

Moudon, A. V. (1994).
Getting to know the built landscape: typomorphology.

In K. A. Franck & L. H. Schneekloth (Eds.),
Ordering space: types in architecture and design (pp. 289-311).
New York: Van Nostrand Reinhold.

Getting to Know the Built Landscape: Typomorphology

Anne Vernez Moudon

The concept of type is in good currency in the fields of planning and design in North America: streets, buildings, open spaces, neighborhoods, etc., are commonly organized in classes.¹ Yet the theories framing the nature, purpose, and applications of type in these fields remain vague and flawed with ambiguity. The definition and use of type to characterize urban form, its buildings, and open spaces are particularly weak; most rely on functional or aesthetic criteria (Moudon 1987). In a strident critique of the use of type in North American architecture, Bandini called typological work a collection of "easily appropriated icons" – a potpourri of images of buildings randomly selected by architects who find them inspiring (Bandini 1984, 81). This apparent shallowness contrasts with the numerous and complex definitions of urban form and building type that have been debated and refined in Europe for several centuries (Goode 1992, Tice 1993). Clearly, serious gaps in interpretation have occurred as the concept is transported from one continent to the next, translated from one language and culture to others, and transformed from discipline to discipline. These gaps characterize a state of affairs that this chapter begins to unveil. The focus is on typomorphology, an area of study by European architects and geographers which now spans the past four decades.

Typomorphological studies reveal the physical and spatial structure of cities. They are typological and morphological because they describe urban form (morphology) based on detailed classifications of buildings and open spaces by type (typology). Typomorphology is the study of urban form derived from studies of typical spaces and structures.

Typomorphology is an unusual approach to urban form. First, it considers all scales of the built landscape, from the small room or garden to the large urbanized area. Second, it characterizes urban form as a dynamic and continuously changing entity immersed in a dialectic relationship with its producers and inhabitants. Hence, it stipulates that city form can only be understood as it is produced over time. Typomorphology accounts for what Italian urbanist Saverio Muratori called an "operational history of urban form," because it is a record of actions taken by planners, designers, and builders, both lay and professional, as they mold city

1. See for instance Downing [1850] 1969; Pevsner 1976; Myers and Baird 1978; Rowe and Koetter 1978; Groth 1981, 1988; Upton 1981; Hull 1982, 1983; Boyer 1985; and Schön 1988, to cite a few cases in a broad range of applications.

form (Muratori 1959, Muratori et al. 1963). Typomorphology offers a working definition of space and building types, and serves as a rich launching ground for studying the nature of building design, its relationship to the city, and to the society in which it takes place.

① ✓ A typomorphological approach to defining type differs from other approaches in three ways. First, type in typomorphology combines the volumetric characteristics of built structures *with* their related open spaces to define a *built landscape type*.² This approach is in opposition to the monumental, siteless typology of Durand, for instance. The element that links built spaces to open spaces is the lot or parcel, the basic cell of the urban fabric. Second, the inclusion of land and its subdivisions as a constituent element of type makes land the link between the building scale and the city scale. Third, the built landscape type is a morphogenetic, not a morphological, unit because it is defined by time – the time of its conception, production, use, or mutation.

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③ This chapter reviews the work of three schools of thought on typomorphology which I have identified and researched following my own work *Built for Change* (Moudon 1986).³ Centered in Italy, in France, and in England, these three schools have generated lively debates among students of the built landscape with architects, planners, sociologists, geographers, and others participating. For the most part, these disciplines and professions in North America have ignored or misinterpreted the deliberations on typomorphology in Europe and England.

The typomorphological schools of thought make different contributions to knowledge of the built landscape. They address different disciplinary and cultural issues and use different methods of inquiry. Until recently, the schools have had little contact with each other (Choay and Merlin 1986, Whitehand and Larkham 1992). Together, however, these schools elaborate the exciting beginnings of a scholarly approach to the built landscape which complements established design research. They outline a way of learning how cities are produced and built that can support the further development of design and planning theory.

Muratori and Caniggia in Italy

In Italy, typomorphological studies began in the 1940s at the instigation of Saverio Muratori (1910–1973), an architect who was profoundly disturbed by the devastating effects of modern architecture on existing habitats and cities. Muratori and his principal follower, Gianfranco Caniggia (1933–1987), analyzed the city build-

ing process in traditional Italian towns, making this analysis the foundation for a theory of design. Their analyses rest on extensive classifications of buildings and related open spaces extending from their original state to their various mutations over time. Muratori's and Caniggia's work had a major impact on design theory and practice in Italy and, indirectly, on the use of building types in architectural design in North America.

Muratori

Saverio Muratori saw that the roots of architecture lie not in the fantastic projections of the modernists, but within the more continuous tradition of city building which prevailed from antiquity until the 1930s. Teaching at the University of Venice in the 1950s, and then at the University of Rome after 1964, Muratori made the morphological study of existing cities a first, mandatory step in his architectural design studios. As a philosopher, researcher, and practitioner, he is recognized as the early pioneer of the typomorphological trend in Italian architecture, and the spiritual father of such well-known architects as Aldo Rossi and Carlo Aymonino. Muratori's course syllabus soon became seminal for Italian architects who, to this date, see urban morphological analysis as a necessary preparatory step for design (Muratori [1959] 1985). He also published two extensive "operational histories," one of the city of Venice and the other of Rome (Muratori 1959, Muratori et al. 1963).

For Muratori, the structure of cities could only be understood historically, with building typology as the basis of urban analysis. Urban form and structure, he stipulated, are an aggregate of many ideas, choices, and actions which are mani-

2. I use *built landscape* as an umbrella term that includes urban form, city form, built environment, etc. Built landscape is attractive because it marries concepts of built and open spaces (which "built environment" does not), and because it connotes concrete material space (while "urban form" is more abstract). Italian and French architects often refer to "architecture" with a small "a" to depict the same phenomena.

3. This chapter is adapted from a manuscript in progress, tentatively entitled *City Building*. The research was initiated in 1987 under an Individual Fellowship from the National Endowment for the Arts (Moudon 1987).

fested in given buildings and their surrounding spaces (gardens, streets, etc.). These buildings and spaces, called *edilizia* in Italian and loosely translated as the built landscape, can be classified by *type*, which summarizes the essence of their character. These different types become a *tipologia edilizia*, or a typology of buildings and related open spaces, which defines the essence of the building fabric.

Muratori's early emphasis on the typological process as the tool to understand city building explains why, in recent years, ideas and debates about building typologies have been developed more fully in Italy than anywhere else (Gerosa 1986). Unfortunately, however, much of the interesting polemic following Muratori's legacy has been lost to non-Italian audiences. Specifically, the elaborate work of Gianfranco Caniggia, one of Muratori's early assistants and the principal heir to the Muratorian tradition, remains little known outside of Italy. And even there, it has been kept out of the limelight for reasons that will be discussed in the next section.⁴

Caniggia

Gianfranco Caniggia first published an operational history of the city of Como in 1963, *Lettura di una città: Como*, with an introduction by Muratori. The research for the book had been conducted in Muratori's Centro Studi di Storia Urbanistica (Caniggia [1963] 1984b). Caniggia subsequently carried out numerous empirical studies of cities in Italy, Sicily, North Africa, and northern Europe, often in collaboration with other planners and architects and as preambles to

preservation efforts.⁵ However, Caniggia's is the work of an architect, not a historian. His own publications seek not to document the historical process of a city's development, but to isolate the fundamental principles of city making (Caniggia 1984a, [1976] 1985; Caniggia and Maffei 1979). They are meant to teach these principles to guide the identification of the elements and rules that mark the genesis and then the transformation of the city fabric.

Caniggia explains the human environment as made of "built objects," all related one to the other. He identifies built objects at four different scales: the building (*edificio*), the group of buildings (*tessuto* or building fabric), the city (*città*), and the region (*territorio*).⁶ Each object is described as a complex entity made of elements, structures, systems, and organisms. Thus the built environment is an organism made of components that are themselves organisms. Caniggia

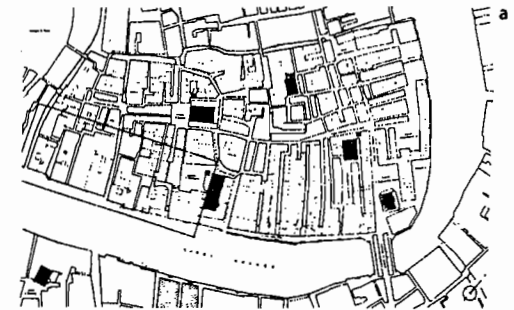
4. Such influential Italian historians as Leonardo Benevolo and Manfredo Tafuri only paid lip service to Muratori's work and ignored Caniggia's until after the mid-1980s (Tafuri 1989).

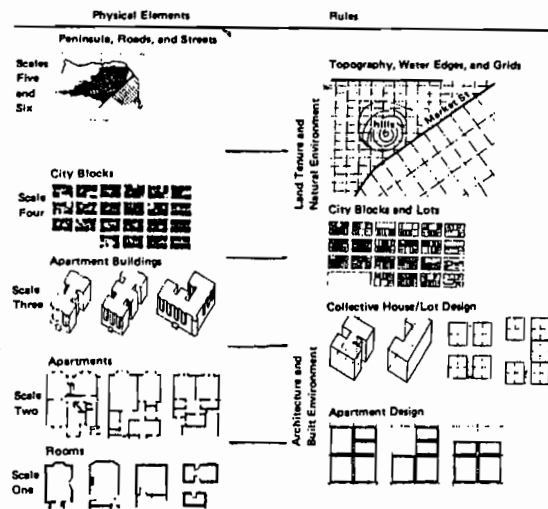
5. Published volumes of this work are available for the town of Venzone (Sartogo n.d.), the cities of Naples (Ciccone 1984), Florence (Maffei 1981; Malfroy and Caniggia 1986), and Venice (Maretto 1986). Caniggia was also an active practitioner; he had an office in Rome in partnership with Francesca Sartogo (Caniggia 1984c).

6. Caniggia also studied the development of pre-Etruscan settlements in various regions of Italy. His theories explaining the pattern of these settlements go beyond the concerns of this chapter, but they do establish further links between urban and regional form.

16-1
Caniggia's objects-organisms (source: M. Maretto, 1986, *La casa veneziana nella storia della città, dalle origini all'ottocento*, Marsilio Editori, pp. 82-3)

- a. A partial plan of Venice shows the fabric (*tessuto*) of streets, canals, plazas, parcels, and churches.
- b. An enlarged piece of the plan shows the interaction between built and open spaces. Zooming into the buildings themselves (*edificio*), one sees the organization of rooms, circulation spaces, and courtyards.





16-2
Modularity in the built landscape
(source: A.V. Moudon 1986, *Built for Change: Neighborhood Architecture in San Francisco*, MIT Press, p. 124).
This diagram shows how a typical turn-of-the-century apartment building in San Francisco fits into its host fabric. Reading from the bottom up: Rooms are grouped to form apartments, which are then grouped to form the apartment building; the land subdivision pattern organizes the position of buildings within the block; blocks fit into the city according to the layout of the streets; and the network of streets fits into the landscape.

stresses the modularity of the environment (how objects fit one into the other) and its scalar dimension (how objects-organisms at one scale fit into objects at other scales) as two important principles of the structure of the environment. Objects relate one to the other, and must be understood in relation to other objects at different scales. All built objects that are affected by planning and design activity must be studied from the scale of the single building to the scale of the territory within which buildings are set.

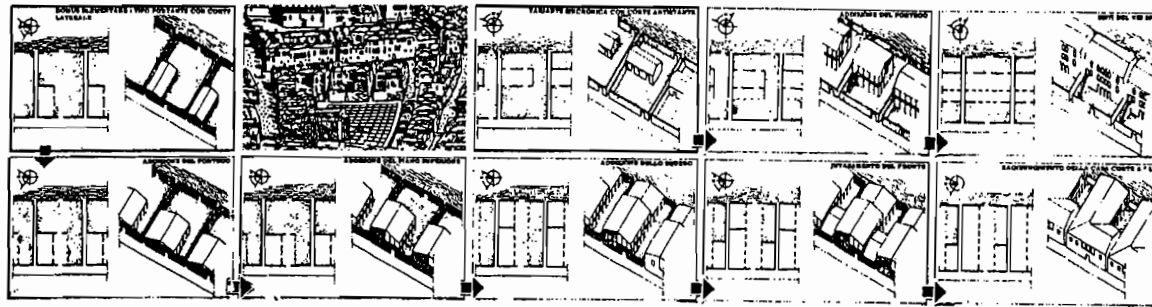
Caniggia stands out in the group of typomorphologists introduced here because he clearly states that the physical city is not an object but a process: cities are built incrementally with many small elements being juxtaposed. An understanding of the formation and transformation of cities is guided by the analysis of the mutation of the type through both time and space. For him as an architect, the analysis of urban form proceeds from the small to the large elements of the environment (Caniggia and Maffei 1979, 57–74, 122–65).

Caniggia, like Muratori, does not use the word *morphology*, because, in his theoretical construct of the human environment, urban form per se is not an object of study. Instead, he calls himself a “*tipologo*,” because he believes that the establishment of *procedural typologies* (*tipologia processuale*) is the basis for understanding the making and hence the design of the city and its architecture. He defines *type* as the *conceptual* existence of an object in the form of the “experience of this object,” apart from its physical existence or its phenomenological being (“experience” meaning cultural experience, and *not* the individual experience of an existential nature which is a more commonly used definition in Anglo-Saxon cultures).

Procedural typologies can be defined at all scales of the human environment: for buildings and their ancillary spaces (*edilizia*), the urban fabric, the city, and the territory. Caniggia focused on the scale of the *edilizia*.⁷ There, a base type

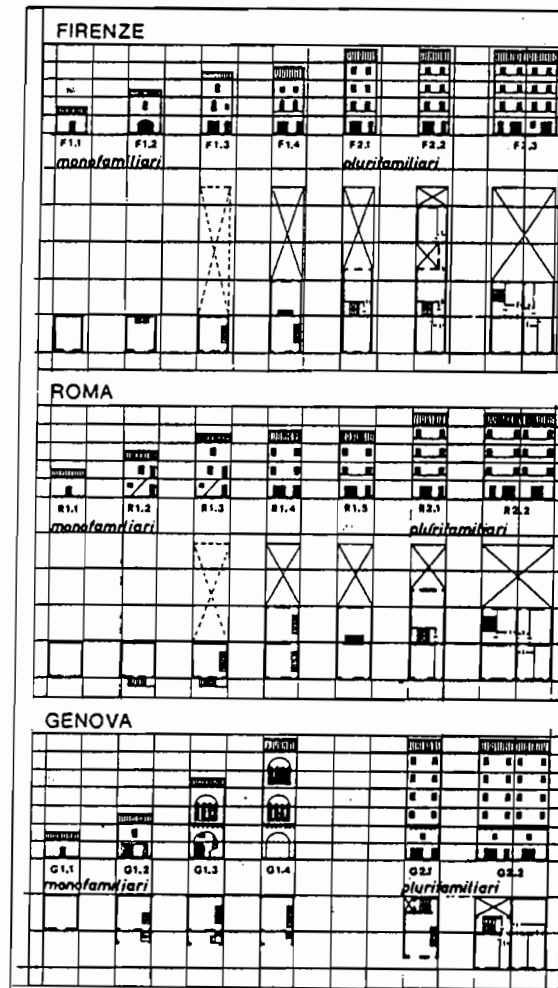
is identified in terms of its volumetric characteristics, its position relative to the street, and its solar orientation. The base type is then reviewed over time for possible mutations or adaptations. The type is therefore defined in formal terms, in terms of its

16-3
Caniggia’s typological process (source: P. Maretti 1986, *La casa veneziana nella storia della città, dalle origini all’ottocento*, Marsilio Editori, pp. 29–30). This diagram illustrates the progressive transformation of the elementary domus and its ancillary spaces into a medieval courtyard house. Starting at top left and reading across: the basic domus type was perpendicular to the street with a side court; depending on the solar orientation of the lot, an alternative type has a front court parallel to the street; mutations through the thirteenth century include the addition of porches, the building of new stories, and the infill of side yards along the street to form L-shaped courtyards.



7. Caniggia’s work on the types of elements that make up buildings and on the spatial organization of roads and settlements is not included in this discussion.

Human action and environmental reaction (source: G. Caniggia and G.L. Maffei 1979, *Composizione architettonica e tipologia edilizia*, 1. *Lettura dell'edilizia di base*, Marsilio Editori, p. 101). The diachronic mutation of house types in Florence, Rome, and Genoa is reconstructed in a schematic way.



8. Functionalism, the prevailing approach to architectural design in the postwar period, stipulates that architecture is best understood and practiced in a multidisciplinary context: the psychological, social, and economic components of buildings have to be considered as external forces, to be handled by the appropriate professionals.

relation to scales above and below, and in terms of its evolution over time. Most types of buildings in Italy have roots in the Etruscan or Roman cities, and their mutations are reconstructed through medieval times. Caniggia identified the elementary Roman *domus* as the base type which evolved into a courtyard house, then into a row house, and finally into a linear house.

Focusing on the processes by which cities are made, Caniggia portrays an extremely dynamic picture of the built world, whose production is the result of a dialectic, or an active relationship, between human action and "environmental reaction." According to him, this human action is directed either by a "spontaneous conscience" (*coscienza spontanea*), which is an immediate understanding of what is necessary to make a building, or by a "critical conscience" (*coscienza critica*), which is a self-conscious thought process guiding the building activity which may not refer to cultural heritage. The spontaneous conscience yields *basic structures* (read: vernacular, common houses), while the critical conscience leads to *specialized structures* (read: monuments) (Caniggia and Maffei 1979, 39–57).

Debates Surrounding the Muratorian School

The relative obscurity of the Muratorian School beyond Italian borders contrasts with the immense influence it has had on an entire generation of architects who became internationally known. It was Muratori who led Rossi, Aymonino, Scolari, Gregotti, and others to the historical city as a source of knowledge and inspiration. Muratori's condemnation of the modernist city was an early subject of research by architects Aymonino (Aymonino et al. 1966, Aymonino 1976) and Rossi (1981, [1966] 1982). They established that the modernist and the traditional city differed in at least two areas: in the ways individual buildings related to the city as a whole, and in the ways individual buildings were designed. (Interestingly, however, none of the Italian typomorphologists analyzed the modernist city systematically.)

Rossi continued Muratori's argument against buildings designed to respond directly and solely to programmatic needs, advocating instead a formal composition of space based on materials and on generic functions and related spatial needs. Rossi's principal concern was to demonstrate the power of what he called the autonomy of architecture. Elaborating on Muratori's case against functionalism,⁸ he claimed that built forms are themselves embodiments of people and their societies, and therefore can be understood, and ultimately shaped, outside of the realm of the social sciences.⁹

Aymonino shed light on what he termed the "reversed" relationship between building and city which modernism introduced. Explaining how the existence of the city was based on a dialectical relationship between building typology and urban morphology, he noted how the compact building types of the medieval city are the "servants" of urban form — pieces of space defining a collective fabric. As the modern city develops, however, new building types emerge that are largely independent of urban form (e.g., theaters, libraries). In the modern city, he claimed, the relationship between typology and morphology has been reversed, with building types defining individual environments that do not serve a collective urban form, such as malls and office parks (Aymonino 1976).

Aymonino's and Rossi's work clearly empathized with Muratori's and Caniggia's thinking. However, these famous students did part from their master in their interpretation of the crisis of modernism. Aymonino and his colleagues accepted the reversed relationship between building and city as part of an irreversible change in the socioeconomic forces that shaped the city. Muratori and Caniggia, on the other hand, saw it as an aberration, a temporary crisis in the way cities are produced. This difference in interpretation led to a parallel, yet irreconcilable, difference in the way urban analysis related to the development of a design theory. If, according to Aymonino and his colleagues, the relationship between building and city has been broken in the contemporary city, then the analysis of the traditional city can no longer inform the design of new buildings. But if, according to Muratori and Caniggia, the traditional relationship between building and city must be restored in the contemporary city, then the design of new buildings must rely on the analysis of the traditional city. This disagreement generated an intense debate on the nature of building typology and its value to architectural design and theory. The basic question became: Can there be and should there be any continuity between existing and new building types?

Building Typology and Design Theory

Historian Giulio Carlo Argan (1965) structured the debate by highlighting what he identified as the two "moments" in the design process: (1) the *typological moment*, when the rules of design and building used in the past (and thus yielding types which have been called *a posteriori*) are identified and understood, and (2) the *moment of invention*, when the artist answers the historical and cultural questions through a critical approach (yielding so-called *a priori* types). Muratori and Caniggia scorned *a priori* building types as arbitrary inventions by architects; they believed that the architect's creative work must be harnessed by common building

traditions. But Aymonino, Rossi, and others thought that designers, in creating anew, were free to interpret the historical city as they wished. Justifying the architect's freedom from past conventions, Aymonino wrote:

[U]rban analysis does not provide a structure for architectural intervention. In fact, it is wrong to assume a direct relationship of cause and effect between the two: this leads to the academic embalming of architecture, shown clearly in the projects of Muratori's and his School (Aymonino 1976, 176).¹⁰

In contrast, Muratori and later Caniggia defined architectural design intervention as conditioned by what they call preexisting structures. These include the existing built environment as well as the building traditions and living practices which shaped it. Caniggia specifically stated that the architect is a *technician* organizing the human environment (*tecnico della strutturazione del spazio antropico*). As a technician, the architect must fit his work into the growth and transformation processes that take place in any city, and witness the dialectic between buildings and their fabric. He believed that architects and planners need to overcome the crisis of modern architecture through a critical examination of the process of formation and transformation of the human environment. This critical examination cannot be based superficially on style and experience, but must rely on knowledge of the historical processes shaping urban form.

9. Rossi is not interested in the systematic study of the city's origins and evolution or in its operational history. Theoretical or methodological aspects of typology or morphology by and large are absent from *The Architecture of the City* (Lawrence 1985). Rossi wants to break away from the Muratorian tradition; the "master" is not mentioned in the book.

10. Argan's own position is ambiguous. He says that a building typology is not a mere classification but the definition of an aesthetic purpose. The classification of buildings has three dimensions: the shape of the building, its major building elements, and its decorative elements. He argues that in studying typology, the designer considers history as a source of information for the new project to be "naturally connected to the past." Yet in this process, the designer has freed himself from the conditioning influences of the past as a model, accepting it instead as a completed process: precedents need to be understood, not copied mindlessly (Argan 1965).

These distinct positions lead to two radically different approaches to design theory: one that rests entirely on the history of city building and its analysis, and the other that is defined solely by the architect, and which may or may not borrow from this history.

So far, in Italy and in other parts of Europe, the strict disciplinarian doctrine which Muratori and Caniggia advocated and practiced has been less popular in design circles than the liberal stand of Aymonino and his colleagues. The commercial success of the designs of Rossi and Gregotti have no doubt precipitated this trend. Today, Muratorian urban analyses are performed by designers primarily as a predesign exercise for sensing the logic and tradition of the site. But only in cases of preservation projects do urban analyses have an actual impact on the designs proposed.

11. Although Vidler's and Moneo's writings were most influential, other writings in the architectural literature do refer to the Italian typological work. See entire issues of the *Journal of Architectural Education* in 1982 and *Casabella* in 1985; Colquhoun 1969; Ungers 1979; Anderson 1982; Castex and Panerai 1982; Porphyrios 1984; Brown 1986; and Broadbent 1990.

12. Vidler traces the first typology back to the Enlightenment, when architectural typologies exemplified by the work of Abbé Laugier classified the different elements of buildings as geometric forms related to natural elements (the column as a tree, for instance). These types were *archetypes* or ideal types to be emulated. Later on, Durand expanded the notion of type to describe special public programs, their different plan configurations and facade compositions, from which designers could choose. The second typology belonged to the modernists who advocated building types fit for mass production. Theirs were *prototypes* or first expressions of a type. A third typology identified by Vidler and Moneo (although Moneo did not use the term) was developed in the 1960s by the Tendenza, the then little-known neorationalist group championed by Aldo Rossi. The Tendenza identified building types based on urban vernacular traditions.

Interpretation of the Italian Work in North America

The intricacies and subtleties of the Italian discourse never reached North America. Early reviews of the work sidestepped the heart of the debate. Historian Anthony Vidler and architect Rafael Moneo focused on the use of building typology in architecture.¹¹ They did not dwell on the relationship between building types and urban form. Nor did they discuss the tension between analysis and design and the two moments of the design process described by Argan (Vidler 1976, Moneo 1978). Vidler pointed to three stages in the definition of typology which culminated with Aldo Rossi's writings.¹² He saw Rossi's primary contribution as having designed building types that were no longer based on concepts of functional organization (which the French School calls the abstract plan types of the modernist approach), but on actual constructions found within the traditional city fabric (which the French call consecrated types).

Concentrating on the downfall of modernism and interested in the consequences of neorationalist proposals for architectural design, Vidler was particularly curious about replacing the functionally-based building types of the moderns with form-specific types of traditional buildings. Moneo was less impressed with what he called functionally indifferent building types, and complained that the Italian work emphasized the attributes of urban form and "reduced" typological studies to the field of urban analysis (Moneo 1978, 35–36). Thus by limiting their inquiries to the architectural scale, these writers missed an opportunity to introduce the breadth of typomorphological studies to the Anglo-Saxon world and to begin exploring the relationships between buildings and cities in this context.

The subsequent notoriety of Rossi's *The Architecture of the City* (published in English in 1982, 16 years after its publication in Italian, and six years after Vidler's discussion of this work) also contributed in oversimplifying the typomorphological debate. In spite of its provocative views, Rossi's book remains a personal statement about understanding the city through its architecture. *The Architecture of the City* principally influenced architects in English-speaking countries and generated only curiosity about the relationship between buildings and cities; it did not demonstrate convincingly the value of systematic urban analysis for urban design. And by the 1980s, Rossi's projects and drawings had become more prominent in architectural circles than the theoretical underpinnings first described in the book (Moudon 1987).

The plan and implementation strategy of the City of Bologna's restoration work did capture the attention of the few North American architects and planners

with community development interests (Cervellati et al. 1977, Comune di Bologna 1979). The project was the labor of Italian architects who collaborated with Caniggia and hence operated within the theoretical tenets of a typomorphological approach and beyond the particular case study. However, the impact of this work remained small, limited as it was by the perceived uniqueness of the city, and its particular social and historical heritage.

The Legacy

The most important contribution of the Muratorian School lies in its attempt to build a theory of design based on traditional processes of city building. It reads city form as a historical settlement process, a territorial conquest to control space with materials and building techniques. The research identifies basic organisms (elements and processes) that underlie the formation and transformation of the built landscape. It recognizes that sociopolitical forces shape the design and production of cities and act as a framework within which architects and planners must work. The approach is based on the notion of a dynamic relationship between human action and environmental reaction which matches in an interesting way the one used in studies of person-environment relations in English-speaking countries.

Muratori's and Caniggia's primary publications serve as textbooks for architecture students to read and analyze the city building process before they begin the design process. Caniggia's texts are synthetic and abstract, centered on the typological process as a tool to record the mutation of a base type of *edilizia*, the smallest element of the built landscape, over time. The typological process therefore becomes a link between analysis and design: as types of buildings and territories are shown to have permeated centuries of urbanization, they are proven to be generic and therefore must be continued in contemporary design.

While Muratori is increasingly recognized as the father of typomorphology, his work as well as Caniggia's remains little known outside of Italy. In Italy itself, the work has been trivialized in many ways by architects who have treated the traditional building of the city as an anachronism. A few young historians of the city are emerging, however, whose research is based on Caniggia's teachings. Gian Luigi Maffei and Paolo Maretto have published challenging histories of the building of Florence, Venice, and Genoa which add a new, scholarly dimension to Caniggia's work (Maffei 1990a, 1990b; Maretto 1986). These exemplary books illustrate the power of applying the typomorphological approach to the history of cities.

Conzen and the Urban Morphology Research Group in England

M.R.G. Conzen's work is available in English, and hence accessible to readers of this volume. However, because its significance has yet to be fully appreciated in either geographical or design and planning circles, the work needs to be an integral part of this chapter.¹³ Conzen's contribution is especially important in the context of typomorphology because it excludes the prescriptive dimension of planning and design which underlies the Italian and French work. The focus is strictly on research intended to describe, analyze, and explain how urban form is made.¹⁴ As a geographer, the freedom Conzen gained from not having to concern himself directly with the future city and its design has allowed him to concentrate fully on studying the actual city, the processes for building it, and on developing methods for analyzing it. As a result, his approach offers the most thorough, detailed, and systematic typomorphological method of the three schools.

Conzenian Philosophy and Method

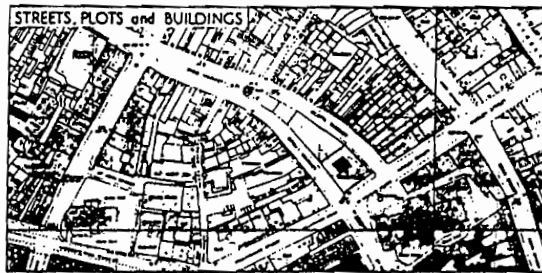
M.R.G. Conzen first studied cultural geography at the Geographical Institute of the University of Berlin, where urban morphology became a subject of study in the late nineteenth century (Whitehand 1981). He later trained as a town planner in England, where he practiced as such until he accepted an academic position in geography at the University of Newcastle upon Tyne.

13. Fortunately, Conzenian ideas have recently been enjoying a revival in England. Yet the work remains largely unknown in France, Italy, and the United States. Geographer James Vance at the University of California, Berkeley, is one of the few proponents of Conzen's method, and the historian Spiro Kostof, on the same campus as Vance, referred to Conzen in his publications (Kostof 1991, 1992).

14. In principle, geographers are charged with studying elements of the landscape and generating knowledge that designers and planners can then use. However, this particular focus generally has been neglected by the discipline, leaving a gap that only a few social scientists and designers have been attempting to fill. Why geographers have left this gap and why designers have not moved into this field more forcefully is worth another paper. Aspects of this subject are addressed by Whitehand (1981, 1987).



16-5
Conzen's fundamental elements of the town plan (source: J.W.R. Whitehand, ed. 1981, "The Urban Landscape: Historical Development and Management, Papers by M.R.G. Conzen." In Institute of British Geographers, special publication no. 13, p. 26)



Conzen's townscape is a palimpsest of society and culture on which features of particular periods stand out while others are obliterated over time. His empirical research has focused primarily on the reading of the town plan. However, he describes his complete method as three pronged, to include the *town plan* (primarily a two-dimensional cartographic representation of a town's physical layout), the *building fabric* (made of buildings and related open spaces), and the pattern of *land and building utilization* (detailed land use) (Conzen 1968, 113–16). All three analytical components are interrelated genetically and functionally. The corresponding documents needed to explain urban form include: the town plan, the distribution plan of urban building types, and the distribution plan of urban land uses. Conzen's work itself has concentrated almost exclusively on the study of the

town plan. In spite of representing a town in only two dimensions, the town plan embodies, for all intents and purposes, all the essential characteristics of urban form.

In an approach he calls *town-plan analysis*, Conzen identifies three fundamental elements of the town plan: the streets, the plots, and the buildings, which all fit one into the other as a precise puzzle. Caniggia, and later the Versailles School, also use the town plan and its elements in their research, yet Conzen's clear identification of the plan and of its basic elements as analytical tools sets an important point of departure for typomorphological analysis.

According to Conzen, the town plan is to be analyzed over time in an evolutionary fashion. The fundamental unit of analysis is the individual plot. It is the basic element of the pattern of land subdivision and acts as an organizational grid for the urban form. Conzen further introduces the concept of *compositeness* of the town plan to describe the variations in the forms, uses, and configurations found in different parts of the city. The composite town plan is made of different units called *plan units*, which are best noted in the variations typically found in street, lot, building size, and shape. Thus the different plan units are due to differences in the socioeconomic roots of the settings as well as to the different periods of building. Plan units contribute to the stratification of the townscape, *stratification* meaning literally storage into layers, the formation and deposit into strata.

The definition of the plan unit as a unique combination of types of street patterns, buildings, and lot configurations is also an important contribution. In Conzenian terms, the plan unit itself identifies a type of what Caniggia calls the urban fabric (Caniggia has not, however, spelled out clearly the characteristics of its components). Conzen and Caniggia's research thus become complementary, with Caniggia providing an approach to the definition of building types and Conzen to the types of urban fabrics.

Conzen's own studies focus primarily on medieval towns, and they reach a climax in the analysis of the town of Alnwick, Northumberland (Conzen 1960), which covers the origin of the city and its growth and transformation until the twentieth century. The study illustrates Conzen's methodological contributions. Regional soil structure, ancient road network, the old town's site, topography, and surrounding field structure all explain the town's layout. Urbs, suburbs, and original plot structure – still readily visible in today's fabric – are reconstructed as well. At the center of the analysis is the formation of the *burgage*, the basic plot of land that is narrow and deep. A detailed study of a burgage along one of Alnwick's

and to integrate it with more traditional concerns in the field of geography. It has also worked to facilitate access to M.R.G. Conzen's writings and graphic studies that have not been widely distributed.

Individuals in the Urban Morphology Research Group have different specialties. T.R. Slater's focus is closest to Conzen's in its emphasis on the town-plan analysis of medieval towns (Slater 1987). J.W.R. Whitehand is concerned about the effects of the building and development industries on urban form (Whitehand 1987, 1992). His prolific writings on the fringe belt and building cycle concepts rely on the identification of transformation of building types – the mutations of existing types or the emergence of completely new types.¹⁵ He and P.J. Larkham are now turning to the study of suburban areas, thus testing Conzenian methods on more recent urban forms. P.J. Larkham has applied the method to preservation projects. He and others have assembled a glossary of terms used in Conzenian analysis which illustrate the group's commitment to morphological study (Jones and Larkham 1991).

International and Interdisciplinary Outreach

To broaden the scope of the Conzenian approach, and, in so doing, to affirm the importance of studying urban morphology, the Birmingham Group is seeking to expand the number of towns studied, to extend research to more recent cities, and to pursue cross-cultural comparisons (Whitehand 1988). This outreach program, if continued, would assemble material on the variety of extant building, space, and urban fabric types and would be the first international and longitudinal data base on the city building process. It would be rich ground for

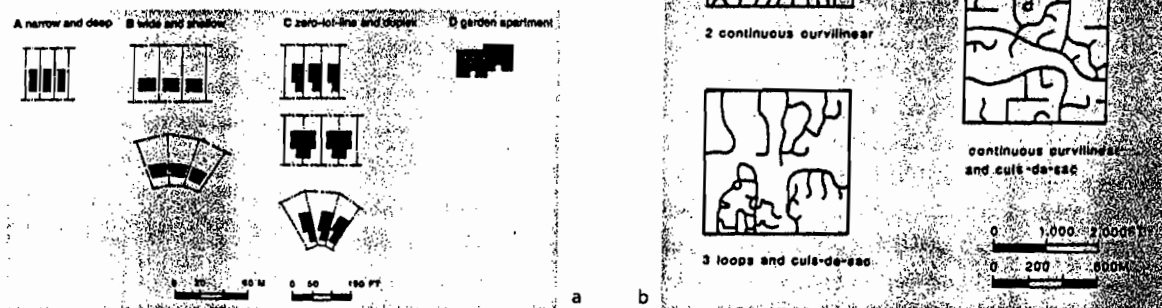
15. The connections that Whitehand establishes among traditional measures of urban development, economics, and resulting city form are important for explaining the city-building process. Certainly, the descriptive powers of morphological studies can only be complemented and reinforced by economic arguments. Whitehand's pioneering work begins the difficult task of relating real estate and community development practices to city planning and design theory.

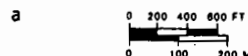
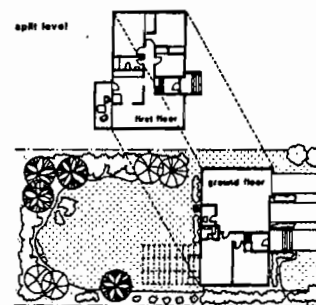
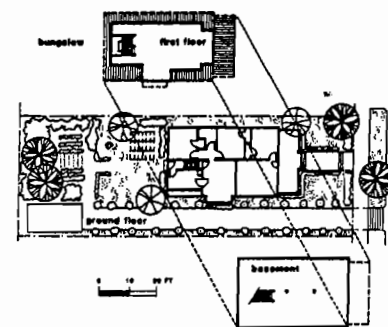
16. In 1987 Slater also began editing a newsletter which now reaches an impressive number of individuals and groups in Ireland, Germany, Spain, Switzerland, Poland, Austria, the United States, and elsewhere.

research and would further strengthen the links between morphological research and planning and conservation practices (Slater 1984).

T.R. Slater (1990) has edited a book, *The Built Form of Western Cities*, which includes analyses of industrial towns, and makes several references to research in Italy and the United States.¹⁶ A chapter by M.P. Conzen reports on comparative studies of nineteenth-century American towns, using some of the concepts developed by his father. Discussing the nature of the morphology of these towns, M.P. Conzen reiterates the importance of the cadastre and the building fabric in understanding the town plan. He notes how little detailed empirical work has been done on town morphology in the United States: the few studies of extant building types (notable exceptions including Kniffen's work [Upton and Vlach 1986]) have generally been eclipsed by the more popular, but a-morphological work on the spatial structure of urban *land uses* (see also Conzen 1980).

16-9
Elements of U.S. suburban residential forms: houses, lots, and streets
(source: A.V. Moudon 1992b, "The Evolution of Twentieth-Century Residential Forms: An American Case Study," in *Urban Landscapes: An International Perspective*, eds. J.W.R. Whitehand and P.J. Larkham, Routledge, pp. 173-6)
These illustrations show two levels of resolution in the built landscape. The simple lines and shapes outlining houses, lots, and streets illustrate a low level of specificity in describing the types.
a. Houses and lots
b. Street pattern





b

16-10

Elements of U.S. suburban residential forms: plan units (source: A.V. Moudon 1992b, "The Evolution of Twentieth-Century Residential Forms: An American Case Study." In *Urban Landscapes: An International Perspective*, eds. J.W.R. Whitehand and P.J. Larkham, Routledge, pp. 182, 185)

- Plan unit and house plan typical of suburban residential development until the 1930s. It integrates Street Type One (small grid) and House Type A (narrow and deep) shown in Figure 16-9.
- Plan unit and house plan typical of development between the 1930s and the 1960s. It combines Street Type Two (continuous curvilinear) and House Type B (wide and shallow). A higher level of specificity in defining types is used than in Figure 16-9: double lines describe the width of streets, and details of the material quality of buildings and related open spaces are included.

J.W.R. Whitehand and P.J. Larkham (1992) recently edited a second international volume, *Urban Landscapes: An International Perspective*. A chapter by D. Holdsworth reconstructs the development of office buildings in downtown Manhattan using computer simulation techniques. My own chapter offers a typology of U.S. suburban residential form, identifying basic house and street types as well as suburban plan units.

Finally, a doctoral thesis sponsored by the Group compares Conzen's method with the work of Caniggia at the scales of the building and the urban fabric (Kropf 1993). Beyond the obvious importance of making parts of Caniggia's contribution accessible to English-speaking readers, the thesis makes methodological headway in the definition of type. Kropf clarifies the distinction between levels of *resolution* (the different scales which are clearly recognizable in the built landscape) and levels of *specificity* (the different levels of detail at which type can be defined). For instance, elements such as streets, buildings, and open spaces are at one scale or level of resolution and plan units or urban fabrics are at another. Types of streets can be established at different levels of specificity. For instance, street width and block size may be the characteristics used to differentiate one type of street from another, or those characteristics plus the number of vehicular lanes, arborization, drainage, etc. could be used to identify the types. Kropf introduces the notion of *outline* as a tool for defining type in the built landscape. Building types are commonly identified by their graphic outline, as are most other elements such as rooms, streets, yards, lots, and so forth. Outlining appears to be a standard means of describing various types of spatial elements in the built landscape.

The Legacy

Conzen's approach has been called morphogenetic rather than morphological because it stresses not only the elemental structure of the city but its temporal dimension and its evolution. Morphogenesis and the morphogenetic approach are more accurate terms for describing the methods used than typomorphology. They are accepted in geography (Vance 1977, 1990).

Conzen's methodological contribution lies in the strength of the town-plan analysis, the definition of its elements and plan units. It confirms and clarifies the work of French and Italian typomorphologists. Their methods and findings being similar, they begin to define a systematic way to describe the built landscape. Recent efforts to expand the scope of cities studied and to spur comparative work

all begin to consolidate a bona fide field of morphogenetic analysis of the built landscape which promises to provide practical applications in city planning and design. So far, however, assessments of Conzen's work by the few urban designers and planners who know it remain mixed. They lament the work's thoroughness, and question its direct usefulness to design beyond the management of the historic urban landscape (Samuels 1988, 1990; Bandini 1988, 1992).

The Birmingham Group clearly is looking for applications of the morphogenetic approach which transcend historic landscapes and address general issues of what they term "townscape management," an activity akin to, yet different from, urban planning. With its emphasis on managing the existing city according to its historic evolution, townscape management is the city planning equivalent of adaptive reuse of buildings. The Conzenian approach begins to provide an analytical basis for facilities management planning, which is itself a growing subfield of city planning.

17. After 1968, reforms changed the education of architects and urbanists, and supported the development of an infrastructure to support extensive design and historical research. The old Ecole des Beaux-Arts was replaced by some eight *unités pédagogiques* (UP), still scattered around the periphery of Paris. Each *unité* represents an autonomous school of architecture, housing not only the staff to teach studios and other architectural subjects, but person-environment studies, urban design, and urban studies. The Versailles School of Architecture is known as UP 3, or third *Unité pédagogique*.

18. Recently, the works of geographers Roncayolo and Rouleau have reinforced the focus on urban historical architecture (Rouleau 1983, 1985).

19. Lefebvre taught at the Institut d'urbanisme of the University of Paris, where he influenced a number of designers and planners with a kind of urban sociology that included fundamental aspects of anthropology. Another influential person at the Institut d'urbanisme is philosopher Françoise Choay, whose seminal publications have focused on the roots of urban design theory but not on the city.

The Versailles School in France

The Versailles School of Architecture emerged from the widespread institutional reform that took place after the students' and workers' riots in 1968.¹⁷ The school followed the Muratorian philosophy which had preceded it, believing that modernism had created an unmendable break from the past and that the roots of architecture had to be rediscovered in past traditions. However, the French work emerged in a special intellectual climate. Whereas debates in Italy and in England involved, respectively, architects and geographers, in France, sociologists, historians, geographers, and planners all worked together with architects to achieve an improved understanding of the city. The resulting approach to typomorphology is not only oriented to issues of design and geography but also can incorporate literary and social science perspectives. In this sense, the Versailles School stands between the Italian and the British schools, and addresses issues of both design and the city-building process.

Intellectual Climate Contributing to the Formation of the School

The work of the Versailles School is part of France's long history of applying typological study to architectural design. Quartemère de Quincy, Abbé Laugier, and Durand were the first to experiment with architectural types. French hegemony in the field of urban geography and the legacy of a Lavedan and a Poète left important marks in the design community as well.¹⁸ The Cartesian thinking necessary for good classification still remains ingrained in the culture. But the relationship between building types and urban form was not established in France until the early 1970s.

French intellectuals of the 1960s became highly critical of the institutions and professions responsible for the reconstruction of the war-damaged country. A policy of massive housing production based on selected aspects of modern design theories devastated the French urban landscape, perhaps more so than anywhere else in Europe. Twenty years after the end of World War II, thousands of HLM (*habitations à loyer modéré*) grouped in so-called satellite towns on the periphery of cities, and of Paris in particular. Sociologist-philosopher Henri Lefebvre was strongest in condemning the focus on housing production, with all its paraphernalia of efficiency and pseudoscience, as destructive of French social practices (Lefebvre 1968, 1970).¹⁹ Lefebvre was first to claim that appropriation, or the domination of material space including the city itself, was the ultimate goal of social life. He argued that contemporary construction and house production

Right to the City

methods crushed people's natural instincts for appropriation and weakened the relationship between people and their environments.²⁰

Lefebvre influenced many students, particularly architects and urbanists who turned to the traditional city for theoretical inspiration. Among them were Jean Castex (an architect), Philippe Panerai (an architect-urbanist), and Jean-Charles Depaule (a sociologist) who constituted the original core of the Versailles School of Architecture.²¹ Lefebvre's teachings fostered interdisciplinary work and a *rapprochement* with the social sciences, and encouraged the search for a socially responsive and responsible architecture.

Work in urban history also influenced urban morphology at the time of the 1968 reforms. Historian André Chastel and his team headed by Françoise Boudon were the first to focus on how ordinary buildings are built and rebuilt over long periods of time (Boudon et al. 1977). Subsequent research in the provinces as well as in Paris continues this tradition (see, for instance, *Typologie opérationnelle de l'habitat ancien* 1979; Fortier 1986).

LADRHAUS: A Dual Purpose

The Versailles team's work now spans two decades of uninterrupted research and includes four books, as well as studies of many cities, and critical essays on urban design and practice. The original group of researchers expanded and formed LADRHAUS (Laboratoire de recherche: Histoire architecturale et urbaine – Sociétés or Research Laboratory: Architectural and Urban History – Societies).²² The French work is broader than the Muratorian and the Conzencan schools' in terms of both the subjects studied and the methods used. Of the four books produced by the group, one is a critical analysis of the roots and effects of the modern movement in the recent history of city building (Castex et al. 1977). This critique relies on the comparative study of carefully selected projects tracing the evolution of urban form from traditional, pre-nineteenth century street-and-block architecture to the straight, linelike architecture of the modern movement.²³ Two other books focus on individual cases studies: the City of Versailles (Castex et al. 1980) and the Bastides new towns (Divorne et al. 1985). These studies are explicit applications of typomorphological analysis. One book is a compendium of philosophical and methodological issues related to typomorphology (Panerai et al. 1980).

This published work is historical and descriptive, and thus in the same vein as Conzen's. Case studies rest on the explicit documentation of the evolution of

20. Lefebvre was also the director of the Institute of Urban Sociology, which conducted an influential study published in 1966 as *L'habitat pavillonnaire* (*The single-family detached dwelling*) (Raymond et al. 1979). Object of planners' and architects' derision, yet object of desire for 82 percent of French men and women at the time, the *pavillonnaire* symbolized the conflicts between people's choices and the values of professional urbanists.

21. In UP 8, founding member Henri Raymond was one of the researchers and authors of *L'habitat pavillonnaire*. Another founding member, Bernard Huet, had spent a year at the Polytechnic in Milan, and was aware of Italian work in typomorphology. He became editor of the *Architecture d'Aujourd'hui* in 1974, at which time his student, Christian Devillers, published "Residential Typology and Urban Morphology." A few years later Huet himself published a small manifesto in favor of historically grounded architecture (Huet 1978).

22. LADRHAUS keeps in close contact with groups having similar interests in Spain and Latin America. Many of the team's case projects have used environments that are familiar to the researchers: Versailles, various Parisian neighborhoods, and the Parisian fringe. Field trips with students led to special investigations, with several small projects carried out in Italy where the team also retains close intellectual ties. Over the past decade, Panerai and Depaule have been immersed in research on Cairo, Egypt, and other towns in North Africa.

23. The case studies include Haussmann's Paris, London's garden cities, Amsterdam's extensions, Ernst May's Frankfurt, and Le Corbusier's Cité Radieuse.

typical buildings and their corresponding fabrics, as well as on analyses of their social history. The work is different from Muratori's and Caniggia's who, in their more direct search for a prescriptive design theory to set future design activity in the proper direction, could forgo explicitness in their descriptive work. Hence, in comparison with the French work, the early studies of Venice, Rome, and Como read as designers' reconstitutions of the city building process. Drawings are personalized, chronologies missing, and explanatory texts remain vague in their historical reference and laced with abstract theoretical design discussions. Indeed, in most of their publications, Muratori and Caniggia used their case study research to identify the basic principles and rules which, in their minds, were most useful as natural guides for the design of the future city.²⁴

The French research, however, is also motivated by the need to identify the ingredients of good city design. Like Muratori and Caniggia, Castex and Panerai teach and periodically practice architecture and urban design. Hence the research addresses issues of urban design, particularly in the face of modernity and the urban crisis. This preoccupation is apparent in the identification of *architectural models*, defined as basic concepts governing the organization of urban space, which starts in the first book, *Formes urbaines: De l'îlot à la barre (Urban Forms: From the Block to the Slab)* (Castex et al. 1977) and continues in the case studies of the Bastides and Versailles.

The dual purpose of descriptive research and identification of design models permeates all of the French work and adds complexity to the field of typomorphology. It calls for the development of an applied discipline to study the city as a physical entity – or, what is often called the city as “architecture.”²⁵ And it demands that lessons be drawn from this discipline to serve the practice of urban

24. The strength of recent research by Maretto and Maffei is changing the nature of Italian work in typomorphology, bringing its scholarship up to par with the Conzenian and the Versailles schools (Maffei 1990a, 1990b; Maretto 1986).

25. This generalized use of the term “architecture” is now common in many parts of Europe to describe material space. Other terms such as built environment or landscape are often avoided because they are deemed to emphasize social rather than material space or to connote a narrow focus on the aesthetics of space.

design – to assess the effectiveness and the impact of different design approaches and theories on the city and urban life.

The attempt to treat typomorphology as a new and separate discipline, an eminently modern stand, contrasts with the more reflective and personal writings of Muratori's and Caniggia's. It also differs from Conzen's work; as a social scientist, he could relate directly to the existing fields of geomorphology and cultural and urban geography. The Versailles School had to justify a new discipline in the light of other, established disciplines. And it had to prove its relevance to the practice of design to satisfy the design and planning professions. So, on one hand, the book *Eléments d'analyse urbaine (Elements of Urban Analysis)* (Panerai et al. 1980) stipulates that the knowledge derived from urban analyses enhances the ability to describe and discuss the city as a sociophysical phenomenon, and thus sets the design of the city within the broad, multidisciplinary intellectual framework of the humanities and the social sciences. And on the other hand, the case study research is carefully targeted to critique design theory in the context of how cities have been built.

Outlining a Discipline for Understanding the City and its Design

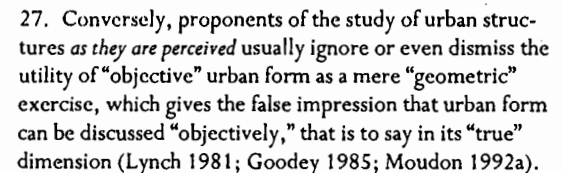
The Versailles team is aware that theirs is the first attempt in France to document how “architecture” fares as a discipline in the analysis of the “urban crisis” already well documented in philosophy, sociology, psychology, and economics. Although their quest parallels Rossi's argument for the autonomy of architecture, their stand is less polemical than exploratory, relying on the close ties with Lefebvre, who early on advocated the need to know material space as well as the people inhabiting it. The multidisciplinary background of the Versailles team members allows them to recognize that the city can be read in many ways, including the architectural way, even if it has yet to gain approval as a legitimate route to understanding the city.²⁶ Confronting these questions, *Eléments* (Panerai et al. 1989) is the principal work that engages directly with issues of historiography as well as methods in the social sciences.

In this work, the relationship between built space and social space is described as a dialectic between urban form and social action (discussed by Caniggia as well, but in less detail). Identifying built space as conceptually separate from social space, the authors explain how physical space is assumed, invested in, qualified, named, and eventually “practiced” by people in everyday life (much like a musical instrument, it would seem). They argue that while physical space has its

An entire chapter in *Eléments* acknowledges the positive early influence of both Sitte's and Lynch's approaches. Called *picturesque analyses* (evidently because they are based on perception and firsthand experience), these approaches are thought to complement the understanding of urban form. With the exception of M.P. Conzen who, in a 1978 article, discusses the parallel existence of the objective (material) and subjective (perceived, experienced) structure of form without favoring one over the other, no other typomorphologist surveyed has discussed explicitly the possible interrelationships between these two analytical approaches.²⁷

In *Eléments*, the methodological components of typological analysis are framed within the historical evolution of the method and includes recent Italian work. The reader is exposed to the different ways of establishing types, whereas both Conzen and Caniggia promote only their own. A type is defined as an "abstract object built through analysis" that reproduces the properties that are deemed essential by the analyst of a family of *real* objects. Second, building classification systems can be used to two different ends: to seek *exemplary* specimens or to define *groups* or *families* of similar specimens. The identification of groups of similar specimens yields elements that are common to all (e.g., a California bungalow), while exemplars represent outstanding specimens within the groups (e.g., a house by architects Greene and Greene).

The Bastides are shown as families of towns with central plazas and city blocks. Four groups of plans are identified: small towns with regular or irregular blocks, and medium-size towns with blocks with or without alleys. At the same time, each plan is presented as an exemplary specimen.



Completing the historical argument started by Vidler, the Versailles School notes that modern classification techniques date from the Enlightenment when the natural sciences embarked on systematic observations of the plant and animal worlds.²⁸ The first industrial revolution then brings the Encyclopedists and, among them, Quatremère de Quincy, who first made the important distinction between the type as a *model* to be replicated, and the type as a *rule* to be followed. The differences between a posteriori and a priori types are stressed. While early classifications of buildings and parts of buildings are descriptive, resting primarily on formal and stylistic criteria, by the end of the eighteenth century the French *polytechnicien* J.N.L. Durand proposed building typologies that are both *descriptive* of the characteristics of extant buildings and spaces and *analytical* or critical of these characteristics.²⁹ In what constitutes a further breakthrough, Durand's typologies become *generative*: guiding the reinterpretation of building types described and applying the concepts to other sites and contexts.³⁰ For the first time in history also, buildings are conceived as separate from their site and context. Durand emerges as an eminently modern thinker (a point made less clearly by Vidler in his "Third Typology" [Vidler 1977]).

28. The work of Carl von Linné Linnaeus stands out as illustrative of this period. Applications of classification techniques in architecture are illustrated in the work of the Abbé Laugier, who did borrow from the natural sciences.

29. Durand's 1801 *Recueil et parallèle des édifices de tout genre anciens et modernes* is a catalogue of buildings that represent the "basis of architectural culture" at the time (Panerai et al. 1980, 76).

30. In Durand's second volume, *Précis des leçons d'architecture données à l'Ecole polytechnique* (1802).

31. Saverio Muratori is noted as a pioneer in the quest to abandon typical house plans in favor of consecrated types. Further, Muratori's novel approach to typology, which anchors the common building to its site and groups parcels to define the elementary organization of the building fabric, is recognized as the first approach to establish a dialectic between building types and urban form.

The Versailles School identifies two categories of building types in use today. There are *consecrated types* of buildings that can be found repeatedly in various periods of history, such as Roman villas and cathedrals. They correspond to Vidler's first and third typologies (the archetypes and the traditional urban types). These types are a mix of basic functional programs and specific spatial configurations. And there are *typical plans*, Vidler's second typology (the prototypes). Trademarks of modernism, typical plans are standards or norms meant to guide replication, related not to tradition but to future production. Consecrated types include not only vernacular settings (called *architecture banale*), but also high-style architecture (called *architecture savante*). Consecrated types thus can be monumental, but they differ from typical plans in that they always relate to the fabric of the city. Furthermore, they are form specific and often functionally indifferent (as per Moneo 1978).³¹

As illustrated by the work of Durand, the move from consecrated types to typical plans or standards occurred gradually, over a long period of profound changes in the practice of architecture and building. It included an enlargement in typological scale which has been particularly significant since the nineteenth century, and is evident in the emergence of mass-produced terraced buildings in England and large public buildings in France following the French Revolution.

The process of defining types is addressed, albeit succinctly. It includes four steps. The first step is the choice of the scale at which the analysis will be conducted. The level likely to be the most appropriate for architectural design is the building or the parcel. Another level includes the group of buildings and related parcels, as, for instance, the city block or group of blocks (this is similar to Caniggia's *tessuto* and elaborated by Conzen's concept of *plan units*). The choice of level or scale of the typological analysis will necessarily limit the scope of the study.

A second step is the classification of building types, which involves the selection of criteria on which the typological process rests – for example, volume, function, architectural style, etc. The classification process that follows is the result of trial and error usually based on comparisons and analyses of analogues. A third step elaborates on the tools available for refining the classification process: exemplars, rules, and variations are introduced as concepts that support the analogous and comparative classification process. And a final step relates one type to the other, thus generating a *typology*.

A Critical History: The Other Side of Design Theory

Review of the hand-picked case studies suggests a new approach to design theory. The Italians debated the relationship between typomorphological analysis and design theory, whereas the French critique the history of design theory. Whether they followed the Muratorian tradition or not, Italian architects generally shared a dialectical view that opposed the traditional to the modern city. When they asked what the contemporary city can and should be, and what architects and urban designers should do, the answer was either continuity or discontinuity between past and present. Although sparked by the same angst that the Italians experienced about the mission and role of the architect, French researchers differ from the Italians in that they identify many different kinds of traditional cities – as for instance, the Bastides as planted towns and Versailles as a new town with both monumental and traditional characteristics. As a result, they do not consider modernism only in opposition to the traditional city. Modernism is not a temporary state of crisis, but a set of new design principles that have gradually infiltrated the city-building process over a relatively long period of time. For the Versailles School, the present is not a complete break from the past, and the past offers several different models for the future. In this sense, the French work does not associate issues of continuity or discontinuity in the built landscape with past and future. Since both states have existed in the past, both are likely to be possible in the future.

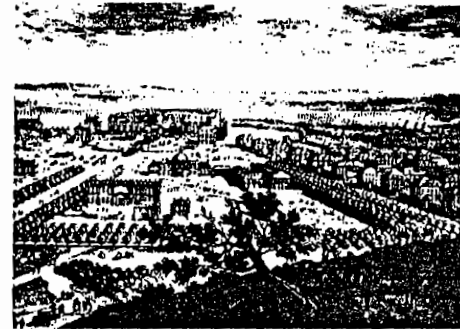
The differences between the Italian and the French contributions can now be illustrated simply by building on Argan's argument. The Italians only distinguished between a posteriori and a priori types, the former representing the traditional way of making the city and the latter being primarily the concoction of elite designers to shape the future. The French argue that there exist types which today are a posteriori but originated as a priori types. They reflect explicit, elite theories, as for instance the residential tower. These types thus represent discontinuities which occurred in the past. They must not only be included in urban analysis, but they must be evaluated for their relative effectiveness. This pluralistic view complicates the study of history: it demands that city building be studied along with the history of design theory. And it demands that the history of design theory be not only operational, as Muratori claimed, but also *critical*.

While the history of design theory is a well-developed subject in Italy, the focus on the history of urban design theory is particularly strong in France thanks to the work of Françoise Choay (1965, 1980). However, whereas Choay's interest

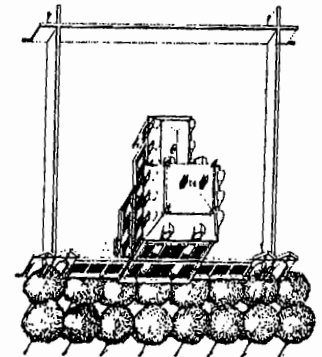
16-12

Critical history of city design: short-lived Versailles pavilion (source: J. Castex, et al. 1980, *Lecture d'une ville: Versailles*, Editions du Moniteur, pp. 54, 57, 62, 63). In the new suburban city a new housing type was introduced for the nobility: detached pavilions lining the main boulevards.

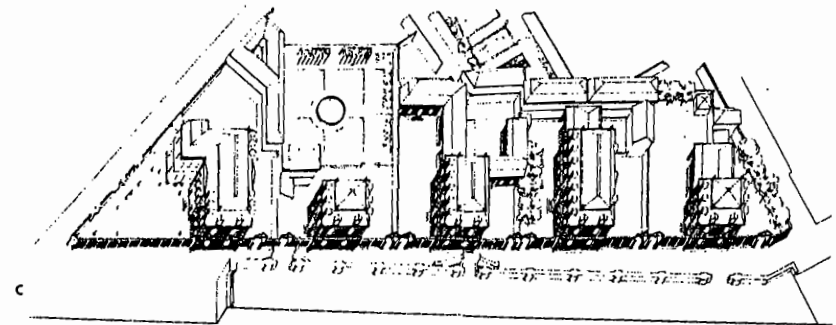
- a. Late seventeenth-century view of the castle and pavilions lining the boulevards (Plan by Israël Sylvestre, ca. 1674)
- b. The prototypical Versailles pavilion stood in a walled open space, facing the boulevard, with entry only from the boulevard. (drawing by LADRHAUS)
- c. A reconstruction of several actual pavilion designs shows the inability of the type to accommodate inconspicuous service areas. Traditional housing at the time separated formal spaces (entry court, gardens, etc.) from service spaces (secluded court, gardens, stables with their own service access in the back of the parcel, etc.). In the Versailles pavilion, not only was it difficult to shield these service areas from view, but service access was through the ceremonial entry. Castex et al. speculate that the conflict between formal and service spaces led to the abandonment and eventual demise of the type. (drawing by LADRHAUS)



a



b



c

lies in the history of consciously articulated ideas and concepts about the city, the Versailles School focuses on the history of applications of design theory. Thus the critical history of design theory has itself two dimensions: the history of *design theory as ideas* (e.g., one can refer here to the Athens Chartes or to the Cité Radieuse as the ideals and principles of modernist design) and the history of *design theory as practiced* (e.g., the case of the Unité d'habitation, or any of the new towns built according to the modernist principles).³²

The Versailles School studies theories that are culturally defined and theories that are elite driven (for instance, the theories behind the design of the Bastides and the popular neighborhoods of Versailles, versus those used in the monumental Versailles of the king and his court). These two different origins of theories generate different architectures. One is ordinary, the aforementioned *architecture banale* or the architecture of everyday life, and the other is scholarly, *architecture savante*, or high-style architecture. They deplore the fact that elite architectures all tend to sever their relationship to the city and to become monumental, a phenomenon that they recognize in the study of the City of Versailles as well as in the study of the emergence of the modern movement (Castex et al. 1977).

32. Historian Corboz's terminology helps explain further the scope of the Versailles School (Corboz 1992). He differentiates between the *city of the geographer* (the Conzenian and the Versailles School's interest) and the *city of ideas* (Choay's primary interest). The city of the geographer is both built and used; its design is often governed by two, sometimes conflicting, processes. One is a set of culturally-bound traditions and the second is theories consciously elaborated by one of several elites (architects, bankers, etc.). The Versailles School studies both types of design processes and considers them both part of the history of design theory.

33. This concurs with Rossi, who denies the value of urban design in the term's narrow sense of designing the city because the city should evolve, rather than be designed (Rossi 1982, 116).

The particular cases studied show that good models used to design the city oscillate back and forth between the need to control and provide order in city design and the need to create environments that respond to the needs and actions of their immediate inhabitants. This puts in question the value of a global composition of the city (an underlying concern and general direction in the evolution of urban design theory), proposing instead an emerging definition of city form through the incremental acts of many people.³³ The search for formal models which allow this incremental, participatory process of designing the city points to simple urban blocks subdivided into several parcels. Street hierarchies work well as long as the superblocks created are further subdivided into autonomous blocks with clear, legible public access and their own sets of independent parcels.

The Legacy

The Versailles School favors a separate discipline for studying the built landscape that serves to evaluate design theory. The novel aspect of this stand forces the School to discuss methods and philosophy in a multidisciplinary context, which neither the Conzenian nor the Muratorian schools had to do. The development of an applied discipline paves the way for a systematic approach to design evaluation. Also, the simultaneous investigation of traditional and elite city-building processes invites a critical review of design theory in light of its actual achievements. The work recognizes the need for mixing tradition and innovation in the way cities are designed, and for keeping monumentality under control.

The Versailles work has taken solid roots in both design practice and research in francophone countries. Typological and morphological investigations are fully integrated into the growing discourse on the built landscape and its design. However, for all its outreach into the disciplines involved in the urban crisis, and in spite of its multidisciplinary origins, the Versailles work has made slow progress in the field of urban planning – a field that is separate from architecture in post-World War II France. When the Institut d'urbanisme of the University of Paris undertook a major research project on urban morphology and its applications to planning in 1985, it did not include any of the Versailles faculty, even though architects from other countries were invited to contribute to the project (Choay and Merlin 1986). Since then, however, both Panerai and Castex have been teaching urban history and morphology at the Institut, and the final edition of the Institut's research on morphology contains further references to the Conzenian School (Merlin et al. 1988).

Conclusion

The three schools of typomorphology offer an intellectually challenging framework for thinking about the built landscape within the historical context of the city. Italy's provides a theoretical foundation for planning and design within age-old traditions of city building. England's offers a scholarly approach to researching how the built landscape is produced. And France's outlines a new discipline that combines the study of the built landscape with a critical assessment of design theory. Together these schools suggest an order for a formidable agenda of research, planning, and design that takes into account the relationships between space, time, habitat, and culture. In this order, type provides the essential conceptual framework for understanding the built landscape and intervening in it.

All three schools claim that the built landscape must be understood in three fundamental dimensions: time, form, and scale. The built landscape is in a constant state of evolution and change, subject to sociocultural forces constructing, using, and transforming space. So all typological work must be linked to a measure of time. Built and open spaces together constitute form. They are persistent; they dominate the definition of the built landscape as use and function come and go according to changing social practices and related needs. Since elements of form are highly sensitive to sociocultural forces operating over time, they are morphogenetic rather morphological. And several scales permeate the structure of the built landscape from the inhabited room to the city as a whole, and the block and district in between.

Together these three dimensions of time, form, and scale weave an intricate web of relationships between fields and disciplines which all too often remain separate. A focus on the formal dimension of the built landscape facilitates linkages between analysis and design, linkages that are tenuous when urban analyses address primarily economic or social dimensions. Yet, by the same token, the time dimension insures that form remains linked to sociocultural and historical forces. The marriage of space and time is the marriage of architecture and history, and architecture and the social sciences as advocated by Porter and Tigerman (1992). And the scalar dimension of the built landscape demands the integration of architectural and city planning approaches (Goode 1992).

Debates about typomorphology in the three schools illuminate the use of type in design theory. The schools differentiate between descriptive, analytical, explicative critical, and generative types. They are therefore able to separate con-

ceptually the description, analysis, and critique of the historical and the existing city from the projection of the future city. They can learn to know the built landscape, to explain it, and to theorize about its production without worrying about its future design. The three schools provide the tools to monitor the emergence of new types and to relate them to theory, whether it is tradition-bound and culturally defined or consciously articulated. And they can evaluate the actual effects of past design theories on the existing built landscape.

The intellectual framework sketched out by the three schools is propitious for research and teaching about the built landscape (Moudon forthcoming). Further, this material offers a basis for what the Birmingham Group defines as townscape management. Managing the built landscape is an ongoing process that includes planning, designing, and construction as continuous tasks performed by many different actors. A typomorphological approach yields a data base on the built landscape that can be used by various public entities charged with maintaining, upgrading, and modifying it. Public regulatory and capital improvement agencies responsible for urban planning and design, public works, transportation, parks and open space, housing, and community development need to work together to build on the wealth in urban infrastructure and amenities already in place. A shared data base can inform and guide future intervention.

This intellectual framework should also prove useful to such practitioners as Daniel Solomon (1992), Andres Duany and Elizabeth Plater-Zyberk, Peter Calthorpe (Katz 1994), Stanford Eckstut, John Kriken, and others who, in an intuitive way, have come to believe that solutions to good community design lie within the broad context of making the city. Their town plans, street and land subdivision layouts, and building codes as architectural strategies to balance community and individual needs belong together under the theoretical umbrella of typomorphology. The three schools of typomorphology offer such practitioners a rich data base on forms and form making processes. And more importantly, morphogenetic research grounds this design work in the history of city building. Typomorphology no longer need to be arbitrarily borrowed icons. They are structuring concepts which have been tested in the reality of city building. They are place-bound and time-bound, responding and adapting to new social, economic, and technological circumstances.

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