

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.

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.

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

Chapter 1

The Structure of Urban Artifacts

The Individuality of Urban Artifacts

15 Palazzo della Ragione, Padua, Italy.



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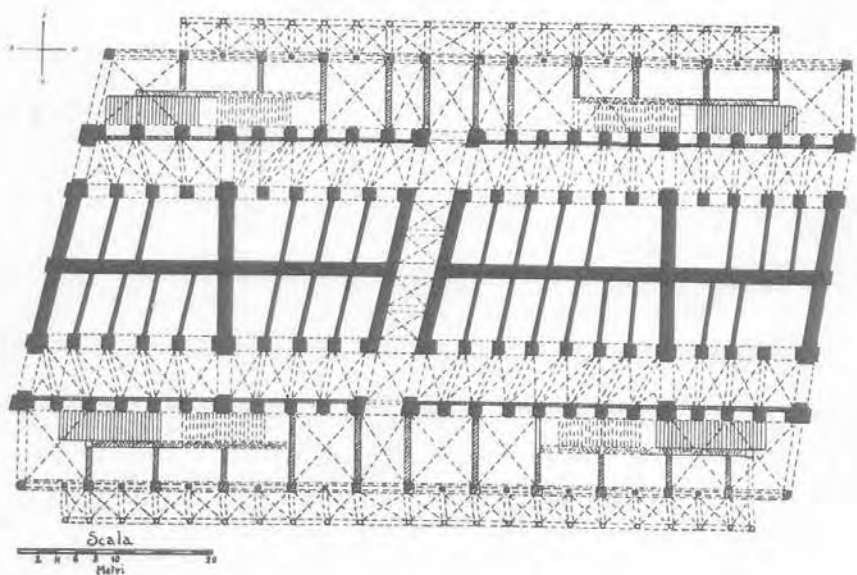
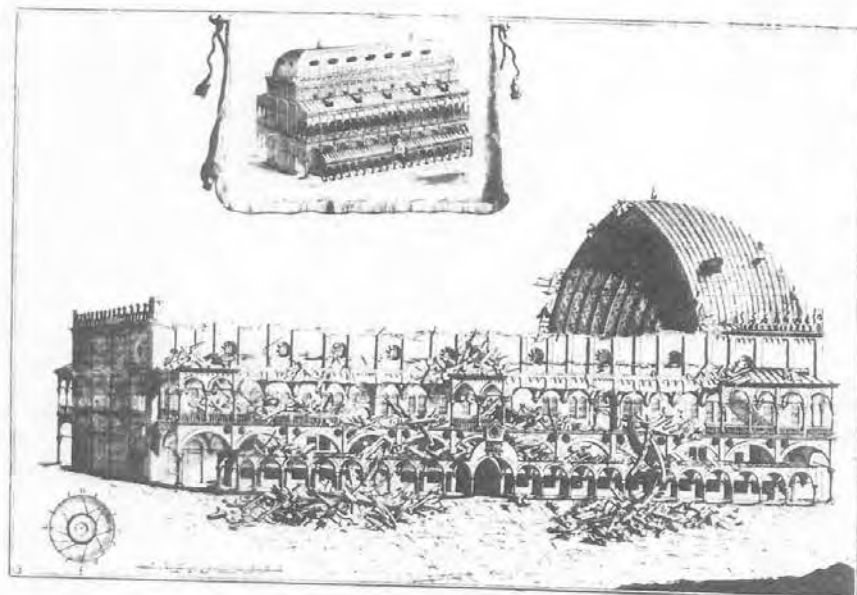
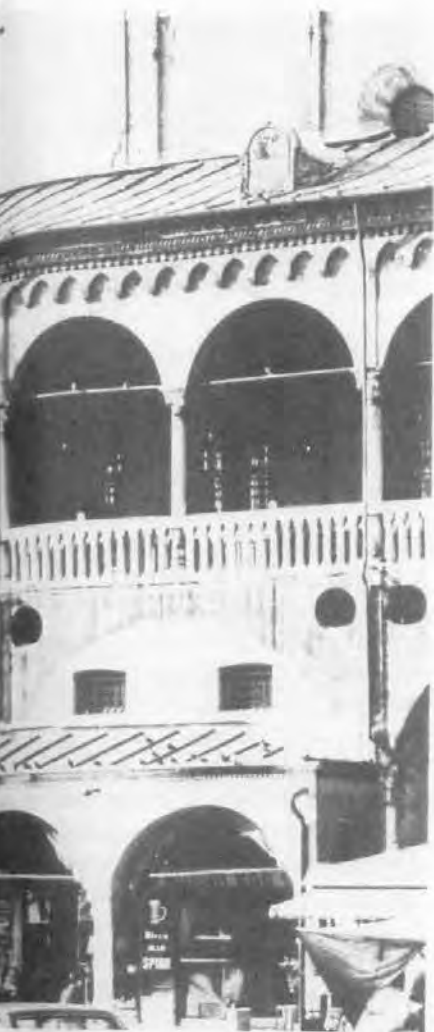
16 Palazzo della Ragione, Padua, Italy.

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.





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

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"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

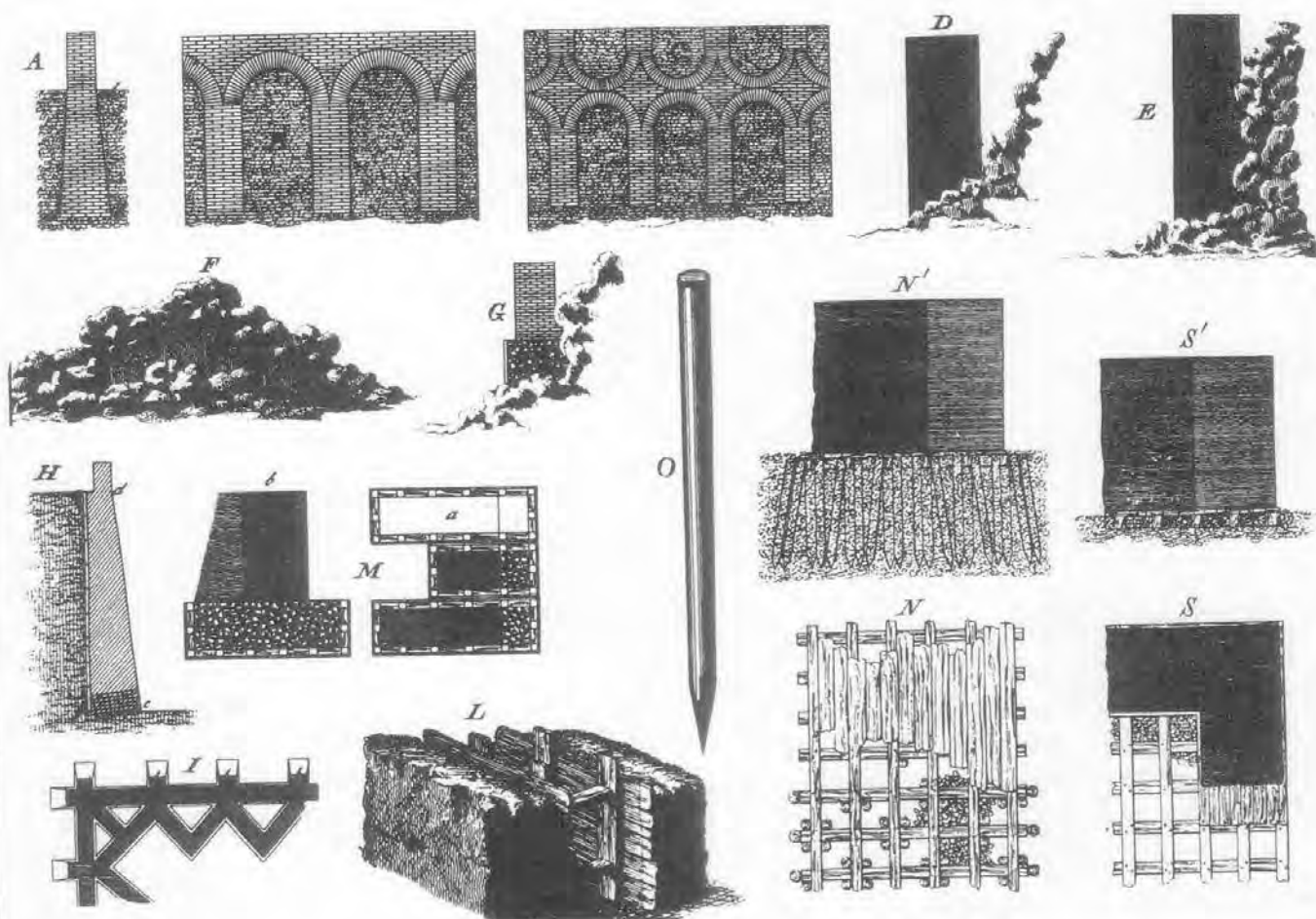
Sitte's admonition is important for its empiricism, and it seems to me that this takes us back to certain American experiences which we mentioned above, where artistic quality can be seen as a function of the ability to give concrete form to a symbol. Sitte's lesson beyond question helps to prevent many 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.

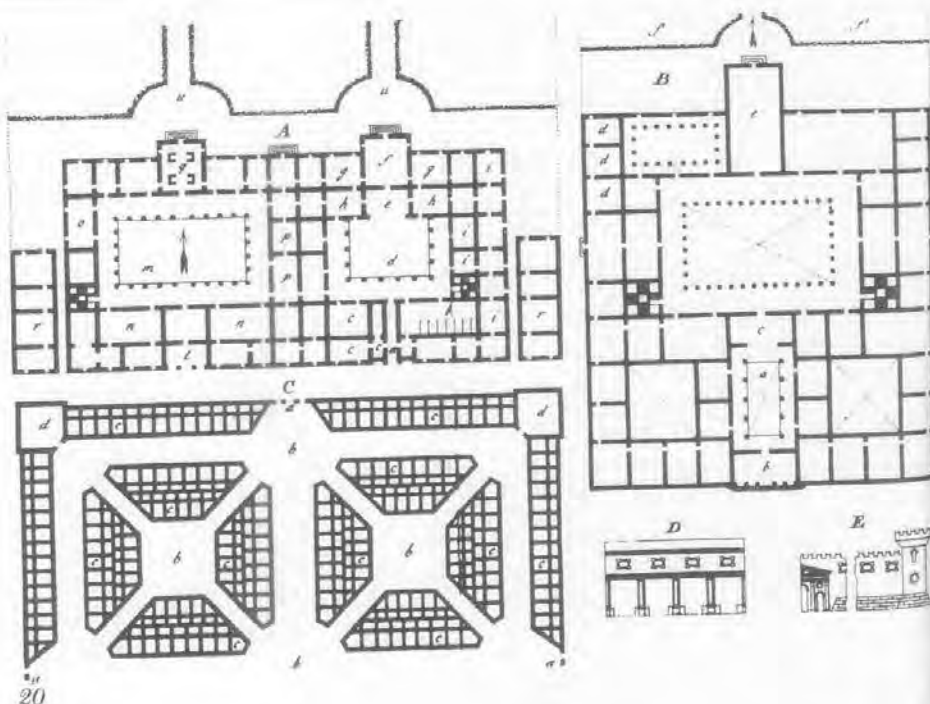
We must begin with a question that opens the way to the problem of classification—that of the typology of buildings and their relationship to the city. This relationship constitutes a basic hypothesis of this work, and one that I will analyze from various viewpoints, always considering buildings as moments 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

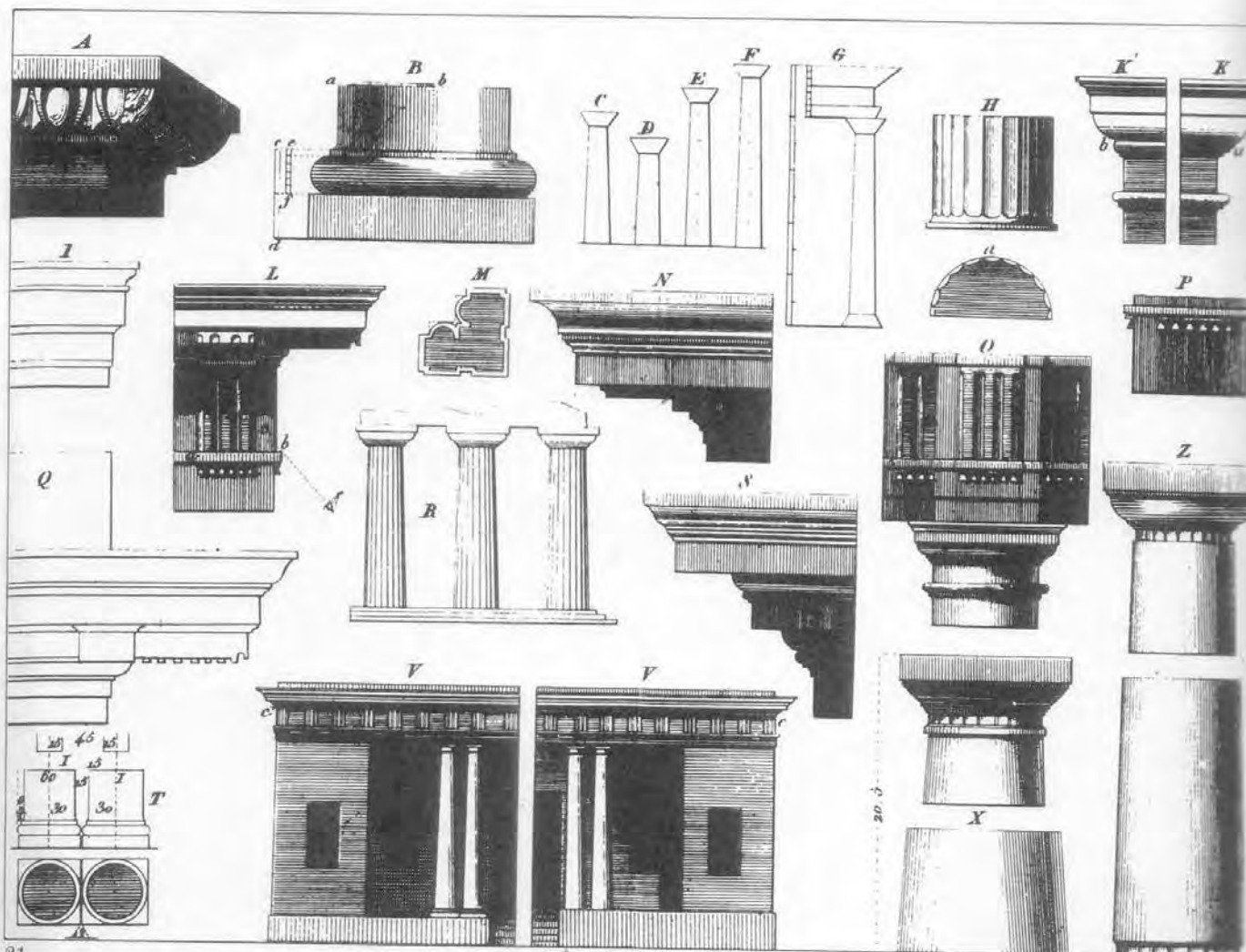
The city as above all else a human thing is constituted of its architecture and of all those works that constitute the true means of transforming nature. Bronze Age men adapted the landscape to social needs by constructing artificial islands of brick, by digging wells, drainage canals, and watercourses. 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

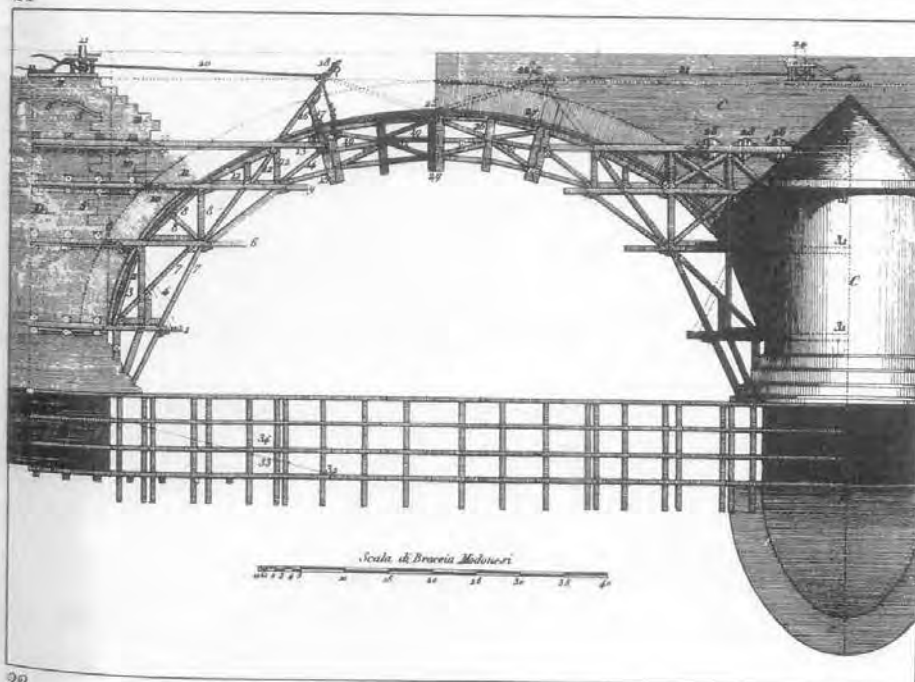


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 19 Various types of foundations.
 From "Principj di Architettura
 Civile," Francesco Milizia, 1832.
 20 Courtyard housing and walled
 marketplace. A) Plan of a Greek
 house. B) Plan of a Roman house.
 C) Plan by Scipione Maffei showing
 half of the 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.



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.

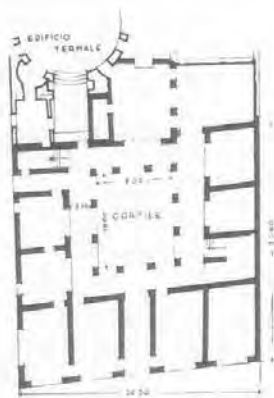
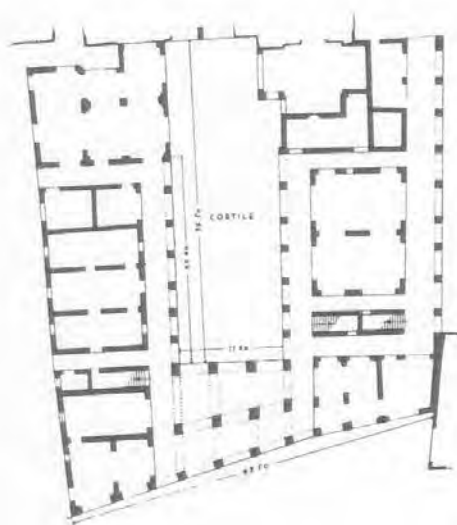
Thus typology presents itself as the study of types of elements that cannot be further reduced, elements of a city as well as of an architecture. The question of monocentric cities or of buildings that are or are not centralized, for example, is specifically typological; no type can be identified with 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.

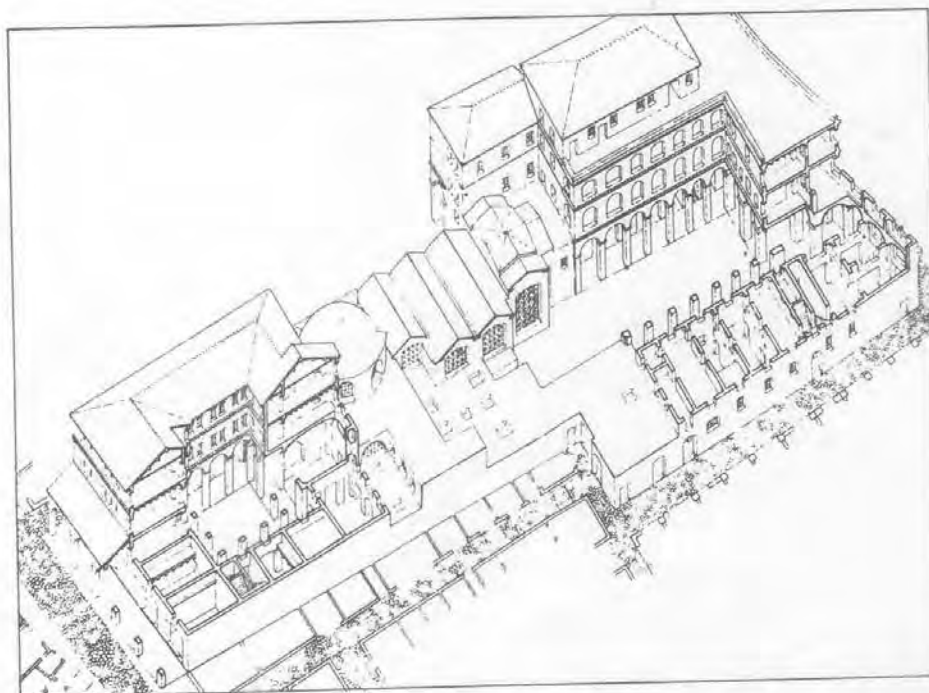
Ultimately, we can say that type is the very idea of architecture, that which is closest to its essence. In spite of changes, it has always imposed itself on the "feelings and reason" as the principle of architecture and of the city.

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.



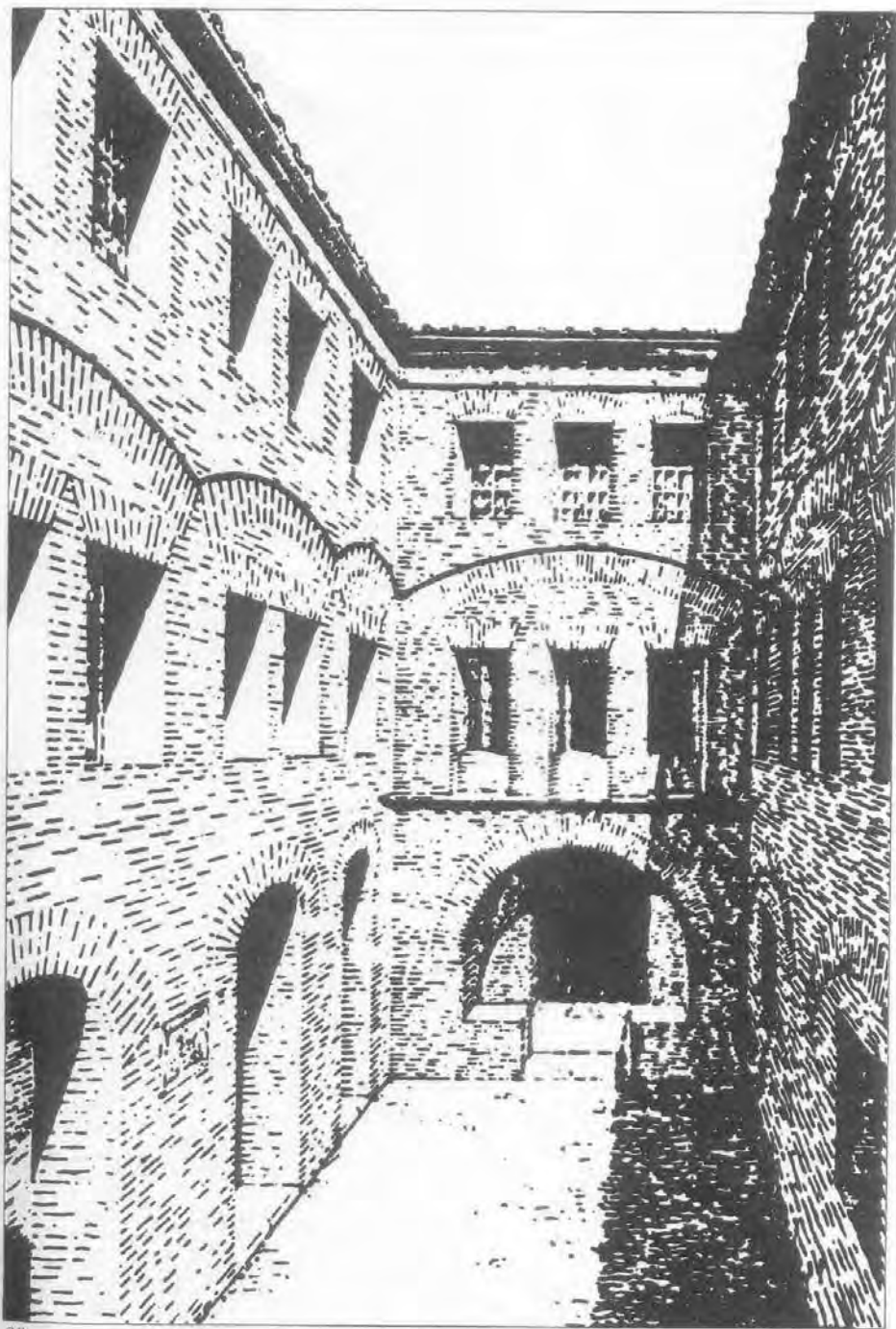
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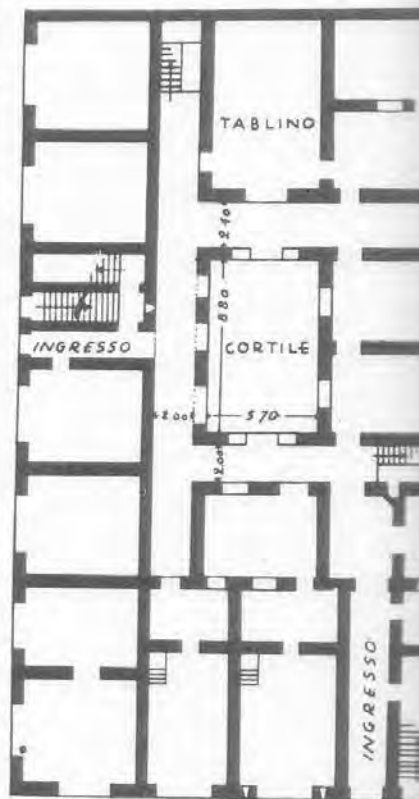


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27 Plan of the House of Aurighi,
above, and Serapide, below, Ostia
Antica, Rome, as reconstructed by
Italo Gismondi, 1940.
28 Insula with the Houses of Aurighi
and Serapide and bathhouse in the
middle, Ostia Antica, Rome.
Axonometric drawing by Italo
Gismondi.

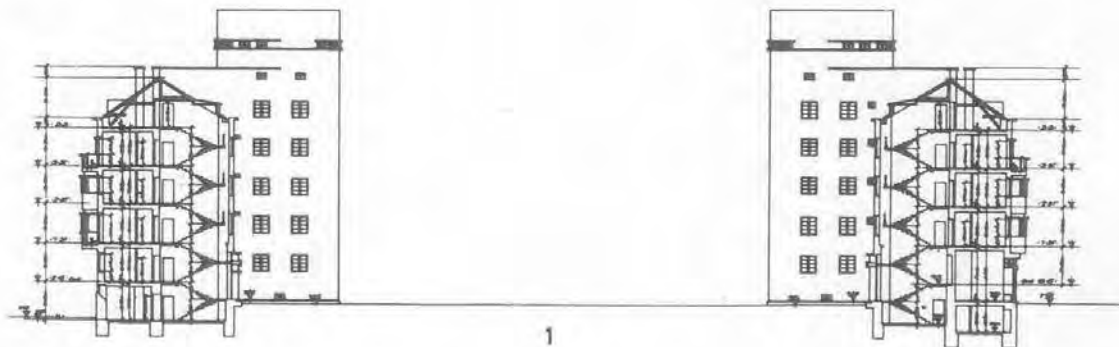
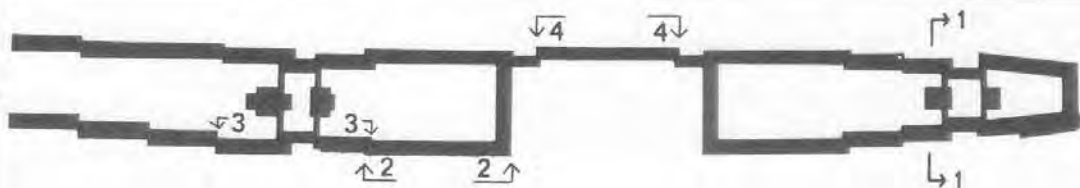
29 The zone of Ostia Antica, Rome,
including the Houses of Aurighi and
Serapide, as reconstructed by Italo
Gismondi, 1940.

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.



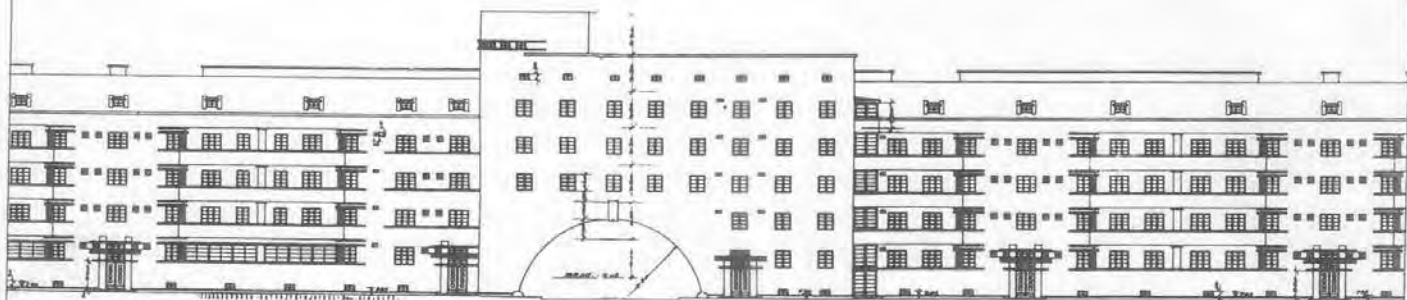
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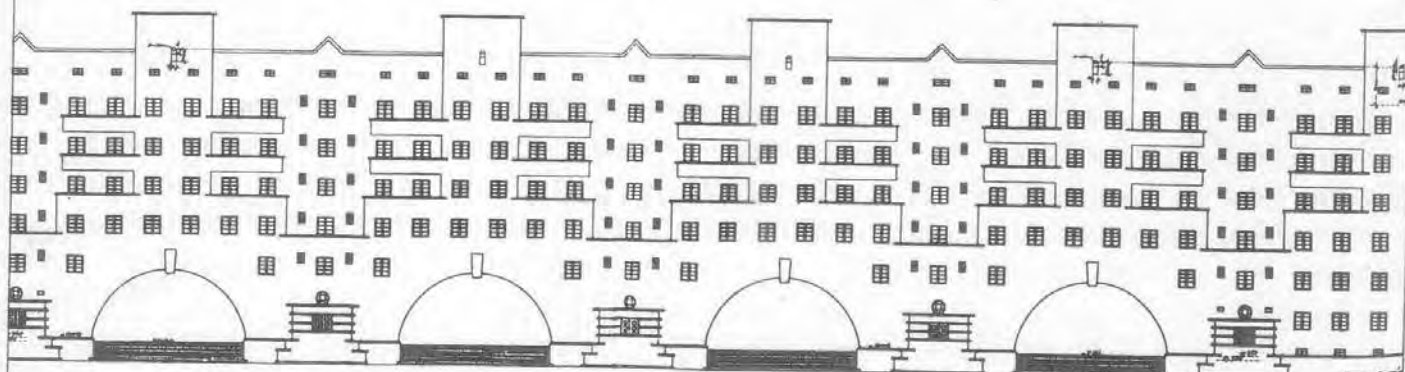
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33
 32 Section and elevations from
 various orientations of
 Heiligenstädter Strasse Nos. 82-90,
 Karl Marx-Hof, Vienna, Karl Ehn.
 33 Karl Marx-Hof, Vienna, begun
 1927.