function is of absolutely primary importance in the domain of our inquiry, I will try to see how it emerges in studies of the city and urban artifacts in general and how it has evolved. Let us say immediately that the problem can be addressed only when we have first considered the related problems of description and classification. For the most part, existing classifications have failed to go beyond the problem of function.



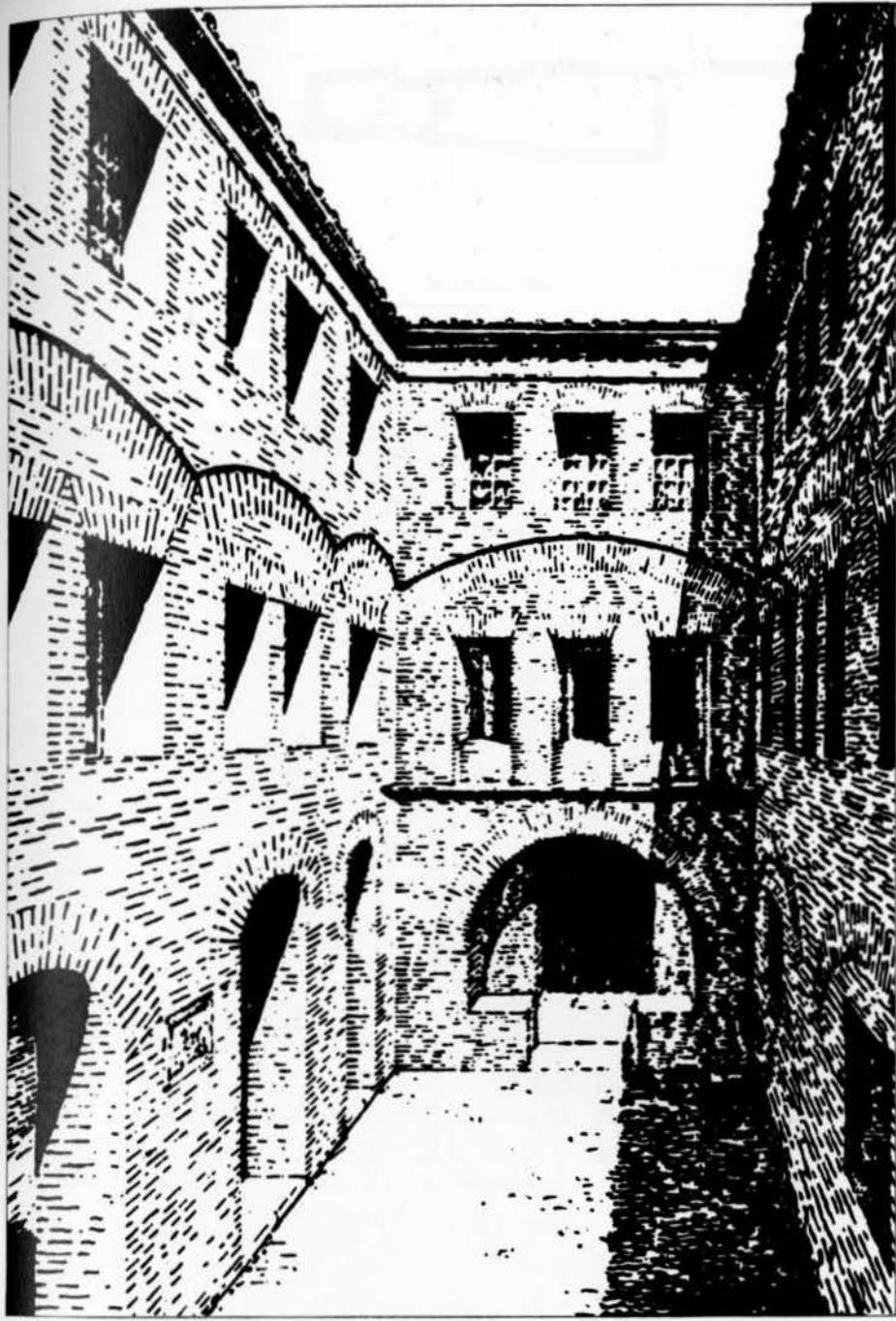
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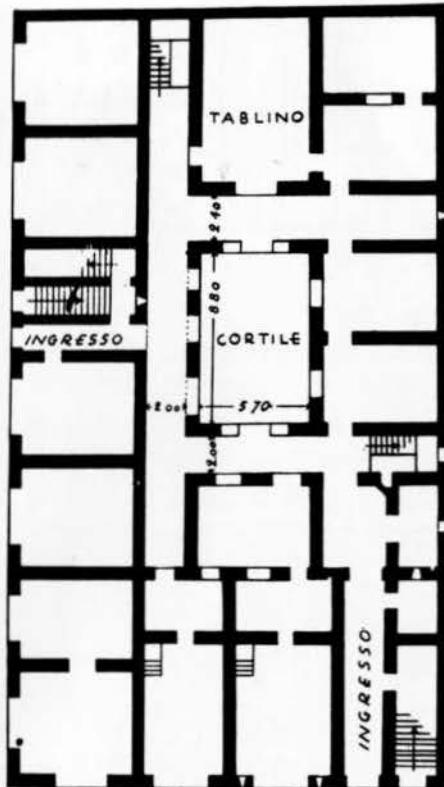
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27 Plan of the House of Aurighi, above, and Serapide, below, Ostia Antica, Rome, as reconstructed by Italo Gismondi, 1940.

28 Insula with the Houses of Aurighi and Serapide and bathhouse in the middle, Ostia Antica, Rome.
Axonometric drawing by Italo Gismondi.

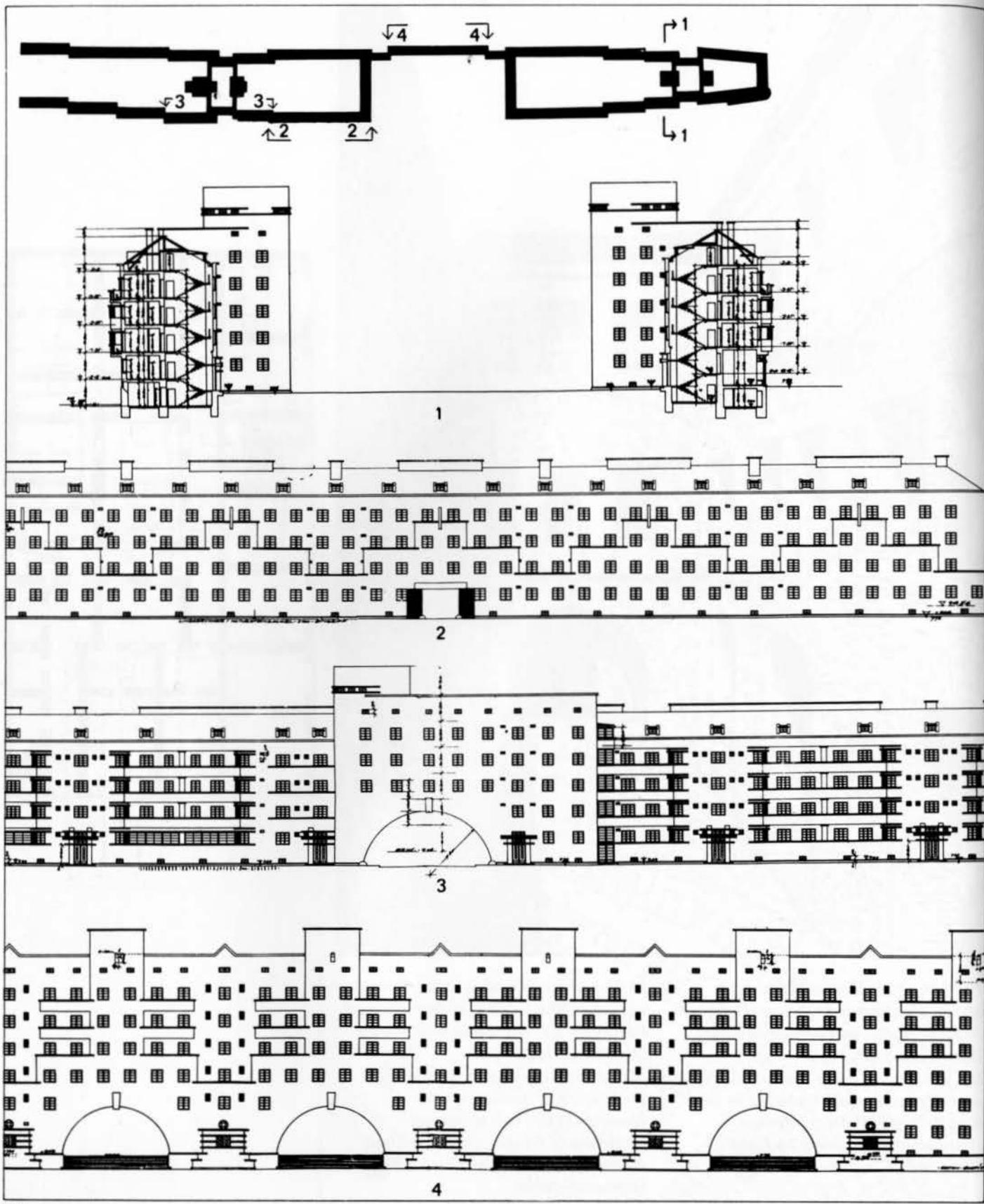


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29 The zone of Ostia Antica, Rome, including the Houses of Aurighi and Serapide, as reconstructed by Italo Gismondi, 1940.

30 Internal courtyard of House of Diana, Ostia Antica, Rome.

Rendering by Italo Gismondi.
31 House of Diana, Ostia Antica, Rome. Plan as reconstructed by Italo Gismondi, 1940.





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32 Section and elevations from
various orientations of
Heiligenstädter Strasse Nos. 82-90,
Karl Marx-Hof, Vienna, Karl Ehn.
33 Karl Marx-Hof, Vienna, begun
1927.

in their particular places the city was being conceived in both the past and the future.

It might be objected that in presenting the example of Rome I am only concerned with an ancient city. Such a criticism can be answered with two different arguments. First, that a rigorously observed premise of this study is that no distinction is to be made between the ancient city and the modern one, between a before and an after; the city is considered as a man-made object; and second, that cities which display exclusively modern urban features are by no means typical, since an inherent element of time.

mind the only rational element, the city as a matter of the city without formal part of their from this point of Phalansterists, community. These evident values, or and functional re- "modern" alterna-

I believe instead it is defined by and exerture. Although such works are become an end, and this is their being in the laws of architecture which they embody, desiring them.

inently a collective fact, essentially collective nature. The beauty resides both in the collective's reasons for

Monuments; Summary of the Critique of the Concept of Context

So far in this chapter we have principally considered the idea of *locus* in the sense of a singular place and event, the relationship of architecture to the constituting of the city, and the relationship between context and monument. As we have said, the concept of *locus* must be the object of specific research involving the whole history of architecture. The relationship between *locus* and design must also be analyzed in order to clarify the apparently unresolvable conflict between design as a rational element and an imposition, and the local and specific nature of place. This relationship takes in the concept of uniqueness.

As for the term *context*, we find that it is mostly an impediment to research. To context is opposed the idea of the monument. Beyond its historically determined existence, the monument has a reality that can be subjected to analysis; moreover, we can design a "monument." However, to do so requires an architecture, that is to say, a style. Only the existence of an architectural style permits fundamental choices, and from these choices the city develops.

I have also spoken of architecture as technics. The question of technics should not be underestimated by anyone addressing the problem of the city; clearly a discourse about images is fruitless if it is not concretized in the architecture that forms these images. Architecture becomes by extension the city. More than any other art, it has its basis in the shaping and subjection of material to a formal conception. **The city presents itself as a great architectural, man-made object.**

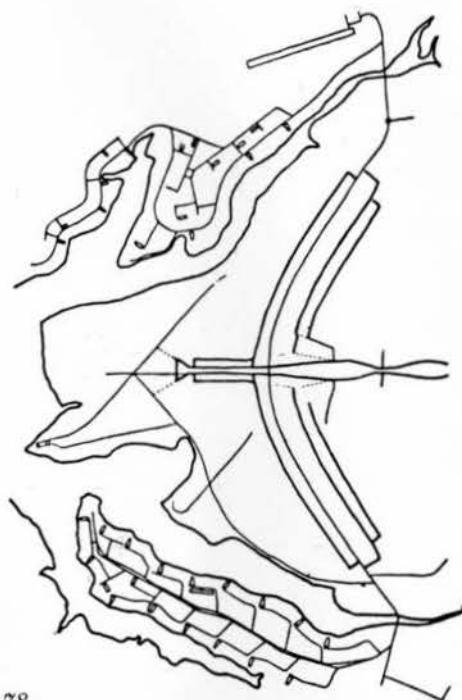
We have tried to show that a correspondence exists in the city between sign and event; but this is insufficient unless we extend our analysis to the problem of the genesis of architectural form. The architectural form of the city is exemplified in its various monuments, each of which has its own individuality. They are like dates: first one, then the other; without them we could not understand the passage of time. Although the present study is not concerned with architecture in itself but with architecture as a component of the urban artifact, we must note that it would be foolish to think that the problem of architecture can be resolved solely from the compositional viewpoint or newly revealed through a context or a purported extension of a context's parameters. These notions are senseless because context is specific precisely in that it is constructed through architecture. The singularity of any work grows together with its *locus* and its history, which themselves presuppose the existence of the architectural artifact.

I am therefore disposed to believe that the principal moment of an architectural artifact is in its technical and artistic formation, that is, in the autonomous principles according to which it is founded and transmitted. In more general terms, it is in the actual solution that each architect gives to his encounter with reality, a solution that is verifiable precisely because it relies on certain technics (which thus also necessarily constitute a limitation). Within technics, by which is meant the means and principles of architecture, is the capacity to be transmitted and to give pleasure: "We are far from thinking that architecture cannot please; we say on the contrary that it is impossible for it not to please, so long as it is treated according to its true principles . . . an art such as architecture, an art which immediately satisfies such a large number of our needs . . . how could it fail to please us?"³²

From the initial constitution of any architectural artifact a series of other artifacts begins; and in this sense architecture is extended to the design of a new city like Palmanova or Brasilia. We cannot judge the designs of these cities strictly as architectural designs. Their formation is independent, autonomous: they are specific designs with their own history. But this history also belongs to architecture as a whole because they are conceived according to an architectural technic or style, according to principles and a general architectural idea.

Without such principles we have no way to judge these cities. Thus we can approach Palmanova and Brasilia as two notable and extraordinary urban artifacts, each with its own individuality and its own historical development. However, the architectural artifact not only embodies the structure of this individuality, but it is precisely this structure that affirms the autonomous logic of the compositional process and its importance. In architecture lies one of the fundamental principles of the city.

78 Plan of Brasilia, Lucio Costa, 1957.



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The study of history seems to offer the best verification of certain hypotheses about the city, for the city is in itself a repository of history. In this book we have

The City as History

made use of the historical method from two different points of view. In the first, the city was seen as a material artifact, a man-made object built over time and retaining the traces of time, even if in a discontinuous way. Studied from this point of view—archaeology, the history of architecture, and the histories of individual cities—the city yields very important information and documentation. Cities become historical texts; in fact, to study urban phenomena without the use of history is unimaginable, and perhaps this is the only practical method available for understanding specific urban artifacts whose historical aspect is predominant. We have illustrated this thesis, in part the foundation of this study, in the context of the theories of Poète and Lavedan as well as in relation to the concept of permanence.

The second point of view sees history as the study of the actual formation and structure of urban artifacts. It is complementary to the first and directly concerns not only the real structure of the city but also the idea that the city is a synthesis of a series of values. Thus it concerns the collective imagination. Clearly the first and second approaches are intimately linked, so much so that the facts they uncover may at times be confounded with each other. Athens, Rome, Constantinople, and Paris represent ideas of the city that extend beyond their physical form, beyond their permanence; thus we can also speak in this way of cities like Babylon which have all but physically disappeared.

I would now like to consider the second point of view further. The idea of history as the structure of urban artifacts is affirmed by the continuities that exist in the deepest layers of the urban structure, where certain fundamental characteristics that are common to the entire urban dynamic can be seen. It is significant that Carlo Cattaneo, with his positivist background, in his study of the civic evolution of cities which is considered the foundation of Italian urban histories, discovered a principle that could be articulated only in terms of the actual history of those cities.³³ He found in the cities the “unchanging terms of a geography prior to the Romans which remained attached to the walls of the cities (*municipi*).”³⁴

In his description of the development of the city of Milan in the period after the Empire, he speaks of the city’s predominance with respect to other Lombard centers, a predominance justified neither by its size, greater wealth or population, nor by other apparent facts. It was more something intrinsic to the nature of the city, almost a typological characteristic, of an undefinable order: “This predominance was innate to the city; it was the tradition of a greatness prior to the Ambrosian church, prior to the papacy, the Empire, the Roman conquest: *Mediolanum Gallorum Caput*.³⁵ But this quasi-mystical principle of order then became the principle of urban history, resolving itself into the permanence of civilization: “The permanence of the *municipio* is another fundamental fact and is common to almost all Italian histories.”³⁶

Even in the times of greatest decadence, as in the late Empire when the cities appeared as *semirutarum urbium cadavera* (the cadavers of half-ruined cities),³⁷ they were not in reality dead bodies, said Cattaneo, but only in a state of shock. The relationship between the city and its region was a characteristic sign of the *municipio* since “the city forms an indivisible body with its region.”³⁸ In time of war and invasions, in the most trying moments for communal liberty, the unity between the region and the city was an extraordinary force; at times

the region regenerated the destroyed city. The history of the city is the history of civilization: "In the roughly four centuries of domination by the Longobards and the Goths, barbarism grew . . . cities were not valued except as fortresses. . . . The barbarians were extinguished along with the cities to which they had laid waste. . . ."³⁹

Cities constitute a world in themselves; their significance, their permanence, is expressed by Cattaneo as an absolute principle: "Foreigners are astonished to see Italian cities persist in attacking one another, although they are not surprised to see this between one country and another; this is because they do not understand their own militant temperament and national character. The proof that the source of the enmity that encircled Milan was its power or, more correctly, its ambition, is that many of the other cities, when they saw it destroyed and in ruins, thought that they would no longer have to fear it and joined to raise it from the ruins."⁴⁰

Cattaneo's principle can be associated with many of the themes developed here; it has always seemed to me that those very deep layers of urban life which he had in mind are largely to be found in monuments, which possess the individuality of all urban artifacts, as has been emphasized many times in the course of this study. That a relationship between a "principle" of urban artifacts and form exists in Cattaneo's thinking is apparent, even if one only examines his writings on the Lombard style and the beginning of his description of Lombardy, where the land, cultivated and made fertile over the course of centuries, immediately becomes for him the most important testimony of a civilization.

His comments on the polemics over the Piazza del Duomo in Milan bear witness, on the other hand, to the unresolved difficulties inherent in this complex problem. Thus his study of Lombard culture and Italian federalism finishes by refuting all the arguments, real and abstract, in the debate over Italian unification and over the old and new meanings that the cities of the Italian peninsula were coming to have in the national framework. His study of federalism not only allowed him to avoid all the errors endemic to the contemporary nationalist rhetoric, but also, in recognizing the obstacles to it, to see fully the new framework in which the cities had begun to find themselves.

To be sure the great Enlightenment and the positivist enthusiasm that had animated the cities had waned by the time of Italian unification; but this was not the only cause of the cities' decline. Cattaneo's proposals and the local style which Camillo Boito preached were able to give back to the cities a meaning that had been obscured. There was also a deeper crisis, which was characterized by the great debate in Italy which took place after unification over the choice of a capital. This debate turned on Rome. Antonio Gramsci's observation on this subject is most insightful: "To Theodor Mommsen, who asked what universal idea directed Italy to Rome, Quintino Sella responded, 'That of science. . .' Sella's response is interesting and appropriate; in that historical period science was the new universal idea, the basis of the new culture that was being elaborated. But Rome did not become the city of science; a great industrial program would have been necessary, and this did not happen."⁴¹ Sella's response, that is, remained vague and ultimately rhetorical, even if fundamentally correct; to achieve such a goal it would have been necessary to implement an industrial program without fearing the creation of a modern and conscious Roman working class ready to participate in the development of a national polities.

The study of this debate over Rome as capital is of great interest for us even today; it engaged politicians and scholars of all persuasions, all of whom were concerned over which tradition the city should be the repository of, and toward which Italy it should direct its destiny as capital. Through this historical circumstance, the significance of certain interventions which tend to characterize Rome as a modern city and to establish a relationship between its past and the images of the other principal European capitals emerges more clearly. To see this debate over the capital merely as a manifestation of nationalist rhetoric—which was undoubtedly present—means to place this important process within limits too narrow to judge it; a similar process was typical for a number of other countries in various periods.

Instead, it is necessary to investigate how certain urban structures come to be identified with the model of a capital, and what relationships are possible between the physical reality of a city and this model. It is noteworthy that for Europe, but not only for Europe, this model was Paris. This is true to such a degree that it is not possible to understand the structure of many modern capitals—Berlin, Barcelona, Madrid, along with Rome and others—without recognizing this fact. With Paris the entire historical-political process in the architecture of the city takes a specific turn; but the meaning of this relationship can only be discerned by elaborating the specific ways in which it came about.

As always, a relationship is established between the urban artifacts structuring the city and the imposition of an ideal project or general scheme, and the pattern of this relationship is very complex. Certainly there are cities that realize their own inclinations and others that do not.

The Collective Memory

With these considerations we approach the deepest structure of urban artifacts and thus their form—the architecture of the city. “The soul of the city” becomes the city’s history, the sign on the walls of the municipium, the city’s distinctive and definitive character, its memory. As Halbwachs writes in *La Mémoire Collective*, “When a group is introduced into a part of space, it transforms it to its image, but at the same time, it yields and adapts itself to certain material things which resist it. It encloses itself in the framework that it has constructed. The image of the exterior environment and the stable relationships that it maintains with it pass into the realm of the idea that it has of itself.”⁴²

One can say that the city itself is the collective memory of its people, and like memory it is associated with objects and places. The city is the *locus* of the collective memory. This relationship between the *locus* and the citizenry then becomes the city’s predominant image, both of architecture and of landscape, and as certain artifacts become part of its memory, new ones emerge. In this entirely positive sense great ideas flow through the history of the city and give shape to it.

Thus we consider *locus* the characteristic principle of urban artifacts; the concepts of *locus*, architecture, permanences, and history together help us to understand the complexity of urban artifacts. The collective memory participates in the actual transformation of space in the works of the collective, a transformation that is always conditioned by whatever material realities oppose it. Understood in this sense, memory becomes the guiding thread of the entire complex urban structure and in this respect the architecture of urban artifacts is distin-

guished from art, inasmuch as the latter is an element that exists for itself alone, while the greatest monuments of architecture are of necessity linked intimately to the city. ". . . The question arises: in what way does history speak through art? It does so primarily through architectural monuments, which are the willed expression of power, whether in the name of the State or of religion. A people can be satisfied with a Stonehenge only until they feel the need to express themselves in form. . . . Thus the character of whole nations, cultures, and epochs speaks through the totality of architecture, which is the outward shell of their being."⁴³

Ultimately, the proof that the city has primarily itself as an end emerges in the artifacts themselves, in the slow unfolding of a certain idea of the city, intentionally. Within this idea exist the actions of individuals, and in this sense not everything in urban artifacts is collective; yet the collective and the individual nature of urban artifacts in the end constitutes the same urban structure. Memory, within this structure, is the consciousness of the city; it is a rational operation whose development demonstrates with maximum clarity, economy, and harmony that which has already come to be accepted.

With respect to the workings of memory, it is primarily the two modes of actualization and interpretation that interest us; we know that these depend on time, culture, and circumstances, and since these factors together determine the modes themselves, it is within them that we can discover the maximum of reality. There are many places, both large and small, whose different urban artifacts cannot otherwise be explained; their shapes and aspirations respond to an almost predestined individuality. I think, for example, of the cities of Tuscany, Andalusia, and elsewhere; how can common general factors account for the very distinct differences of these places?

The value of history seen as collective memory, as the relationship of the collective to its place, is that it helps us to grasp the significance of the urban structure, its individuality, and its architecture which is the form of this individuality. This individuality ultimately is connected to an original artifact—in the sense of Cattaneo's principle: *it is an event and a form*. Thus the union between the past and the future exists in the very idea of the city that it flows through in the same way that memory flows through the life of a person; and always, in order to be realized, this idea must not only shape but be shaped by reality. This shaping is a permanent aspect of a city's unique artifacts, monuments, and the idea we have of it. It also explains why in antiquity the founding of a city became part of the city's mythology.

The Attic historians, who tried to give their country a list of kings, made out that in Erichthonios, the second primaeval Athenian with the curious birth-legend, which we know from the stories concerning Athene, a Kekrops reappeared. . . . Allegedly also, he built the shrine of Athena Polias, already mentioned, set up the wooden image of the goddess in it, and was buried on the spot. . . . It seems rather that his significant name, which emphatically signifies a "chthonian," a being from the underworld, originally meant not a ruler, not a king of this our world above, but the mysterious child who was worshipped in mysteries and mentioned in seldom-told tales. . . . The Athenians called themselves Kekropidai after a primaeval being, but Erechtheidai after this their king and hero.⁴⁴

Athens

All quotations from foreign language sources have been put into English by the translators of this book unless otherwise noted.

Introduction to the First American Edition

1. Javier Aguilera Rojas and Luis J. Moreno Rexach, *Urbanismo español en América* (Madrid: Editora Nacional, 1973).

Introduction Urban Artifacts and a Theory of the City

1. De Saussure, *Cours de linguistique générale*, ed. Charles Bally and Albert Sechehaye (Paris: Payot, 1922); trans. W. O. Henderson and W. H. Chaloner, *Course in General Linguistics* (New York: Philosophical Library, 1959).
2. Numa-Denis Fustel de Coulanges, *La Cité antique. Études sur le culte, le droit, les institutions de la Grèce et de Rome* (Paris: Durand, 1864; subsequent eds., Hachette); Mommsen, *Römische Geschichte*, 4 vols. (2d ed., Berlin: Weidmann, 1856-57); trans. William P. Dickson, *The History of Rome* (New York: Charles Scribner's Sons, 1891).
3. Freyre, *Casa-Grande & Senzala. Formação da Família Brasileira sob o Regime de Economia Patriarcal* (Rio de Janeiro: José Olympio, 1958); Freyre, *Sobrados e mucambos. Decadência do patriarcado rural e desenvolvimento urbano* (Rio de Janeiro: J. Olympio, 1951), vol. 2.
4. Vidal de la Blache, *Principes de géographie humaine* (1st ed., Paris: Armand Colin, 1922).
5. Milizia, *Principij di Architettura Civile* (Milan, 1832), ed. Giovanni Antolini; 2d ed. (Milan, 1847), ed. L. Masieri, S. Majocchi; reprinted with "Riproduzione anastatica conforme all'originale" (Milan: Gabrielle Mazzotta, 1972).

Chapter 1 The Structure of Urban Artifacts

1. Mumford discusses the idea of the city as a work of art in the introduction to his most beautiful book, synthesizing the most complex and stimulating material from studies on the city, especially from the Anglo-Saxon literature (not excluding Victorian eclecticism), and then developing it. "The city is a fact in nature, like a cave, a run of mackerel or an ant-heap. But it is also a conscious work of art, and it holds within its communal framework many simpler and more personal forms of art. Mind takes form in the city; and in turn, urban forms condition mind, for space, no less

than time, is artfully reorganized in cities: in boundary lines and silhouettes, in the fixing of horizontal planes and vertical peaks, in utilizing or denying the natural site. . . . The city is both a physical utility for collective living and a symbol of those collective purposes and unanimities that arise under such favoring circumstances. With language itself, it remains man's greatest work of art" (Lewis Mumford, *The Culture of Cities* [New York: Harcourt, Brace & Co., 1938]), p. 5. The conception of the city as a work of art is often the characteristic content and experience in an artist's work; sometimes the name of an artist becomes associated with a city. One particularly important example of a study of the relationships between the city and the literary work, and of the city itself as a work of art, is Thomas Mann's lecture on Lübeck of June 5, 1926. Mann, "Lübeck als geistige Lebensform," in *Zwei Festreden* (Leipzig: Philipp Reclam, June 1928), pp. 7-47. A complex analysis of urban structure appears in modern form as early as Montaigne's travel journal, and is developed by scholars, travelers, and artists of the Enlightenment. Michel Eyquem de Montaigne, *Journal de voyage en Italie par la Suisse et l'Allemagne en 1580 et 1581*, with notes by M. De Querlon (Paris, 1774); ed. Maurice Rat (Paris: Garnier frères, 1955); trans. W. B. Waters, *The Journal of Montaigne's Travels in Italy by Way of Switzerland and Germany in 1580 and 1581*, 3 vols. (New York: E.P. Dutton & Co., 1903).

2. **The city and the nature of collective artifacts.** Lévi-Strauss, *Tristes Tropiques* (Paris: Plon, 1955); trans. John Russell (London: Hutchinson & Co., 1961). On p. 122 of the French text, the author speaks of "La ville . . . la chose humaine par excellence." On p. 121, he introduces some initial considerations on the quality of space and the mysterious character of the evolution of the city. In the behavior of individuals everything is rational, but this does not mean that an unconscious moment cannot be found in the city; for the city, in terms of the relationship between the individual and the collective, offers a strange opposition. "Cities have often been likened to symphonies and poems, and the comparison seems to me a perfectly natural one; they are, in fact, objects of the same kind. The city may even be rated higher since it stands at the point where nature and artifice meet" (p. 127). In his elaboration of this argument, Lévi-Strauss echoes the conclusions of ecological studies concerning the relationship between man and the environment and between man and the shaping of the environment. To under-

stand the city in a concrete way means to grasp the individuality of its inhabitants—an individuality that is the basis of the monuments themselves: "To understand a city, beyond its monuments, beyond the history of its stones, is to rediscover the specific way of being of its inhabitants."

3. Halbwachs, *La mémoire collective*, preface by Jean Duvignaud, introduction by J. Michel Alexandre (Paris: Presses Universitaires de France, 1950; rev. and enlarged ed., 1968).

4. **Cattaneo's conception.** Cattaneo, "Agricoltura e morale," first published in *Atti della Società d'incoraggiamento d'arti e mestieri. Terza solenne distribuzione dei premi alla presenza di S.A.I.R. il Serenissimo Arciduca Vicerè nel giorno 15 maggio 1845* (Milan, 1845), pp. 3-11; later in the first volume of *Scritti completi editi ed inediti di Carlo Cattaneo*, ed. Arcangelo Ghisleri, 3 vols. (1st ed., Milan, 1925-26). It is now republished along with the other work attributed to Cattaneo, "Industria e morale," in the *opera omnia* published by F. Le Monnier: Carlo Cattaneo, *Scritti economici*, 3 vols., ed. Alberto Bertolini (Florence, 1956), vol. III, pp. 3-30. The passage cited is on pp. 4-5. On these pages the author gives the complete framework of his concept of *natural artifacts*, in an analysis in which linguistics, economics, history, geography, geology, sociology, and politics come together to characterize the structure of artifacts. Even more than his Enlightenment heritage, his positivism comes to light in his approach to individual problems. "The German language uses the same word for the art of building and the art of cultivating: the word 'agriculture' (*Ackerbau*) does not ring of cultivation, but of construction; the colonist is a builder (*Bauer*). When the ignorant German tribes saw in the shadow of the eagle how the Romans built bridges, streets, walls, and with little different effort transformed the shores of the Rhine and Mosel into vineyards, they embraced all of those works with only one name. Yes, a people must build its fields, just as it must build its cities" (p. 5). Bridges, streets, walls, are the beginning of a transformation; this transformation shapes man's surroundings and itself becomes history. The clarity of this formulation makes Cattaneo one of the first urban scholars in the modern sense when he applies it to the problem of the region; consider his intervention on the subject of the problems that arose with the new railroad routes. Thus Gabriele Rosa wrote in his biography of Cattaneo: "The problem was to open an artery between Milan and Venice. Mathematicians rigorously studied the geographical question,

not considering the population, history, and topical economics, elements which rebelled against mathematical ordering. The versatile and profound mind of Cattaneo was necessary to bring a clear light to bear on this new and serious question. . . . He sought a route that would permit the fullest private gain and public utility. He said that the work need not be sacrificed to the tyranny of the terrain; that the aim was not so much to pass through quickly, but to make speed profitable; that coming and going would be more frequent at short distances; that the greatest flow would be on the line uniting the persistent and most ancient centers; and that in *Italy whoever disregards individuals' love of their country will always sow on sandy ground.*" Rosa, "Commemorazione di Carlo Cattaneo" (read at the meeting of the Lombard Institute of Science and Letters, November 11, 1869), in *Rendiconti del Reale Istituto Lombardo*, (Milan, 1869), pp. 1061-1082; republished as "Carlo Cattaneo nella vita e nelle opere," introduction to *Scritti completi editi ed inediti di Carlo Cattaneo*, vol. I, pp. XIII-XXXIX.

5. Lynch, *The Image of the City* (Cambridge, Mass.: Technology Press and Harvard Univ. Press, 1960).

6. Sorre, "Géographie urbaine et écologie," *Urbanisme et architecture. Etudes écrites et publiées en l'honneur de Pierre Lavedan* (Paris: Henri Laurens, 1954), pp. 341-44; Mauss, "Essai sur les variations saisonsières des sociétés eskimo. Étude de morphologie sociale," with M.H. Beuchat, in *L'année sociologique*, 1904-1905 (Paris: Félix Alcan, 1906), pp. 39-132. See also n. 1, chap. 3.

7. On the city as a man-made object, see Oscar Handlin and John Burchard, eds., *The Historian and the City* (Cambridge, Mass.: M.I.T. Press and Harvard Univ. Press, 1963). John Summerson speaks of "the city as artifact" in his essay "Urban Forms" in this anthology, pp. 165-76. Anthony N. B. Garvan, in "Proprietary Philadelphia as Artifact" (pp. 177-201), sheds light on the term from the standpoint of the archaeologist and the anthropologist and then argues that "if, therefore, the term can be applied to an urban complex at all, it should be applied in such a way as to seek all those aspects of the city and its life for which the material structure, buildings, streets, monuments were properly the tool or artifact" (p. 178). It is in this sense that Cattaneo speaks of the city as a physical thing, as a construction of human labor: "Labor builds houses, dikes, canals, streets" ("Industria e morale," *Scritti economici*, vol. III, p. 4).

8. Sitte, *Der Städtebau nach seinen*

- künsterlichen Grundsätzen* (Vienna: Carl Gräser Verlag, 1889); trans. George R. Collins and Christiane Grasemann Collins, *City Planning According to Artistic Principles* (London: Phaidon, and New York: Random House, 1965). The passage cited appears on p. 91 of the English edition. Sitte's biography is interesting. He was essentially a technician; he studied at the Vienna Polytechnic and founded the state professional school, the Staatsgewerbeschule, in 1875 in Salzburg, and later the one in Vienna.
9. Jean-Nicolas-Louis Durand, *Précis des leçons d'architecture données à l'Ecole Polytechnique*, 2 vols. (Paris, 1802-1805; 2d ed., 1809). The sentence quoted is from the 2d ed., vol. II, p. 21.
10. Francesco Milizia, *Principj di Architettura Civile*, cit. n. 4 of the Introduction to this book; the phrase quoted is from the beginning of the second part, "Della comodità," p. 221.
11. Antoine Chrysostôme Quatremère de Quincy, *Dictionnaire historique d'architecture comprenant dans son plan les notions historiques, descriptives, archéologiques, biographiques, théoriques, didactiques et pratiques de cet art*, 2 vols. (Paris, 1832). The passage quoted is from vol. 2, the section on "Type." Quatremère's **definition of type** has recently been picked up by Giulio Carlo Argan in a particularly interesting way, in Argan, "Sul concetto di tipologia architettonica," in *Progetto e destino* (Milan: Casa editrice Il Saggiatore, 1965), pp. 75-81. See also Louis Haute-coeur, *Histoire de l'architecture classique en France*, 7 vols. (Paris: A. et J. Picard, 1943-57), in particular vol. V, *Révolution et Empire. 1792-1815* (1953), where Haute-coeur writes, "As Schneider noted, Quatremère affirmed that there is a 'correlation between scale, forms, and the impressions that our spirit receives from them'" (p. 122).
12. Among the new aspects of the research by architects on the **problems of typology**, the lectures given by Carlo Aymonino at the Istituto di Architettura di Venezia are particularly interesting. In one of them, "The Formation of a Concept of Building Typology," he states, "We can thus attempt to distinguish some 'characteristics' of building typologies which allow us to identify them better: a) singleness of theme, even if [the type is] subdivided into one or more activities in order to derive a reasonable elementarity or simplicity from the organism; this also applies in more complex cases; b) indifference—in theoretical formulations—to context, that is, to a precise urban location (does a significant interchangeability derive from this?) and the

formation of a relationship concerned only with its own plan as the single relevant boundary (an incomplete relationship); c) the overcoming of building code regulations to the extent that the type is characterized precisely by its own architectural form. The type in fact is *also* conditioned by codes (of hygiene, security, etc.) but not *only* by them" (p. 9). Aymonino's lectures are found in two volumes published by the Istituto Universitario di Architettura di Venezia, *Aspetti e problemi della tipologia edilizia. Documenti del corso di caratteri distributivi degli edifici. Anno accademico 1963-1964* (Venice, 1964); and *La formazione del concetto di tipologia edilizia. Atti del corso di caratteri distributivo degli edifici. Anno accademico 1964-1965* (Venice, 1965). Some of these lectures are also republished with revisions in Carlo Aymonino, *Il significato della città* (Bari: Editori Laterza, 1975).

13. Malinowski, *A Scientific Theory of Culture and Other Essays* (Chapel Hill: Univ. of North Carolina Press, 1944). **Functionalism in geography.** The concept of organic function was introduced by Friedrich Ratzel in 1891, who, by analogy with physiology, compares the city to a bodily organ; the functions of the city are those which justify its own existence and development. More recent studies distinguish between functions associated with centrality and the relationship to the general region (*Allgemeine Funktionen*) and those which are associated with particular functions (*Besondere Funktionen*). In the latter studies, function has a greater spatial reference. For the use of this term in relation to ecology, see n. 29 of this chapter. From its inception, geographical functionalism found itself in serious difficulty in trying to classify *commercial functions*, which had naturally acquired prominence. In *Anthropogeographie*, Ratzel defined the city as "a longstanding concentration of men and their houses, which covers a considerable amount of land and is found at the center of the major commercial arteries." Hermann Wagner too insists on the city as a point of concentration of commerce (*Handel und Verkehr*). Ratzel, *Anthropogeographie*, 2 vols. (Stuttgart: J. Engelhorn, 1882 and 1891; 3d ed., 1909 and 1922). For a summary of the theses of the German geographers, see the dictionary *Allgemeine Geographie*, Gustav Fochler-Hauke, ed. (Frankfurt am Main: Fischer Bücherei, 1959), in particular the entry "Siedlungsgeographie," by Günter Glauert, pp. 286-311. See also Jacqueline Beaujeu-Garnier and Georges Chabot, *Traité de géographie urbaine* (Paris: Armand Colin, 1963), and John Harold George Lebon, *An*

- Introduction to Human Geography* (London: Hutchinson Univ. Library, 1952; 5th ed. rev., 1963).
14. Chabot, *Les villes. Aperçu de géographie humaine* (Paris: Armand Colin, 1948; 3d ed., 1958). Chabot classifies the principal functions of the city as military, commercial, industrial, therapeutic, intellectual and religious, and administrative. Ultimately he admits that in the city the various functions become mixed with one another, ending up acquiring the value of an original artifact; however, he is more concerned with elementary and original functions than with permanent artifacts. In Chabot's system, function, together with the plan, is seen as a moment of urban life. His conception is thus the richer and more articulated.
 15. Weber, *Wirtschaft und Gesellschaft. Grundriss der Verstehenden Soziologie*, 4th ed., ed. and with an introduction by Johannes Winckelmann, 2 vols. (Tübingen: J.C.B. Mohr-Paul Siebeck, 1956).
 16. Jean Tricart, *Cours de géographie humaine*, 2 vols: vol. I, *L'habitat rural*; vol. II, *L'habitat urbain* (Paris: Centre de Documentation Universitaire, 1963). Tricart observes, "Like every study of artifacts considered in themselves, urban morphology presupposes a convergence of givens customarily drawn from different disciplines: urbanism, sociology, history, political economy, law itself. It is sufficient that this convergence has as its aim the analysis and explanation of a concrete artifact, of a landscape, for us to be able to state that it has its place in the framework of geography" (vol. II, p. 4).
 17. Richard Updegraff Ratcliff, "The Dynamics of Efficiency in the Locational Distribution of Urban Activities," in Harold Melvin Mayer and Clyde Frederick Kohn, eds., *Readings in Urban Geography* (Chicago: Univ. of Chicago Press, 1959), pp. 299-324; the passage cited is on p. 299.
 18. Marcel Poète, *Introduction à l'Urbanisme. L'évolution des villes, la leçon de l'antiquité* (Paris: Boivin & Cie., 1929). Concerning the influence which Poète exercised on urban studies, see the journal *La vie urbaine*, published by the Institut d'Urbanisme de l'Université de Paris à la Sorbonne, under the direction of Lavedan. The journal, issued three times yearly from 1920 to 1940, published studies and research on the city, primarily historical in character and of a notably high level. Poète's monumental work, perhaps unequaled in the entire body of studies on the city, is *Une vie de cité. Paris de sa naissance à nos jours*, 4 vols. (Paris: Auguste Picard, 1924-1931); vol. I, *La jeunesse. Des origines aux temps modernes* (1924); vol. II, *La cité de la Renaissance. Du milieu du XV^e siècle à la fin du XVI^e siècle* (1927); vol. III, *La spiritualité de la cité classique. Les origines de la cité moderne (XVI^e-XVII^e siècles)* (1931); album, *Six cents illustrations d'après les documents, accompagnées de légendes et d'un exposé historique* (1925). The studies on Paris are condensed in Marcel Poète, *Comment s'est formé Paris* (Paris: Hachette, 1925). Mumford described this book as a basic text rich with the learning of an entire lifetime.
 19. *Introduction à l'Urbanisme . . .*, p. 60.
 20. Lavedan's works include *Géographie des villes* (Paris: Gallimard, 1936; rev. ed., 1959) and *Histoire de l'urbanisme*, 3 vols. (Paris: Henri Laurens, 1926-1952); vol. I, *Antiquité. Moyen-Age* (1926; 2d ed. with the section on antiquity completely revised, with Jeanne Hugueney, 1966); vol. II, *Renaissance et temps modernes* (1941; rev. ed., 1959); vol. III, *Epoque contemporaine* (1952). Also by Lavedan, *Les villes françaises* (Paris: Vincent, Fréal & Cie., 1960).
 21. **Enlightenment thought.** On the relationship between buildings and the city, Voltaire, for example, wrote: "Many citizens have constructed magnificent buildings, but more refined in *le grand goût* on the inside than the outside, and satisfying the taste for luxury of private individuals still more than they enhance the city." François Marie Arouet de Voltaire, *Le siècle de Louis XIV* (first definitive ed., 1768), in *Oeuvres complètes de Voltaire*, 4 vols. (Paris, 1827-29). The passage is from vol. III, p. 2993. See also, Jean Mariette, *L'Architecture françoise, ou Recueil des Plans, Elevations, Coupes et Profiles des Eglises, Palais, Hôtels, & Maisons particulières de Paris & des Chateaux et Maisons de Campagne ou de Plaisance des Environs, & des plusiers autres Endroits de France, Bâtis nouvellement pas les plus habils Architectes et levés et mesurés exactement sur les lieux*, 3 vols. (Paris, 1727-1832). This great collection of reliefs of buildings, edited by publisher and print dealer Jean Mariette, was re-edited by Louis Hautecœur, *L'architecture françoise* (Paris-Brussels: G. Van Oest, 1927). See also Anthony Blunt, *François Mansart and the Origins of French Classical Architecture* (London: Warburg Institute, 1941).
 22. Francesco Milizia, *Principj di Architettura Civile*. Milizia's treatise is divided into three parts: "Parte prima. Della bellezza," "Parte seconda. Della comodità," "Parte terza. Della solidità delle fabbriche."
 23. Ibid., p. 371, from "Parte seconda."
 24. Ibid., p. 663, from "Conclusione della

texte, 2 vols. (Paris: J. Baudry, and Vienna: Lehmann et Wentzel, 1875-80).

21. Aymonino, "Analisi delle relazioni tra i servizi e le attrezzature," pp. 33-45, cit. n. 12, chap. 1. The passage quoted is on p. 44. This essay was republished, in Aymonino, *Il significato delle città*, cit. n. 12, chap. 1.

22. On **Rome** and the **Roman Forum**, see the following works: Ferdinando Castagnoli, Carlo Cecchelli, Gustavo Giovannoni, and Mario Zocca, *Topografia e urbanistica di Roma* (Bologna: Licinio Cappelli, 1958); Jérôme Carcopino, *La vie quotidienne à Rome à l'apogée de l'empire* (Paris: Hachette, 1939); Leon Homo, *Rome impériale et l'urbanisme dans l'antiquité* (Paris: Albin Michel, 1951); Giuseppe Lugli, *Roma antica. Il centro monumentale* (Rome: Giovanni Bardi, 1946); Ludovico Quaroni, "Una città eterna—quattro lezioni da ventisette secoli," in *Urbanistica, Roma città e pianificazione* (Turin, n.d.), pp. 5-72; enlarged and republished in Quaroni, *Immagine di Roma* (Bari: Laterza, 1969; 2d ed., 1976); Pietro Romanelli, *Il foro romano* (Bologna: Licinio Cappelli, 1959). Of exceptional interest for information about Roman artifacts seen as part of a continuum, and concerning the emergence of urban artifacts, see Quaroni's work, for example this passage on p. 15: "What interests us most, however, is that the *pomoerium* was the boundary of the city in terms of building, the boundary, we would say, of the developmental plan and of the building code; these had no value outside of it since the city was considered to terminate beyond this point. For economy of defense, distance, and administration, it was understood as a zone of continuous building, as restricted as possible. Naturally, nothing stopped the poorest segment of the population, those who did not enjoy all the rights of citizenship, among other things, from building their illegal *barrache* outside the *pomoerium*; the *continentia* accounted for vast villages, just as do the *bidonvilles* and illegal and semi-rural suburbs that proliferate today around Rome, where the low price of land and the presence of easy means of communication favor settlement." From an analytical standpoint such as this, Rome, and especially Imperial Rome, with its defects, abuses, and contradictions, ends up as an image strangely akin to that of the large modern city. Further on Quaroni insists upon the relationship between the Roman principle of administration and of construction and the concrete conditions of life in Rome, a relationship that characterized the persistence of original characteristics and their mixture with more heterogeneous im-

ported elements. A major and systematic study of the urban vicissitudes of Rome by way of the enormous analytical material that is available would certainly be of fundamental value to the urban sciences.

23. Virgil, *Aeneid*, Bk. VIII, 11. 359-60. The *Carinae* were located on the Esquiline hill, where one of the richest and most monumental quarters of Augustan Rome rose; Rosa Calzecchi Onesti notes that they were located "on the small elevation where S. Pietro in Vincoli sits today and in the valley below." See Calzecchi's translation and introduction of *Eneide* (Turin: Giulio Einaudi, 1967).

24. Titus Livius, *Ab urbe condita*, Bk. V, chap. LV.

25. Aristotle, *Politics* (Cambridge, Mass.: Harvard Univ. Press, 1962), Bk. VII, p. 593.

26. Pietro Romanelli, *Il foro romano*, p. 26.

27. Marcel Poète, *Introduction à l'urbanisme*, p. 368.

28. Ferdinando Castagnoli, Carlo Cecchelli, et al., *Topografia e urbanistica di Roma*. De Tournon's comment is quoted in the Appendix to "Parte Terza. Roma dal Rinascimento al 1870," by Gustavo Giovannoni, pp. 537-38. See also, Paolo Marconi, *Giuseppe Valadier* (Rome: Officina Edizioni, 1964), esp. chap. IX, "L'occupazione francese," pp. 168-87.

29. Domenico Fontana, *Della trasportazione dell'Obelisco Vaticano . . .*, Bk. I, p. 101; cited by Sigfried Giedion, *Space, Time and Architecture* (cit. n. 22, chap. 2), p. 93.

30. Giedion, op. cit., p. 93.

31. Ibid., pp. 96-98.

32. Jean-Nicolas-Louis Durand, *Précis des leçons d'architecture . . .*, vol. I, p. 17 (cit. n. 9, chap. 1). See also, Durand, *Partie graphique des cours d'architecture faits à l'Ecole Royale Polytechnique depuis sa réorganisation, précédée d'un sommaire des leçons relatives à ce nouveau travail* (Paris, 1821), as well as Aymonino's references to Durand in the texts cited n. 12, chap. 1.

33. Carlo Cattaneo, *La città considerata come principio ideale delle istorie italiane* (Milan, 1858); ed. G. A. Belloni (Florence: Vallecchi, 1931); republished as *La Città*, ed. G. Titta Rosa (Milan-Rome: Valentino Bompiani, 1949); and included in the complete works, *Carlo Cattaneo. Scritti storici e geografici*, 4 vols., ed. Gaetano Salvemini and Ernesto Sestan (Florence: Felice Le Monnier, 1957), vol. II, pp. 384-487. Salvemini, in his introduction to *La più belle pagine di Carlo Cattaneo scelte da G. Salvemini* (Milan, 1922), calls Cattaneo's *Notizie naturali e civili su la Lom-*

bardia . . . (of 1844) the "model of regional anthropogeography, even today unsurpassed in Italy" (pp. I-XXXI, republished in Salvemini, *Opere*, vol. II: *Scritti sul Risorgimento* [Milan: Giangiacomo Feltrinelli, 1961], pp. 371-92). See also Croce's judgment; he saw it as a rift in Italian history ("Cattaneo did not write a history of Italy, but offered a 'rift' in *Notizie naturali e civili della Lombardia . . .* [sic], which for their admirable objectivity hardly seem to have been written just a few years before 1848"). Benedetto Croce, *Storia della storiografia italiani nel secolo decimonono*, 2 vols. (4th ed., Bari: Laterza, 1964), vol. I, p. 211.

34. Cattaneo, *La città considerata . . .*, in *Scritti storici e geografici*, vol. II, p. 391.

35. Ibid., p. 416.

36. Ibid., p. 387.

37. Ibid., p. 396.

38. Ibid., p. 386.

39. Ibid., p. 406.

40. Ibid., p. 421.

41. Gramsci, *Quaderni del carcere*, 3: *Il Risorgimento* (Turin: Giulio Einaudi, 1964). The quotation is from the paragraph on Quintino Sella, pp. 160-61. Concerning the debate on **Rome as capital**, see Alberto Caracciolo's beautiful book, *Roma capitale. Dal Risorgimento alla crisi dello stato liberale* (Rome: Edizioni Rinascita, 1976); and Italo Insolera, *Roma moderna. Un secolo di storia urbanistica* (2d ed., Turin: Giulio Einaudi, 1962). Caracciolo reports parts of Cavour's speech of March 25, 1861, where the Piedmontese maintained that Rome was "the only Italian city that did not have exclusively municipal [local] memories" (p. 20). See also the passage on pp. 10-11 of Caracciolo's book: "In the national movement, Rome was above all a unifying force of extraordinary moral power. If there was a common tradition to be found in the entire peninsula, it was called Rome. No study of the origins of Italian national consciousness can fail to take into account the magnetic attraction of this name over the centuries. Every time an attempt has been made to recover a unity in the history of Italy, one has had to return, by one route or another, to this point. The power of ancient Rome and the authority of Papal Rome are the characteristic elements that determine and almost fill up by themselves the history of Italy over two millenia. Every active force in the peninsula must reckon with the religious, political, and moral power summarized in the name of this city. . . . Again at the dawn of the Risorgimento, the name of Rome appears frequently, as much with the neo-Guelphs as with liberal and democratic laymen, because the problem of the

Church is always there, and it is such as to condition the success of every instance of unification and renewal. One can attempt to destroy it, or put it in the background, or neutralize it, but in no case can this decisive entity in Italy be ignored."

42. P. 132 (cit. n. 3, chap. 1).

43. Jacob Burckhardt, *Force and Freedom* (cit. n. 4, chap. 3), p. 163.

44. Károly Kerényi, *Die Mythologie der Griechen, Die Götter- und Menschheitsgeschichten* (Zurich: Rhein-Verlag, 1951); *Die Helden der Griechen* (Zurich: Rhein-Verlag, 1958); trans. H. J. Rose, *The Heroes of the Greeks* (London: Thames and Hudson, 1959). The passage cited is from the English edition, p. 213. See also, Carl Gustav Jung and Karl Kerényi, *Einführung in das Wesen der Mythologie* (Zurich: Rascher, 1941); trans. R. F. C. Hull, *Essays on a Science of Mythology* (London: Routledge and Kegan Paul, 1951). I would have liked to explore some of the ramifications of Kerényi's work on the concept of *locus* and on the significance of the origin of urban artifacts. However, in addition to its being beyond the scope of this study, a research effort of this type would demand years of work and the availability of a vast quantity of analytical material. In his *Science of Mythology* Kerényi investigates the founding of cities, as this subject continually touches on his work on the gods and heroes of Greece; he sheds light on both the multiplicity and the originality which constitute cities and also on the significance of the founder of the city as well as of its original design. "It is not only the psychologist who finds tri- and quadripartite [systems existing] together. Ancient traditions know the importance of the number three in city plans, in Etruria as in Rome itself: they tell of three towers, three streets, three quarters, three temples or tripartite temples. We cannot but observe a multiplicity even when we seek the singular and the shared: this is the nature of the original. And this already implies at the least an answer to the question of whether it is worthwhile to inquire into the particular origin of different local and chronological formations."

45. Karl Marx, *Zur Kritik der politischen Oekonomie*, in *Marx-Engels Werke* (Berlin: Dietz, 1961), vol. 13. The passage is from the introduction which Marx wrote between August and September of 1857. English version in Karl Marx, *On History and People*, vol. 7 of The Karl Marx Library, ed. Saul K. Padover (New York: McGraw-Hill, 1977), pp. 79-80.

46. Marcel Poëte, *Introduction à l'Urbanisme* (cit. n. 18, chap. 1), p. 232.

47. Carlo Cattaneo, *La città con-*