



MAPPING URBAN SPACES

Designing the European City

Edited by
Lamberto Amistadi, Valter Balducci,
Tomasz Bradecki, Enrico Prandi,
and Uwe Schröder



MAPPING URBAN SPACES

Mapping Urban Spaces focuses on medium-sized European cities and more specifically on their open spaces from psychological, sociological, and aesthetic points of view. The chapters illustrate how the characteristics that make life in medium-sized European cities pleasant and sustainable – accessibility, ease of travel, urban sustainability, social inclusiveness – can be traced back to the nature of that space.

The chapters develop from a phenomenological study of space to contributions on places and landscapes in the city. Centralities and their meaning are studied, as well as the social space and its complexity. The contributions focus on history and theory as well as concrete research and mapping approaches and the resulting design applications.

The case studies come from countries around Europe including Poland, Italy, Greece, Germany, and France, among others. The book will be of interest to students, scholars, and practitioners in architecture, urban planning, and landscape architecture.

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INTRODUCTION

The ArchéA Method

Lamberto Amistadi, Coordinator and Scientific Director of the ArchéA project

This book presents a collection of theoretical results of a research project called ArchéA (2018-1-IT02-KA203-048305).

ArchéA stands for Architectural European Medium-Sized City Arrangement and is a research project co-financed by the European Union under the program known as Erasmus+ Strategic Partnership for higher education. The program aims to innovate teaching relating to the study and design of European medium-sized cities (between 100,000 and 500,000 inhabitants): all five partners involved in the program are architecture schools based in medium-sized cities: Cesena/Bologna, Aachen, Gliwice, Parma, and Rouen.

Between 2000 and 2006, the European Spatial Planning Observation Network (ESPON)¹ conducted an in-depth study on the European city, funded by the INTERREG program of the European Regional Development Fund.

The aim of the SMESTO research² (Small and Medium-Sized Towns) was firstly to define the European medium-sized city, making it a category. This is based on a fairly obvious intuition: first, that there were cities in Europe with common characteristics that could be ascribed to the same category; second, that these characteristics made them a privileged place to live from many points of view, including accessibility, mobility, socioeconomic conditions, and also the psychological and aesthetic quality of the public space.

The aim of the research was to transform this intuition into a precise classification criterion, both to protect this particular urban phenomenon from uncontrolled growth and sprawl, and to frame their development within a broader design conceived as a constellation of medium-sized cities, or with a more technical language, in the perspective of regional territorial hubs.

The classification criterion of the SMESTO model is entirely placed in relation to the size of the city; that is, the decisive element is its dimension. The benefits deriving from an average dimension are analyzed according to three approaches: morphological, functional, and administrative.

However, all three approaches are treated – in their very own words – in a rather superficial way, and their exploration is postponed to later research. Also because the aim of the SMESTO program was not so much to further these approaches, but to compare and

analyze the classification criteria existing within the different national legislations of the member-states of the European Union and to identify a common classification criterion.

The ArchéA project aims to investigate one of these different aspects that can be considered a furthering of the morphological approach: the open space of the European medium-sized city.

The initial outline follows that of the SMESTO research to some extent, namely, the idea of starting from a fairly obvious intuition and trying to define its boundaries. The idea is that the open space of the European medium-sized city can be reasonably recognized – especially when compared to the large cities or megalopolises of Southeast Asia or South America – as a space of great quality from psychological, sociological, and aesthetic points of view, and for this reason, it must be held as a resource to be defended and consciously developed.

Assuming the open space of the city as a field of investigation allows us not only to consider this research as a furthering of the morphological approach of the SMESTO research but also to shift attention from an abstract morphological approach – in all 400 pages of the research, there are only outlines where the shape of the city is completely absent or reduced to an abstract symbology based on dots and spots without form – to an approach according to which urban morphology is placed in relation to the space of the city and ultimately to architecture.

This relationship between the shape of the city and architecture is very important for us not only because we are architects but also because it allows us to recover an Italian and European tradition of urban studies for which the morphological approach to the study of the city had reached a much different level of insight and awareness, with writings and projects that brought urban morphology side-by-side with architecture.

As we know, the medium term that conveyed the transition from form to space was the concept of building type. But the object of this research is no longer the relationship between building typology and urban morphology, but a broader possibility that was only partially experienced through that relationship; that is, the possibility of placing analysis and design, theory and practice, within a dialectical relationship where the ambiguity of this relationship is addressed, if not resolved, on the concrete terrain of drawing and representation.

In a booklet with the indicative title *Deciphering Architecture*, Ignasi de Solà-Morales (2001) says that the relationship between theory and design takes concrete shape through the tools of topographic and cartographic drawing. Oswald Mathias Ungers (1997, 17) goes on to say: “This highlights the idea of the city itself as a support on which to draw.” In the report on the design competition for the San Rocco district in Monza, Giorgio Grassi and Aldo Rossi (1970, 70) write: “In this sense, it seems important that the general case, the law that presides over the design, is still clearly legible in the drawing.”

The drawing is the element of mediation that stands between the existing city, the famous “urban artifacts” in the form of the past participle, “what has been done,” and the project. The intentionality with which the language used to describe the facts is constructed immediately leads the drawing from description to connotation, from analysis to project within a circular process whose direction is difficult to establish: the theory informing the analysis leads to the design through the drawing, but the same design outcome acts retroactively on the theory by modifying its initial assumptions.³

This same circular structure along which theory, analysis, and design are arranged is taken up in the learning/teaching method of the ArchéA program and defines the contents

of the so-called intellectual outputs: a theory course given online and the assumption of Bologna and Aachen as exemplary case studies on which to exercise knowledge, analysis, and design. Bologna and Aachen are not only the contexts used to select the study areas for the design workshops,⁴ but they also become the specific objects of the representation, with the aim of defining the most suitable nomenclature, signs, and legend to represent the characteristics of the open space of the European medium-sized city according to five different approaches, each corresponding to a different school to which the five partner countries belong: a phenomenological approach (*mapping spaces*) of the Department of Spatial Design of the RWTH Aachen University; an approach related to the Italian tradition of urban studies (*mapping places*) of the Department of Architecture of the Alma Mater Studiorum University of Bologna; an approach that puts green space and landscape at the center of the urban project (*mapping natural space*) of the ENSA National School of Architecture of Normandie; an approach according to which urban regeneration passes from the design of new centralities (*mapping centralities*) of the Department of Engineering and Architecture of the University of Parma; and an approach that tries to detect the social component of urban complexity (*mapping social space*) of the Faculty of Architecture of the Silesian University of Technology.

In this way, the cities examined in the observations are not fixed and identified once and for all but are subjected to an internally coherent symbolic activity according to which the observer knows what they produce by knowing it and produce what they know by producing it, generating a domain of new parallel and complementary descriptive dimensions: these descriptions do not arrange the representation at its final result, they do not exhaust its field of possibilities, but they give an account of the complexity of the urban phenomenon. The re-drawings of Bologna and Aachen are also collected in an illustrated atlas which includes 42 tables.⁵

This volume entitled *Mapping Urban Spaces: Designing the European City* presents in-depth essays by the members of the partnership and some guests in relation to the five thematic sections listed above. These theoretical writings constitute the conceptual cornerstones of the program starting from the same common premises and the same need for a theory of architecture, the substance of the relationship between analysis and design, the value of drawing as a tool for description, reading and interpretation of the city, as well as a vehicle for its transformation process.

Within a tenuous discipline such as architecture, this work can only concern an attempt to establish the terms of communication by convention; to rearrange, recapitulate, and compare more or less outdated issues that cross different European study and teaching traditions, according to different dominant aspects and with different meanings; and make such comparison available to as many students, teachers, and architects as possible.

Thus, between theory and design, hypothesis and results, science and art, ArchéA simply seeks to be a contribution that cultivates the ambition to consolidate a heritage that is too often underestimated: the historical experience of European architecture. Architecture understood dually, as the discipline and the set of works and places historically given and its ability to build a city that, due to size, shape, and quality of public spaces, must be considered as a model, if not to be replicated then surely to be used as a term for comparison and a measure of the intervention on the present and future city.

In other words, the question becomes: what are the characteristics of the urban space that allow us to ascribe European medium-sized cities to the same category? Recognizing that these characteristics make the European city a privileged place to live, what are the tools of

the urban design that allow us to bring these characteristics back into the design of the contemporary city? That is, a city within which citizens can recognize themselves and within which citizenship continues to be – as the German philosopher Johann Herder maintained, one of the fathers of European cultural identity – the very language of one’s own city.

On the other hand, the city intended as a place of citizenship and democracy has been closely related to the Erasmus program since its origins. In fact, the Erasmus program – which is also very Italian because it was an Italian official, Domenico Leonarduzzi (known as “Papa Erasmus,” the son of Italian emigrants in Belgium), who convinced Mitterrand to finance the project – was created thanks to the passion and political pressure of the first and now largest association of European students, founded by Franck Biancheri in the 1980s, a French student who later founded the trans-European party NewEuropeans. The association took the name AEGEE (Association of General States of the Students of Europe) in honor of the islands and cities of the Aegean where democracy arose, combining a touch of Greek democracy with a bit of the French Revolution.

Notes

- 1 <https://www.espon.eu/>.
- 2 The Role of Small and Medium-Sized Towns (SMESTO). Final Report. https://www.espon.eu/sites/default/files/attachments/fr-1.4.1_revised-full.pdf.
- 3 It is a question of entrusting the drawing with that function of linguistic mediation which is indispensable for any intellectual operation and which Aldo Giorgio Gargani places at the base of a constructive and procedural scientific and philosophical method: “Now we know, and we have seen it above, that any cognitive operation, every description is not a static reflection of a state of affairs implemented by a subject independent of the state of affairs, but that it has a constructive and procedural character; in short, a world is as much described, discovered, as it is made and constructed. [...] The description of the observer unfolds as a constructive procedure that the observer recursively applies to himself. Therefore, an observer’s theory puts the observer and his descriptions in a sequence in the course of which the observer is configured as the result of the operations that recursively apply to his own result” (Gargani 1993, 68).
- 4 ArchéA’s program included two architectural design workshops (Intensive Programs for Learners) <https://site.unibo.it/ArchéA/en/mobility-1>: “Redesigning the European medium-sized city: the ex-market area of Bologna” (Cesena, November 23–30, 2019) and “Redesigning the European medium-sized city. The Driescher Hof in Aachen’s periphery” (Aachen, November 21–30, 2020). The projects for Bologna are published in the volume “The ex-market area of Bologna. Redesigning the European medium-sized city. International Workshop Bologna–Cesena, 11/–23 – 12/01/2019,” École nationale supérieure d’architecture de Normandie 2019.
- 5 *Mapping the City, on urban spaces – an Atlas in Aachen and Bologna*, Florence: Aión, 2021.

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PART I

Mapping Spaces

The Phenomenological Approach to
the City of Spaces



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1

A SPATIAL UNDERSTANDING OF ARCHITECTURE AND THE CITY

Uwe Schröder

Let us imagine a work of architecture at the moment of its emergence, merging design with construction, from the originating idea all the way to the keystone, but still without any imputation of a meaningful purpose, without aligning it with the existing location, and without any presuppositions concerning the time that may have elapsed, which is to say, in relation to a “framework,” and in the absence of any internal or external “padding,”¹ so to speak: at this point, it becomes conceivable that neither “purpose,” nor “place,” nor “time” is among the attributes of a building, despite the fact that these factors have, more or less, influenced its realization as “external” factors. The external factors determine the “inner” specifications – those concerning “materials,” “construction,” “form,” “function,” and “space” – all of which emerge, in turn, as characteristic attributes of the building itself. The essential work of design and construction also consists, then, in transferring such external conditions, by means of the idea, into the architecture, into the building, inscribing them onto its inner specifications.² This is not, however, the time or place to investigate this process further or to reflect upon the significance of the design process, the idea, or this process of transfer: what is pursued here instead is the content of these basic concepts.

In the discipline of architecture today, “space” is perhaps among the most controversial concepts, and perhaps the most ambiguous, too – but why should this be the case? While in previous eras, disputes over the conceptual and contentual determination of “space” were invested with claims to philosophical and physical authority, in the late 19th and early 20th centuries, the discourse on space migrated into various disciplines, among them art history, sociology, phenomenology, and psychology, but the natural sciences in particular. Today, the implications of the term “space” and the theoretical model that underlies it are still being negotiated and affirmed in diverse ways within the various disciplines. It appears that only a transdisciplinary history of the concept could provide insight here, one that would bring together the various “evolutionary” threads of understanding and imagination, meaning and content, and theoretical models and synesthetic perception together in a nuanced way. With the *spatial turn* in the cultural and social sciences that began in the late 1980s, and also with the succeeding revival of an architectural and theoretical discourse on space, spaces, and spatiality³ around the turn of the millennium, a disciplinary differentiation of conceptual terminology has become evident.

A Spatial Understanding of Architecture

With regard to architecture, we presuppose here a spatial understanding that attributes to architectural space a phenomenal independence within the differentiated spatiality of the lifeworld, and alongside other natural, cultural, and sociological conceptions of space: architecture situates, “founds and joins” spaces that appear in the interiors of buildings – such as courtyards – or among buildings – such as squares – and which, by virtue of the proportional proximity of their structural boundaries, we perceive as inner spaces. Other spaces, such as outer spaces, which, by virtue of the remoteness of their boundaries, have the effect of open, expansive “fields” – such as parks – and do not count as architectural space in the strict sense of the term, although no doubt they contribute to the spatiality of the city.

Architectural spaces appear as place-bound inner spaces that are essentially produced by their structural boundaries. The way in which we are able to move through various spaces within a building, which are connected with one another through openings, corresponds to our everyday experience and perception. However, with this straightforward description of the phenomenon as a perceived event, we have already contrasted the architectural understanding of space to mathematical space, for instance, as well as to other relational conceptions of space. Therefore, we would not refer to “the” space that defines a building, for example, or a city, as a homogenous entity, but instead differentiate between the spaces of a building and, similarly, the spaces of a city according to their appearance.

Among the “primal phenomena” of architecture that pertain to this aspect of space is the “separation of inner from outer.”⁴ In material, constructive, and formal respects, architecture moves toward the boundary; toward the boundaries between spaces⁵; toward the external boundary between inner and outer initially, which is to say between the interior and exterior of a building; and then toward the internal boundaries between various spaces in the interior of a building. Here, external refers to “being outside,” to the situation of being in front of the building, but says nothing, however, about the spatial quality of this situation, since the outside, in relation to the building, may appear as an external space, as an expansive field, or instead as an inner space, as a street or square. In other words, even outside, we may be inside, since even on the outside of a building, architectural spaces can manifest themselves as inner spaces. Nor does the fact that these spaces may not be roofed annul their spatial appearance – as with a courtyard in a building’s interior. Architecture creates structural boundaries between spaces, and determines transitions as openings, which may themselves appear as autonomous spaces, a door or a gate, a window or a niche.⁶ Ordinary language also expresses everyday perception, for example, when we use prepositions to refer to the habitual spatiality of a situation: when we speak, for example, of being in the doorway, in the niche, at or in the window, in the room or the hall, as well as being in or on the street.

Excursus: Architectural Modernity and Space

The oft-misunderstood paradigm shift toward the fourth dimension of space-time, adopted so enthusiastically by modernists, guided architecture toward new interpretive strategies in both praxis and theory.⁷ A far-reaching erosion of the structural boundaries of interior space caused the traditional dialectic of inner and outer to retreat into the background. For

architecture, this meant a self-imposed renunciation of independent space formation in favor of the formal composition of structural elements, which aimed toward the substantial nullification of the boundary between inner and outer. When this modern development of “spacelessness” in architecture is discussed,⁸ the term should by rights refer to the conceptualized renunciation of the autonomous formation of interior spaces (Figures 1.1 and 1.2).⁹



FIGURE 1.1 Ludwig Mies van der Rohe, Farnsworth House (1951), photograph: Yorgos Efthymiadis / yorgosphoto.com.



FIGURE 1.2 Ludwig Mies van der Rohe, Farnsworth House (1951), photograph: Yorgos Efthymiadis / yorgosphoto.com.

A Spatial Understanding of the City

When we attempt to describe the spatiality of the city from an architectural perspective, we are neither obliged to challenge the architectural understanding of space described here, nor are we obliged to replace the underlying theoretical model, such as by exchanging an absolute concept of space for a relational one. We describe the substantiality of the spaces of the city as perceived spatial situations, which here seem more like inner spaces, and elsewhere more like outer spaces, and which act upon us accordingly. With regard to the inner spatiality of the city, it is worth remarking here that we have at our disposal both a traditional theoretical discourse and a differentiated typology of spaces, one that has generated an encyclopedic collection of references for urban design. Naturally, the same cannot be said for the outer spatiality of the city, since it is not conceived in terms of differentiated spaces, but instead as continuous space, at least in the tradition of architectural modernity. But such a relational conceptualization of space – and this should be self-evident – involves a greater attentiveness to form, to the morphology of built structures, to a city of objects. In order to overcome this inherited conception of space, we would need to imagine, describe, and define the outer spatiality of the city as a city of spaces, too. A typology of the outer spaces of the city would then have the task of introducing a differentiated definition of the meaning of familiar and excessively generalizing terms – those of the cityscape or townscape – and of contributing to a synchronous spatial understanding of the inner and outer spaces of the city (Figures 1.3 and 1.4).

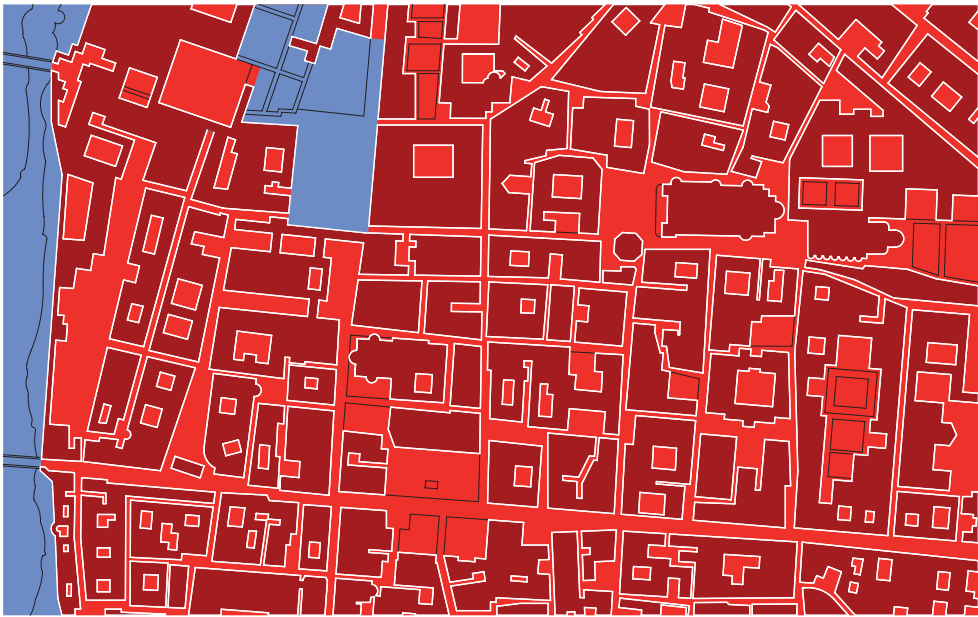


FIGURE 1.3 Parma, red-blue plan, redrawn after: Colin Rowe, Fred Koetter, *Collage City*, Basel/Boston/Stuttgart 1984, Parma, mass planning, p. 88. From: Uwe Schröder, *Pardié: Concept for a City after the Time Regime of Modernity*, Cologne 2015, p. 32.

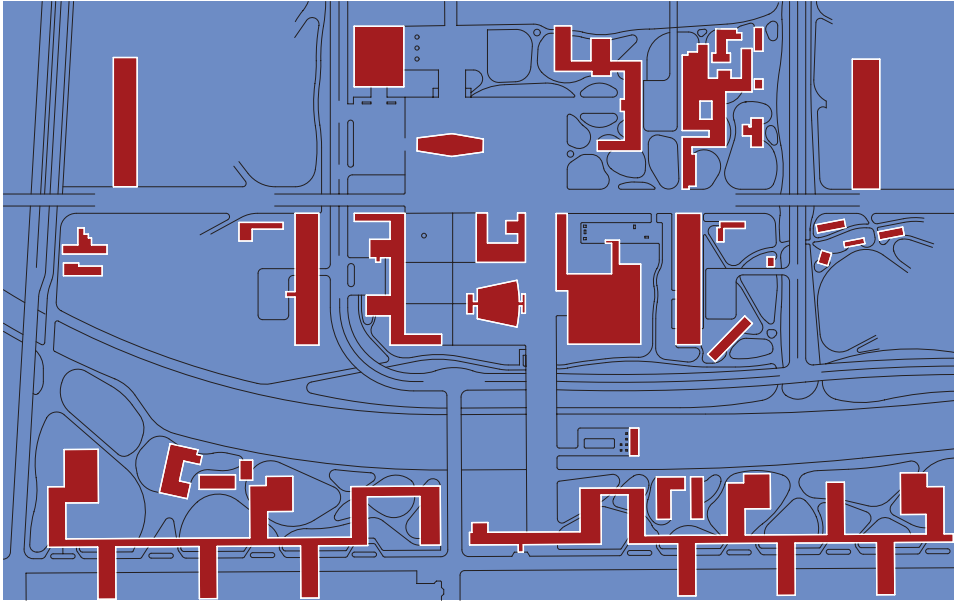


FIGURE 1.4 Saint-Dié, red-blue plan, redrawn after: Colin Rowe, Fred Koetter, *Collage City*, Basel/Boston/Stuttgart 1984, Saint-Dié, mass planning [Le Corbusier, reconstruction plan for Saint-Dié, 1945], p. 89. From: Uwe Schröder, *Pardié: Concept for a City after the Time Regime of Modernity*, Cologne 2015, p. 33.

Excursus: Architectural Modernity and the “Open City”

In opposition to Sitté’s aesthetics of urban space, urban planning during this era increasingly took a relational understanding of space as its point of departure: among other things, the opening up of urban spaces was intended to achieve a profound interpenetration between city and landscape. Individual buildings emerged as *solitaires*, all configured in green spaces that were connoted as hygienic, and which supported a compositional relationship that was not conceived in terms of independent spaces. When we speak – with reference to this modern development in urban planning, whose impact continues up to the present – of the “oblivion of the city,”¹⁰ then we are once again referring to a conceptualized renunciation of the autonomous formation of dedicated urban spaces in the form of streets and squares (Figures 1.5 and 1.6).¹¹

The Spatiality of Architecture and of the City

The task of architecture is to facilitate the emergence of dedicated spaces in places. All other definitions – including the aforementioned definitions of inner and outer – aim toward this goal: we build for the sake of these spaces. The spaces we live in, then, are architectural spaces. And what is true of buildings is also true of the city: facilitating the emergence of dedicated spaces in places is also the task of urban planning! It is just that in this instance, we are not only grappling with architectural spaces, which is to say with inner spaces, but also with other spaces at the same time, with outer spaces that require differentiation, in any event, not with space as one homogenous entity. The city of outer spaces is no longer



FIGURE 1.5 Ludwig Mies van der Rohe, Lafayette Park (1960), photograph: Fernando Schapochnik.



FIGURE 1.6 Ludwig Mies van der Rohe, Lafayette Park (1960), photograph: Fernando Schapochnik.

to be understood as a diffuse continuum, but instead presents itself as a coherent, articulated whole, consisting of situations that are experienced as outer spaces, places, fields, quarters, and urban districts, all of which do justice to the varied characters and atmospheres residing in the “interplay between city and landscape.”¹² Architecture, then, has the task of explicitly identifying these outer spaces, of delimiting, contouring, and marking them, and of



FIGURE 1.7 *Pardié (Or: The Reintegration of the Modern City)*, collage by Uwe Schröder with Matthias Storch, 2015.

shaping transitions between spaces so that they can be experienced in spatial terms, thus guiding the divided urban context toward a “city of spaces” (Figure 1.7).¹³

Notes

- 1 “Architecture is a foil for human life, but the two only appear together: in a certain sense, it is the framework (*Rahmenwerk*) and the padding (*Füllwerk*) together that form the complete concept of ‘architecture.’” Sörgel, H. 1921. *Architektur-Ästhetik*, 3rd ed., Munich. p. 269.
- 2 See also the special issues of *der architekt* devoted to the *Grundlagen der Architektur: Ort. Grundlagen der Architektur I (der architekt 3/2017); Material. Grundlagen der Architektur II (der architekt 6/2017); Funktion. Grundlagen der Architektur III (der architekt 6/2018); Konstruktion. Grundlagen der Architektur IV (der architekt 6/2019)*.
- 3 See the present author, “Verlust des Raumes,” in: *der architekt 1/2000, Verlust des Raumes*, initiated by Denk, A., pp. 19–21.
- 4 See “Die Korrespondenzen von Leib und Architektur: Urphänomene,” in: Meisenheimer, W. 2000. *Das Denken des Leibes und der architektonische Raum*. Cologne: Verlag der Buchhandlung Walther König. p. 24.
- 5 See present author, “Die Wand. Grenze der Architektur – Architektur der Grenze,” in: *der architekt 4/2016*, pp. 20–25.
- 6 Schröder, U. 2016 (see n. 6), p. 20.
- 7 László Moholy-Nagy, for example, arrived at a relational conception in this way: “Spatial design is the design of the spatial relatedness of bodies,” in: idem, *von material zu architektur* (1929) in: *Neue Bauaushbücher*, Wingerl, H. M. (ed.), Berlin 2001, pp. 193–211.
- 8 Present author, “Die eingeräumte Stadt” (2008), in: idem, *Die zwei Elemente der Raumgestaltung. Ausgewählte Schriften* (2009), ed. the Lehr- und Forschungsgebiet Raumgestaltung, Department of Architecture, RWTH Aachen, Tübingen/Berlin: Wasmuth, p. 69.
- 9 See explanatory remarks on the “natural science of space,” in: Denk, A., Schröder, U., and Schützeichel, R. (eds.) and research assistant Schriener C. 2016. *Architektur. Raum. Theorie. Eine kommentierte Anthologie*, Tübingen/Berlin: Wasmuth, p. 13.
- 10 Schröder, U. 2009 (see n. 9), p. 69.
- 11 Denk, A., Schröder, U., and Schützeichel, R. 2016. (see n. 10), p. 13.

- 12 See in particular the collection of outdoor spatial situations in: Lampugnani, V. M., Domhardt, K. S., and Schützeichel R. (eds.) 2014. *Enzyklopädie zum gestalteten Raum. Im Spannungsfeld zwischen Stadt und Landschaft*. Zürich: gta Verlag.
- 13 On the terminology of the “city of spaces,” see also: Denk, A. and Schröder, U. (eds.) 2014. *Stadt der Räume. Interdisziplinäre Überlegungen zu Räumen der Stadt*. Tübingen/Berlin: Wasmuth.

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2

LANDMARKS IN A HISTORY OF SPATIAL MAPPING

Felix Mayer

Prologue: Mapping Space

In the natural and social sciences, philosophy, and arts, “space” has become the object of several interdisciplinary investigations.¹ When we talk about the city, urban and architectural spaces (henceforth: spaces) form the basis of our collective understanding. While (historical) texts clarifying the theory and concepts of those spaces have been widely researched and contextualized,² the illustrative potential of much mapping related to spaces seems largely unexplored.³ This seems all the more astonishing given the notion that drawing is the language of architects.

If we want to deal with *spatial maps*, we first have to define what we understand under the term *mapping space*. Hake defines mapping as “collecting, processing, storing and evaluating spatial information as well as visualizing it.”⁴ The method is thus making a planar graphical illustration of the data collected in the form of maps or plans. The *spaces* are the objects to be investigated. They are simultaneously the topic and the challenge. The difficulty lies in the complexity of the space as something that perceivably exists yet remains intangible. As we will see, the methods of mapping differ depending on the author’s respective definition of space. For the present study, maps have been chosen that translate the three-dimensionality of urban space into planar, scale drawings. These include both holistic and situational observations, large-format maps, small sketches, individual works, as well as parts of theoretical essays. The present selection focuses on relevance and efficacy, and certainly has its limitations. More crucial than the claim to completeness is the question of whether a coherent history can be identified within the mapping of urban spaces. On the basis of three selected *landmarks*, the following discussion explores the extent to which coherent theories, methods, and forms of representation have developed.

La Nuova Pianta di Roma (1748) – Giovanni Battista Nolli

The *Nuova Pianta di Roma*, an impressive map of the city of Rome seen in Figure 2.1, is considered to be the initial work of modern spatial mapping. Giovanni Battista Nolli and his colleagues began working on it in 1736. In addition to contemporary buildings, the plan was also intended to accurately record all Roman constructions from antiquity. Nolli's own ambition was to express an absolute scientific exactness that had not been attained before then. After 12 years of work, the *Nuova Pianta di Roma* was printed in 1748. The mapping measures 205 by 176 cm and consists of 12 separate copperplate prints, whose precision and fineness remain unmatched to this day.

Nolli was able to draw on a variety of different representational methods in mapping the city, since Rome had no shortage of city depictions in the 18th century. Matteo Gregorio de Rossi's *Nuova Pianta di Roma presente* from 1668, for example, shows an orthogonal view of Rome, whereby the most important religious monuments are shown as plan drawings and secular buildings are integrated as axonometric projections. In 1667, Giovanni Battista Falda published a large city map from an orthogonal viewpoint, where the elevations resemble isometric projections.

Nolli, however, didn't cite any of these precedents as his model. Rather, he chose more cartographically strict and precise mappings with objective representational methods, such as Leonardo Bufalini's 1551 survey and the ancient *Forma Urbis Romae*. In so doing, he defined not only his frame of references but also the tradition in which he wanted to be seen.⁵

Like these predecessors, Nolli abstains from pictorial elements within the map, thus emphasizing his objective working and representational method. He separates the image of Rome



FIGURE 2.1 Giovanni Battista Nolli, Detail of the *Nuova Pianta di Roma*, 1748. Attribution: Giambattista Nolli, Public domain, via Wikimedia Commons.

from its plan. The whole map shows the urban district inside the walls at a scale of roughly 1:2750, aligned to magnetic north (and not to the east, as was common at the time). From his role model Bufalini, Nolli adapted the figure-ground diagram from an orthogonal viewpoint. The clearly defined buildings are filled with fine hatching. Antique and post-antique buildings are differentiated by their tone and outline, whereby the original areas of the antique buildings are indicated beyond their existing state in thin dotted lines. Differences in height are indicated by subtle diagonal hatching, in contrast to the horizontal hatching for buildings. In public spaces, the details of obelisks and staircases are accurately drawn in addition to gardens and monuments. Even the slight asymmetry of the Spanish Steps is recognizable.⁶

The consistent representation of the building structures in black hatching not only reveals construction development as part of the urban fabric but also the connected spaces in the city. Streets, squares, and freely accessible courtyards are consistently left in white. Sacred buildings and publicly accessible areas are rendered as ground plans with amazing detail. When viewed as a whole, one immediately understands Nolli's conception of the city as a series of spaces that extend not only between houses through streets and squares but also into the closed structures of churches and loggias. What is drawn thus refers to what is not drawn, or, in other words, the buildings in black hatching interact with the spaces that accumulate between the buildings as a continuum, with all its expansions and contractions. Streets and squares thus become corridors and rooms in that great house that, according to Leon Battista Alberti, is the city.

Nolli's plan of Rome had a lasting influence on subsequent Italian cartography, especially in terms of its precision and objective way of depicting the orthogonal view of buildings' ground plans. From Antonio Francesco Bandi's plan of the city of L'Aquila (1753) to G. B. Piranesi's representation of ancient Rome (1756) and Giovanni Carafa Duca di Noja's plan of Naples (1775) to the plan of Padua made by Giovanni Valle (1784). To this day, the "Nolli Plan" stands for the mapping of urban spaces, in addition to its amazing precision and detail.

***Der Städtebau nach seinen künstlerischen Grundsätzen*⁷ (1889) – Camillo Sitte**

In the second half of the 19th century, a new way of looking at the city and its spaces developed. Interdisciplinary research on space made humans with all their perceptual abilities the protagonist. The Viennese architect, art scholar, and educator Camillo Sitte (1843–1903) permanently shifted the focus of urban planning theory toward the spaces of the city with the publication of his 1889 book *Der Städtebau nach seinen künstlerischen Grundsätzen. Ein Beitrag zur Lösung moderner Fragen der Architektur und Monumentalen Plastik unter besonderer Beziehung auf Wien*. Sitte follows Aristotle in thinking that a city must not only be functional but also be beautiful.⁸ He thus sought to help a field that he thought was too technically oriented return to its artistic roots. In the preface of his book, he describes his method of

examining a lot of beautiful old squares and city layouts in general for the causes of their beautiful effects, because these causes, once correctly identified, would in turn represent a set of rules that would then enable one to achieve similarly excellent effects by following them.⁹

That he mostly selects historical plazas and urban facilities for his examination is due to him maintaining a deliberate distinction between historical and contemporary urban development projects. He does examine contemporary urban extensions sporadically, but only in order to criticize them before finally demonstrating his rules using his own design for a section of Vienna's Ringstrasse as an example.

Der Städtebau nach seinen künstlerischen Grundsätzen is probably the first theoretical writing of modern urbanism in which mapping takes on such a significant function. There, Sitte uses concise ground-plan drawings as a characteristic argumentative instrument to accompany and clarify his theses. In the preface to the German first edition, he explains that he wanted to "(offer) all the material together with theoretical deductions to the practitioner,"¹⁰ which is why the homogeneity and comparability of the 96 mappings in total were particularly important to him. Indeed, almost all the drawings were made using the same scale and with the same reduced drawing technique.

The selection of case studies is subjective, but not according to any idealization of particular eras. Instead, he is more interested in demonstrating universal and historically founded rules for the design of spaces. In addition to squares and their succession, like those in the city of Siena seen in Figure 2.2, he also presents spatial sequences from the Renaissance as well as from the Baroque era and the 19th century.

In Sitte's highly reduced mapping, there are only three graphic elements: public buildings, especially churches, are shown in black; the rest of the buildings are homogeneously hatched without any differentiations; and the enclosed spaces are left white, as in Nolli's work.

It is unknown whether Sitte directly commented on Nolli, but his adoption of Nolli's technique for depicting spaces and the same graphic feature of cross-hatching is probably reference enough. Unlike Nolli, Sitte does not document the whole city but carefully selects the situations depicted. Like a teacher, he uses his mappings to demonstrate the qualities of manageable and well-composed spaces. He explains a sequential image of space and creates a sense of movement through space by changing locations. The enclosed nature of streets and squares is so important to him that, unlike Nolli, he maps public buildings not as space but as black surfaces.

Sitte's reflections on the artistic fundamentals of urban planning and his focus on spaces have influenced entire generations of architects and urban planners. Karl Henrici (1842–1927) and Theodor Fischer (1862–1938) practically applied Sitte's theories directly in various competition entries¹¹ and developed them further through teaching and research.¹² Not only did Sitte's reflections on the artistic aspect of urban design have great resonance, his depictions of urban planning formations also became iconic, as Helene Bihlmaier vividly demonstrates using the example of Sitte's depiction of St. Mark's Square as well as its adoption and modification by subsequent writers.¹³

Publications supporting Sitte's theses of an artistic urbanism often used similar forms of representation and were increasingly complemented by perspectival illustrations, such as Raymond Unwin's evocative city drawings¹⁴ or Paul Schultze-Naumburg's photographs.¹⁵ Such pictorial representations of the city would be revisited in the second half of the 20th century by Kevin Lynch and Gordon Cullen, among others.

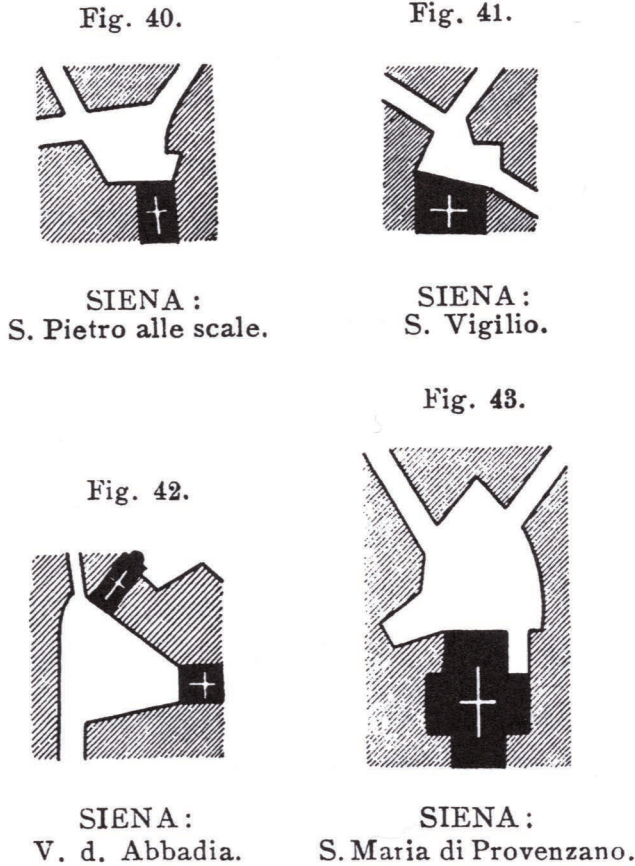


FIGURE 2.2 Camillo Sitte, mappings, “The Irregularity of Ancient Public Squares.” Here: case studies from Sienna.

*Stadtraum in Theorie und Praxis*¹⁶ (1975) – Rob Krier

In contrast to Sitte’s ideas of artistic urbanism, modernity led to an opening of urban spaces in which attempts were made to place individual buildings as objects in a compositional context. In 1975 Rob Krier described this conceptual abandonment of historically known spaces in the form of streets and squares as the erosion of urban space.¹⁷ As a counterpoint to that loss, various movements formed after the Second World War, which mapped the historic city and its spatial qualities and then established them in research and teaching.

Rob Krier’s explication of urban space theories as well as his spatial mapping are directly related to Sitte and Nolli. In his 1975 book *Stadtraum in Theorie und Praxis. An*

Beispielen der Innenstadt Stuttgart, Krier echoes Sitte by arguing for a rediscovery of urban typologies and their spaces. He sees modernity as bringing about an erosion of urban space and charges:

The cause of this loss is familiar to all city dwellers who are aware of their environment and sensitive enough to compare the town planning achievements of the present and the past and who have the strength of character to pronounce sentence on the way things have gone.¹⁸

Stadtraum in Theorie und Praxis is divided into three chapters. After a brief introduction, chapter one of the book, *Typological and Morphological Elements of the Concept of Urban Space*, uses various mappings to examine the aesthetic qualities of spaces. Krier maps all typologies of space such as streets, squares, and the interior and exterior of blocks. He mostly restricts himself to historical examples that he sometimes supplements with freely invented ones.¹⁹ Although Krier states that his collection of urban makes no claim to completeness, one can speak of it as a catalogue given the multitude of examples shown and their systematic classification. While the content of his examination of *square plans* is still very much based on Sitte, he takes the investigation further with his mapping of *large-scale composite plans* as seen in Figure 2.3.

When looking at Krier's mappings one notices how close they are to Sitte's not only in terms of content but also in terms of graphics. Compared with Sitte, however, Krier's mappings are even more reduced. By using uniform and fading hatching, he dispenses completely with the depiction of blocks and houses, which brings the spaces into even sharper focus. Krier underscores his ideological proximity to Sitte in the dedication: "In memory of Camillo Sitte, Written for students of architecture, Dedicated to my brother Leon." Like Sitte, Krier argues for a historical view of the city: "Anyone engaged on research or planning on the subject of 'urban space' will soon find that an almost inexhaustible range of possible forms exists, most clearly in evidence in our historic towns."²⁰ He goes on to accuse architectural theorists and historians of criminally neglecting the spatial component in their approaches to urban architecture.²¹ He tries to make up for this neglect in his second chapter, *The Erosion of Urban Space in 20th-Century Town Planning*, by considering a selection of historical cities and urban plans. Here, he refrains from presenting his own spatial mappings.

In the third chapter, *Reconstructing Devastated Urban Space with Examples from the City Centre of Stuttgart*, Krier gives a detailed summary of Stuttgart's historical urban development before he presents proposals for the reconstruction of destroyed urban areas on the basis of student designs. None of the designs seem to be based on a spatial mapping of the city of Stuttgart. Rather, the proposed designs seem to draw on the collection of spatial typologies and constellations presented in Chapter 1 of Krier (1975).

Krier's attempt to return to the urban spaces of historic cities and use them as the basis for a postmodern, urban living space, as well as his thoughts on the reconstruction of destroyed urban spaces, were further developed and applied in a more moderate way a few years later at the International Building Exhibition Berlin (IBA) from 1979 to 1987.

Around the same time, there was also an intensive examination of the mapping of urban spaces in the United States. Robert Venturi, Denise Scott Brown, and Steven Izenour used

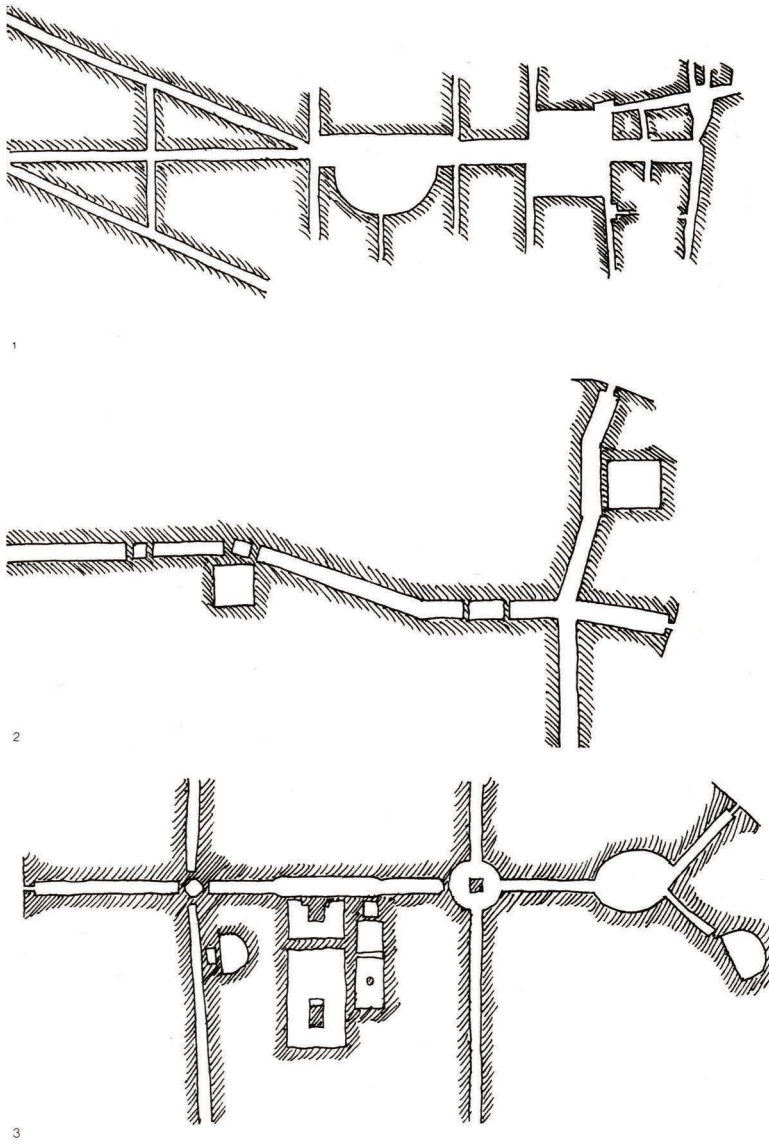


FIGURE 2.3 Rob Krier, mappings, “Large-scale composite plans.” Here: Terracina (Italy), Perge, and Gerasa (Palestine).

Nolli’s method of mapping space and adapted it to the contemporary American city. In the seminar “Learning from Las Vegas, or from Analysis as Design Research” at Yale University, they and their students studied the Upper Strip in Las Vegas using thematic maps, including mappings of unused lots, asphalt surfaces, automobiles, buildings, and also spatial structures.²² Colin Rowe, who wrote the preface to the English version of Krier’s *Urban*

Space, used the figure-ground method in his work at Cornell University's Urban Design Studio, albeit more as a didactic tool for analyzing, interpreting, and comparing different concepts of urban space. In *Collage City*, Rowe and Koetter contrast figure-ground plans of different urban spaces and plannings, such as the historic city center of Parma as well as Le Corbusier's reconstruction concept for Saint-Dié.²³ They established spatial mapping as a comparative tool by stating

Thus, the one is almost all white, the other almost all black: the one an accumulation of solids in largely unmanipulated void, the other an accumulation of voids in largely unmanipulated solid: and, in both cases, the fundamental ground promotes an entirely different category of figure – in the one object, in the other space.²⁴

Epilogue: Mapping and Designing Space?

Given the selected landmarks, it should be clear that there is a distinct history of spatial mapping within the discipline, defined by its recourse to methodological and illustrative precedents. Within this history, there are diverse lines of development, differences, and similarities between the individual spatial mappings:

Fundamentally, all the mappings share an enormous illustrative and suggestive potential. Despite the strong similarities in content, it is clear that each mapping method differs according to its definition of space.

The presentation of Nolli, Sitte, and Krier's works shows that with each successive recourse to historical precedents, there is also an increased focus on the spaces. This becomes clear, on the one hand, through the sections of urban spaces mapped and, on the other hand, through the increasing reduction of what is represented. While Nolli still shows details such as stairs, obelisks, and monuments, Sitte restricts himself to the essentials, and Krier restricts himself entirely to the spaces and the elements that shape them.

This reduction goes hand in hand with the increasing importance of spatial mapping as illustrative supports for theoretical considerations. Though Nolli made a holistic claim to map all the spaces in the city of Rome, Sitte makes a purely subjective selection "of beautiful old square and city complexes."²⁵ Later on, Krier adds freely invented square layouts to his equally self-selected situations, which results in a general catalogue of spatial typologies.

Within this admittedly abbreviated history, the illustrative character of spatial mapping becomes clear again and again. In terms of spatial conceptions, each of the mappings shown is an excellent means of illustration. Even if illustrating space was not Nolli's primary intention, in mapping selected ground plans he expands the notion of urban space by redefining its boundaries. The ongoing history of the reception of the *Nouva Pianta di Roma* in spatial theory and research confirms this.²⁶ Sitte's comparatively manageable oeuvre not only influenced entire manuals on urban planning²⁷ but also had a direct influence on contemporary urban planning as shown. In the second half of the 20th century, Venturi and Rowe/Koetter, among others, used spatial mapping for the first time as an analytical tool in teaching and research, and Krier catalogued a considerable number of different spatial typologies for students. At this point, Saverio Muratori's typological investigations of cities from contiguous ground plan surveys should also be mentioned. These were continued by Aldo Rossi as part of his visiting professorship at the ETH Zurich from 1972 to 1974.²⁸ The

investigations show a significant correlation between house type and urban morphology – a finding that Nolli already intuited when he integrated the ground plans of significant public buildings in the *Nouova Pianta di Roma*.²⁹

As mentioned at the beginning, spatial mapping is thus ideal for “collecting, processing, storing, and evaluating information.”³⁰ Furthermore, Sitte and Krier in particular showed the possibilities for using mapping methods as the basis of design by publishing their own designs as a result of their research. Although Sitte’s proposal for the redesign of Vienna’s Ringstrasse is at odds with his own statements and Krier’s illustrations of his designs seem somewhat eclectic, they do point to a systematic connection between mapping and design. Collin Rowe and Fred Koetter also investigated whether collage could be used to harness what already existed as a basis for the further development of the city. However, none of the mapmakers presented here consistently used spatial mapping as the basis of design or as a tool within the design process. The consistent use of spatial mapping as a design method could be the next step within the history of spatial mapping.

In summary, we can state that spatial mapping helps us to develop a better understanding of spaces in general but also of specific cities or selected situations. The consideration of those who have already dealt with urban spaces theoretically and in drawing is crucial for two reasons: first, we learn to identify existing spaces and their qualities according to their ideas; second, we can develop spaces with comparable qualities based on this understanding.

Notes

- 1 See, for example, Günzel, S. (ed.). 2010. *Raum. Ein interdisziplinäres Handbuch*. Stuttgart. Weimar: J.B. Metzler.
- 2 See, for example, Denk, A., Schröder, U., and Schützeichel, R. (eds.). 2016. *Architektur. Raum. Theorie. Eine kommentierte Anthologie*. Tübingen, Berlin: Ernst Wasmuth Verlag.
- 3 Many singular considerations of selected maps have been published. Yet only a few of them explicitly address the issue of space and systematically examine the relationships between diverse mappings. See, for example, Lampugnani, V.M. and Schützeichel, R. (eds.). 2017. *Die Stadt als Raumentwurf. Theorien und Projekte im Städtebau seit dem Ende des 19. Jahrhunderts*. Berlin, Munich: Deutscher Kunstverlag.
- 4 Hake, G., Grünreich, D., and Meng, L. (eds.). 1994. *Kartographie. Visualisierung raum-zeitlicher Informationen*. Berlin: De Gruyter, p. 3.
- 5 Lampugnani, V.M. and Schützeichel, R. (eds.). 2017. *Die Stadt als Raumentwurf. Theorien und Projekte im Städtebau seit dem Ende des 19. Jahrhunderts*. Berlin, München: Deutscher Kunstverlag, p. 228.
- 6 Ibid, p. 232.
- 7 English: *The Art of Building Cities: City Building According to Its Artistic Fundamentals*.
- 8 Sitte, C. 1904. *Enteignungsgesetz und Lageplan*. In: Sitte, C. 1904. *Der Städtebau*, 1, p. 1.
- 9 Sitte, C. 1889. *Der Städtebau nach seinen künstlerischen Grundsätzen. Ein Beitrag zur Lösung moderner Fragen der Architektur und Monumentalen Plastik unter besonderer Beziehung auf Wien*. Vienna: Verlag von Carl Graeser, Preface.
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- 11 For example, Karl Henrici’s competition designs for the urban extensions of Dessau (1889) and Munich (1892). See Cassani, L., Rossi, R., Schützeichel, R., and Zangerl, B. 2017. “Überall Wandlung, überall Schluss!” in Lampugnani, V.M. and Schützeichel, R. (eds.). 2017. *Die Stadt als Raumentwurf. Theorien und Projekte im Städtebau seit dem Ende des 19. Jahrhunderts*. Berlin, Munich: Deutscher Kunstverlag, p. 9.
- 12 As professors in Munich and Aachen, Theodor Fischer and Karl Henrici had a great influence on young planners at their universities. See Lampugnani, V.M. and Schützeichel, R. (eds.). 2017. *Die Stadt als Raumentwurf. Theorien und Projekte im Städtebau seit dem Ende des 19. Jahrhunderts*. Berlin, Munich: Deutscher Kunstverlag, p. 12.

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- 18 Ibid, p. 1.
- 19 Ibid, p. 16.
- 20 Ibid, p. 30.
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- 22 Venturi, R., Scott Brown, D., and Izenour, S. 1972. *Learning from Las Vegas*. Cambridge, MA: MIT Press, p. 36.
- 23 Rowe, C. and Koetter, F. 1978. *Collage City*. Cambridge, MA: MIT Press, p. 62.
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- 25 Sitte, C. 1889. *Der Städtebau nach seinen künstlerischen Grundsätzen. Ein Beitrag zur Lösung moderner Fragen der Architektur und Monumentalen Plastik unter besonderer Beziehung auf Wien*. Vienna: Verlag von Carl Graeser, Preface.
- 26 See, for example, Lampugnani, V.M. and Schützeichel, R. (eds.). 2017. *Die Stadt als Raumentwurf. Theorien und Projekte im Städtebau seit dem Ende des 19. Jahrhunderts*. Berlin, Munich: Deutscher Kunstverlag, pp. 226–247.
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3

THE MANY-FACETED NOTION OF SPACE

On the Hypothesis of Mapping and the Observation of Spatial Phenomena

Sarah Maria Schroeter

Prologue: Making an Ansatz

When commencing a mathematical proof by writing “*Ansatz*:...,” one stresses that one begins with an idea or a notion, an informed guess, if you will. In this case, it is an assumption about the general form that the solution to the problem at hand is going to take, for example, an exponential function with a yet-to-be determined amplitude and wavelength. If chosen appropriately, the *ansatz* provides, during the course of the calculation, the exact solution to the problem; in this case, it returns the missing parameters (and is thus verified). The internationally recognized use of the loanword *ansatz* (from *ansetzen* which could roughly be translated as not only *[to] begin or [to] ensue [a project]* but also *[to] estimate*) is particularly revealing. One need not have any prior knowledge of heuristics to understand that at its core, the *ansatz* is a well-informed hypothesis, made on the basis of what we know and understand of the physical system.

The question about hypotheses and the terminology of a method is at the center of this article. Guided by a comparison between the notion of space in mathematics and the concept of space in architecture, we ask: how can we describe the notion of space, and what is the scientific nature of that description? What does our hypothesis consist of in an architectural design process, and in what way is that hypothesis put to the test?

The Manifold Idea of Space: From Mathematical Space to Urban Spaces

The Notion of Space in Mathematics and Physics

The novel *Flatland* by Edwin Abbott is as determinedly rational as it is paradoxically poetic – it is not for nothing that it bears the subtitle “A Romance of Many Dimensions.” Political parody and societal allusions aside, it is a notable thought experiment on the sensations of physical space and dimensionality. In a dream, the Sphere, living in Spaceland, offers advice to an inhabitant of the two-dimensional Flatland:

That Point is a Being like ourselves, but confined to the non-dimensional Gulf. He is himself his own World, his own Universe; of any other than himself he can form no conception; he knows not Length, nor Breadth, nor Height, for he has had no experience of them.¹

The notion of space in mathematics and physics derives first and foremost from a concept of dimensionality that relates to the degrees of freedom f . The aforementioned Point existing in a zero-dimensional space has no degree of freedom whatsoever, $f = 0$. In one dimension, the motion along a line is possible, $f = 1$, whereas in a two-dimensional space the Point could move along two axes, $f = 2$, and so forth.²

René Descartes' hypothesis about the nature of space adhered closely to this mathematical principle of dimensionality. Space was imagined as the abstract form of extensions, a set of placeholders, if you will, created by bodies that extend in three dimensions. Each point in space was to be defined by a set of coordinates, still known as Cartesian coordinates. It was a radical thought at the time, as it allowed to identify a point in space, not in terms of distance and angle (d , α) in relation to the observer – at that time a common concept in navigation – but, in absolute terms, as a point (x , y , z) in space. The idea led to the development of the concept of an absolute space by Isaac Newton, a theory that was then challenged by Gottfried Wilhelm Leibniz. Leibniz argued that space was purely relational, a culmination of relative locations of bodies.³ Their ideas of space coincided with separate notions of time and motion, that were, respectively, either understood as absolute entities or defined only by their relational character.⁴

With the theory of special and general relativity, Albert Einstein advocated the notion of inertial reference systems for which all laws of physics must be the same, *invariant*, and he introduced the concept of curved space-time (combining the three dimensions of space with the one dimension of time). To this day, the “problem” of space and time is not conclusively solved. In particular, the implications of the theory of general relativity, with its suggestion of a curved, continuous space, on the one hand, and the contrasting idea of quantized fields, a notion that stems from quantum physics, on the other, have raised a plethora of stimulating questions.⁵

The Notion of Space in Architecture

Remarkably, the reflection on the concept of motion, that is, the degrees of freedom, and the (conceivable) path of a particle in space and time have been key to finding a theory of space itself. In similar fashion, our understanding of urban space is intertwined with a contemplation of time and action. Seeking the distinction of urban spaces from mathematical space, Otto Friedrich Bollnow highlights the importance of a coordinate origin in the inhabited space, which relates to the idea of the viewpoint of the observer, who becomes the center point of the system.⁶ A similar thought is shared by Georges Perec:

We use our eyes for seeing. Our field of vision reveals a limited space, something vaguely circular, which ends very quickly to left and right, and doesn't extend very far up or down. If we squint, we can manage to see the end of our nose; if we raise our eyes, we can see there's an up, if we lower them, we can see there's a down.⁷

In short, the perception of space in architecture is subject to the (physical) observable just as much as the observer. The *red-blue plan* discussed in other chapters of this publication emphasizes the dialectics of architecturally delimited interior “warm” and exterior “cold” spaces. These are distinguished based, primarily, on the proportion of the surrounding buildings, streets, and fields,⁸ but they also implicitly depend on the insights and outlooks, perspective and vista, context and scale,⁹ and, one might add, are subject to the individual impressions of the observer.

The differentiation or autonomy of the theory of architectonic space from the idea of a physical space has not always been plainly stated. A sentiment famously expressed by Martin Heidegger is:

We have to recognize that the things themselves are the places, and not just belong in a place. In this case we would for a long time be forced to acknowledge a disconcerting fact: The place is not situated in the given space in the sense of a physical-technical space. The latter only unfolds as a result of the prevailing of places in an area.¹⁰

More optimistically, the manifold concepts of space, room, and place in architecture, rather than substituting or competing with physical models, add, figuratively, another dimension to our understanding of space.

On the Description and Classification of Spaces

Whether mathematical, physical, sociological, or urban sciences, all seek to provide a *description* of space that best matches reality and concisely directs our gaze to the aspects relevant to their respective fields (and, just as importantly, sets the stage for further investigations).¹¹

Finding a System and a Language

Descriptions in mathematics rely on statements that can be either true or false – there is no third option. From a set of axioms, theorems are logically derived and proven, and these statements are succinct and precise. As an illustrative example, the infinite set of natural numbers $N = \{1, 2, 3, \dots\}$ is identified using an axiomatic description, the four Peano axioms: first, 1 is a natural number. Second, every natural number n has a successor $n' = n + 1$ that is also a natural number. Third, 1 is not a successor of any natural number. Fourth, every natural number has only a single successor, in short, if $n' = m'$, it follows that $n = m$. These provide a simple and acute description of N that, subsequently, leads to more complex theorems.¹² In an analogous way, in physics, instead of deriving theorems from axioms we develop natural laws from *first principles*, that is, from postulated assumptions.¹³

In contrast, the description of space in architecture and urban design relies on a classification of (dialectic) manifestations of space, that is, a definition of a constituting taxonomy. The choice of categories or types makes or breaks the success of the mapping method. The observables must be selected with validity (and relevance) and should be well-defined (and confined). Innately, natural scientists relate the quantitative character of empirical laws to the scientific integrity of their subject. While beneficial, quantification is not inherently necessary; instead, the aim is a higher systematicity on the level of descriptions, explanations, and contextualization, for example.¹⁴ Put simply, the hypothesis that is scientific derives from more than the sum of its constituting facts:

The scholar should organise and arrange; one constructs science from facts, as one constructs a house from bricks; but a pile of facts is as much a science as a pile of bricks is a house.¹⁵

In many ways, finding a system corresponds to finding a suitable language. In the case of the physical space, mathematics is the language with which the relevant phenomena are articulated. In a description of architectonic and urban spaces, meanwhile, one defines a taxonomy, a vocabulary of classifying terms, parameters and variables, categories and sub-categories, and synonyms and antonyms, which set the stage for an analysis of the spatiality of the city. Depending on the focus, the language may differ, but it may also be more or less accurate in its expression of the reality or varyingly precise.

On the Observation of Phenomena

Clearly, the mapping of urban spaces is not defined by or limited to an objectifiable sentential logic. The perception of architectonic spaces is a complex result of quantifiable and non-quantifiable parameters sometimes subject to the perception of the individual.¹⁶ From this complexity there follows a certain lack of conceptual clarity. Sociocultural aspects can be quantified using statistical data; other qualitative aspects can to a certain extent be quantified by finding universal definitions. However, there is an arbitrariness to these definitions that cannot entirely be eliminated. The pivotal question is: is the variable we define *valid* in that it describes the substantial manifestations of space?

The private detective at the center of Sir Arthur Conan Doyle's *Sherlock Holmes* stories regularly expresses his frustration with his companion Dr. Watson, "you *see*, but you do not *observe*." It is a fine yet obvious distinction that points the finger at a critical aspect of the mapping of spaces. In assigning values, classifying categories of space, we perform an analysis on our surroundings, which inherently implies an interpretation of its characteristics:

[In] fact the belief that we can start with pure observations alone, without anything in the nature of a theory, is absurd.... Observation is always selective. It needs a chosen object, a task, an interest, a point of view, a problem. And its description presupposes a descriptive language, with property words; it presupposes similarity and classification, which in their turn presuppose interests, points of view, and problems.¹⁷

The hypothesis we make consists in the intrinsic statement about the validity and demarcation of the selected variables. We do not merely *see* (unbiased and without judgment), but we select, interpret, and *observe*. In the case of the red-blue plan, the classification of spaces relies on an observation of *phenomena*. By definition, it draws our attention to certain aspects of our perception of space, in the context of a plethora of unknown parameters, complex relationships, and correlations.

On the Hypothesis and Its Falsification

By (in fact, mathematical) definition, a mapping consists in a functional relationship. In this case, the mapping assigns a term (e.g., warm or cold, red or blue) dependent on the practically observable parameters (e.g., proportion of the street's section). Its empirical, or

phenomenological nature, lies in the fact that it relies on practical observations to form a hypothesis about the spatiality of the city.¹⁸ The hypothesis and the observation go hand in hand, and, in an almost iterative process, the one constantly enhances the other:

The problem “Which comes first, the hypothesis (H) or the observation (O)?” is soluble; as is the problem, “Which comes first, the hen (H) or the egg (O)?” The reply to the latter is, “An earlier kind of egg”; to the former, “An earlier kind of hypothesis.”¹⁹

According to Karl Popper, “the criterion of the scientific status of a theory is its falsifiability, or refutability, or testability.”²⁰ However, due to its elements of subjectivity, the mapping lacks in reproducibility, as there are cases of transition where the subtle distinction between two opposites of spatial manifestations can neither be made unambiguously, nor be proven conclusively. Is it possible, still, in accordance with Popper’s *conjectures and refutations*, to *falsify* a mapping?

The answer is that the theory of *trial and error*, while not applicable to evaluate the truth in the single instance of spatial phenomena (for how could one prove or disprove a definition) might on a higher level be applied to the *method*. By critical revision of the taxonomy, by determining knowledge gaps and improving definitions where they lack in precision or completeness systematicity is increased.

Alternatively, as once suggested by Oswald Mathias Ungers²¹ and contemplated by Jasper Cepl,²² the idea, or topic (*Thema*) of an architectural intervention (resulting from the analysis) may itself constitute the actual hypothesis, which is then subject to confirmation or rebuttal.

The architecture can neither describe nor depict; it has to set itself a theme, it is not provided freely. And this is the engagement, namely the assignment of the topic. And that is a difficult feat, and that is what it is all about. One can make it entirely about this [assignment], by, in the spirit of Karl Popper, equating the idea with the hypothesis. As architect, I see my role in the establishment of ideas and the statement of hypotheses, which might then be refuted, or might not be upheld, as all other factors, of economics, usage etc. arrive on the scene.²³

In both cases, it is not the variable that is falsified, but rather the hypothesis that is formed on the manifestations of architectonic space in general. A mapping allows the depiction of a chosen set of spatial characteristics and can reflect their evolution in time. It augments our understanding about the prevalent context and the consequences of an architectural intervention.

The falsifiable hypothesis then lies in the choice of classification itself. Instead of asking, “Does *this* space really show an interior spatiality?” we might enquire, “Can I *discern* the two qualities of inner and outer spaces in my observations?” Alternatively, “Does the intervention provide the appropriate *idea*, and *how* can I describe its underlying qualities or that idea more systematically?” As previously noted by Cepl,²⁴ whether this is in Popper’s spirit remains to be discussed.

Epilogue: The Objective of Mapping the Medium-sized European City

We use the mapping of spaces as an instrument in the designing process. It is a *Versuch*, an experiment, an effort, a trial. Its result will not be limited to the Boolean return values “true”

or “false.” Rather, the experiment that we conduct is the testing of the validity of the defined language. A critical discussion of our taxonomy enhances our observations and our understanding of the spatiality of the city. A phrase attributed to Johann Wolfgang Goethe is:

The people are put off by the fact that the true things are so simple; they should bear in mind that they will find it hard enough to put it to practical use.²⁵

If viewed as a method of designing, then, above all, the mapping of urban spaces is judged both against the insights gained from the analysis and by its implications for the architectural intervention that finds either acknowledgment or rebuttal. The objective of a mapping of spaces is nothing less than to “decipher a bit of the town.”²⁶ In this broad sense, we make an *ansatz*, an informed assumption about a suitable classification that depicts an architectural dimension of space, heightening our awareness of the spatiality of the city.

Notes

- 1 Edwin Abbott, *Flatland: A Romance of Many Dimensions*. London: Seeley & Co. Reprinted 1998. London: Penguin Books.
- 2 We assume here a single idealized point, reduced to its center of mass. For a system of mass points, there are additional rotational degrees of freedom, again depending on the dimensionality of the space.
- 3 The disagreement between Leibniz and Newton culminated in the well-known *Briefwechsel* (exchange of letters) between Clarke, who was a devoted student of Newton’s, and Leibniz. It discusses their diverging ideas on many other grand topics of physics and philosophy, including the subjects of matter, atomic particles, reason, freedom, and God.
- 4 Not unambiguously, the terms relational and absolute space are sometimes used to describe architectural spaces; most prominently they appear in theories formulated by Henri Lefebvre and Martina Löw, alluding to the idea that space is induced by constructing relations (of abstract ideas, or objects, respectively).
- 5 Unifying concepts such as the theory of loop quantum gravity, for example, suggest that space is made up of quanta of gravity, which, needless to say, has dramatic consequences for our understanding of space, matter, and, indeed, time.
- 6 Bollnow, O. F. 1960. Der erlebte Raum. In *Universitas* 15. H.4. 397–412. As reprinted in: *Architektur. Raum. Theorie. Eine kommentierte Anthologie*, eds. A. Denk, U. Schröder, and R. Schützeichel. Tübingen-Berlin: Ernst Wasmuth Verlag, 2016, pp. 456–470.
- 7 Percey, G. 1974. *Espaces d’Espaces*. Paris: Editions Galilée. English Edition: 2008. *Species of Spaces and Other Pieces*. London: Penguin Group.
- 8 See Schröder, U. 2005. Pardié. *Konzept für eine Stadt nach dem Zeitregime der Moderne*. Köln: Verlag der Buchhandlung Walther König.
- 9 On the relevance of proportion and scale, see, for example, Tschanz, M. 2018. Proportion! Und Maßstab! In: *Proportionen und Wahrnehmung in Architektur und Städtebau*, eds. A. Gerber, T. Joanelly, and O. A. Franck. pp. 35–45. Berlin: Reimer Verlag.
- 10 Translation by the author. The original quotation reads:
Wir müssen erkennen, daß die Dinge selbst die Orte sind und nicht nur an einen Ort gehören. In diesem Falle wären wir auf lange Zeit hinaus genötigt, einen befremdenden Sachverhalt hinzunehmen: Der Ort befindet sich nicht im vorgegebenen Raum nach der Art des physikalisch-technischen Raumes. Dieser entfaltet sich erst aus dem Walten von Orten einer Gegend.
In: Heidegger, M. 1969. *Die Kunst und der Raum / L’art et l’espace*. St. Gallen: Erker-Verlag
- 11 In physics, the motivation is a unifying theory or law that explains reality as well as predicts hitherto unknown facts; in architecture, the objective is a (hermeneutic) understanding of the spatiality of the city as a starting point for a hypothesis of an architectural intervention.
- 12 Remarkably, the second axiom for natural numbers leads to a principle called complete induction, which is highly useful in the proving of quite a number of theorems.

- 13 See Einstein, A. 1953. *Mein Weltbild*, ed. C. Seelig. Zürich: Europa Verlag AG.
- 14 The point about quantifiability and systematicity and its dimensions is more adeptly made by Hoyningen-Huene, P. 2008. "Systematicity: The Nature of Science." *Philosophia*, 36(2): 167–180. <https://link.springer.com/article/10.1007/s11406-007-9100-x>
- 15 Translation by the author, from the German translation *Der Gelehrte soll anordnen; man stellt die Wissenschaft aus Tatsachen her, wie man ein Haus aus Steinen baut; aber eine Anhäufung von Tatsachen ist so wenig eine Wissenschaft, wie ein Steinhäufen ein Haus ist.*" In: Poincaré, H. 1914. *Wissenschaft und Hypothese*. Deutsch von F. und L. Lindemann. Leipzig: B.G. Teubner.
- 16 The philosophical question of truth, knowledge, and cognizance is an altogether different matter which we cannot address in the context of this brief chapter.
- 17 Popper, K. R. 1963. *Conjectures and Refutations. The Growth of Scientific Knowledge*. London: Routledge & Kegan Paul plc, reprinted 1991 by Routledge.
- 18 Still, the mapping is also not merely a collection, *Sammlung*, of phenomena, but rather the descriptive representation of urban spatial manifestations (and the one phenomenon of interior or exterior spatiality, for example).
- 19 See Popper 1963.
- 20 Ibid.
- 21 Pehnt, W., G. Behnisch, and O. M. Ungers. 1981. Den Ort suchen, den Ort setzen. In: *Bauwelt*, 19: 774–779. <https://www.bauwelt.de/dl/744117/1981-19-0774-0779.pdf>
- 22 See Cepl, J. 2018. Architectural Design in the Interplay between Conjectures and Refutations: Karl Popper and the Architects. In: *Architettura e saperi | Architecture and Knowledge*, eds. S. Hildebrand, D. Mondini, and R. Grignolo, with B. Pedretti. Mendrisio: Mendrisio Academy Press, pp. 207–215.
- 23 Translation by the author, original wording:
- [...] die Architektur kann weder beschreiben noch abbilden, sie muß sich das Thema setzen, sie kriegt es nicht umsonst geliefert. Und das ist die Auseinandersetzung, die Setzung des Themas. Und die ist schwierig, und darum geht es eigentlich bei der Sache. Sie können sie auch damit bezeichnen, indem Sie wie Karl Popper beispielsweise die Idee gleichsetzen mit einer Hypothese. Ich sehe meine Aufgabe als Architekt darin, Ideen zu setzen und Hypothesen aufzustellen, die dann widerlegt werden können, die unter Umständen auch als Idee sich nicht durchhalten lassen, wenn all die anderen Faktoren der Wirtschaft, der Benutzung usw. dazukommen
- (See Pehnt 1981)
- 24 See note 22.
- 25 English translation by the author, the original quotation reads as follows: "Die Menschen verdrießt's daß das Wahre so einfach ist sie sollten bedenken, daß sie noch Mühe genug haben, es praktisch zu ihrem Nutzen anzuwenden." In: Goethe, J. W. 1907. *Maximen und Reflexionen. Aphorismen und Aufzeichnungen. Nach den Handschriften des Goethe- und Schiller-Archivs*, ed. M. Hecker, Weimar: Verlag der Goethe-Gesellschaft.
- 26 See Perc 1974.

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4

STADTRAUMGESTALTUNGEN

On Perceiving and Reading Urban Spaces

Timo Steinmann

The following text explores the origins and development of the class *Grundlagen des Entwerfens – Stadtraumgestaltungen, Kartierung städtischer Räume*,¹ which has been taught over the past ten years in the Department of Spatial Design under the direction of Professor Uwe Schröder at RWTH Aachen University, as well as the findings it offered for the department's understanding of spatial research and design. During this period, the seminar was an integral part of the basic requirements for the bachelor's program, so that all students who started their studies during this period familiarized themselves with its contents and came to grips with the phenomenological observation of architectural space. As the name suggests, the format was always intended as a complementary exercise to architectural design, providing not only insights into the piece of city under consideration but also basic insights into the rules of space formation that underlie a city. While the first design exercises in the architecture program started from the dimensions of one's own body, this class considered space on the scale of the city.² In addition to inputs from Professor Schröder, the teaching format was conceived and developed by the department's academic staff and assistants, including the author.

Both the methodical and didactic approach, and the tools used in the seminar have evolved over time. From the very beginning, the students' task was to grapple with urban architectural space: to measure it, to examine its qualities, and to map it. The engagement with urban spaces was based on the view that all architectural spaces are interior spaces,³ that they possess interior spatial qualities, regardless of whether they are enclosed on all sides, covered, or uncovered. Their interior spatiality arises because they are defined by clear boundaries, and as such their proportions can be read and experienced. By contrast, landscape spaces are exterior spaces. On the basis of this phenomenological definition of architectural space, the students were to analyze a small section of the city of Aachen and record it in plan drawings. Here, the act of drawing itself constituted an essential component of spatial analysis, in addition to actually walking through the assigned urban space. The semantics of drawing and modeling as a language were expanded and sharpened over the years.

Likewise, students had to build spatial models that represented urban space as a plastic volume. The approach to model building, the degree of abstraction, and the focus of the content to be represented were also repeatedly changed over the years and tested in experimental trials – with clear failures and successes.

Modest Beginnings

When the seminar was conducted with students for the first time in 2010, a four-part lecture series was still scheduled at the beginning of the exercise, which was intended to provide the students with the theoretical basis for working on the task. After that, the students had to analyze the area assigned to them in groups of 10–15 people and capture it in drawings. Ground plans (horizontal sections) had to be made as planar drawings at a scale of 1:500, with a focus on publicly accessible space, as a classic counterpart to private space.⁴ To this end, non-accessible space – whether a solid wall, courtyard, room, or otherwise – was shown in black hatching, while public space remained white. Giovanni Battista Nolli's large map of Rome served as inspiration here,⁵ since unlike figure-ground diagrams it does not distinguish between built and unbuilt space, but between accessible and inaccessible, public and private space. His approach to mapping space was also part of the lecture. In addition, passive boundaries (curbs, parcel boundaries, planted areas) were depicted with black lines. Using the same scale of the ground plan, the students had to create vertical sections in which the street profile and the vertical extent of public space could be read. Furthermore, mass models were built at a scale of 1:1000, in which publicly accessible space was represented as a solid volume made of red MDF. Here, accessible street, square, and courtyard spaces were represented, as well as spaces within buildings, such as stores, gateways, churches, and other public spaces. The heights of the room volumes were based on their actual heights, while the heights of uncovered spaces were based on the height of the surrounding eaves. The base plates for the models mapped the site's topographical slope, and the red spatial mass had to be adjusted to the terrain (Figure 4.1).



FIGURE 4.1 Spatial mass model of the city center of Aachen, original scale 1:1000, red MDF and cardboard, built by students of the class *Grundlagen des Entwerfens – Stadtraumgestaltungen, Kartierung städtischer Räume* in 2015.

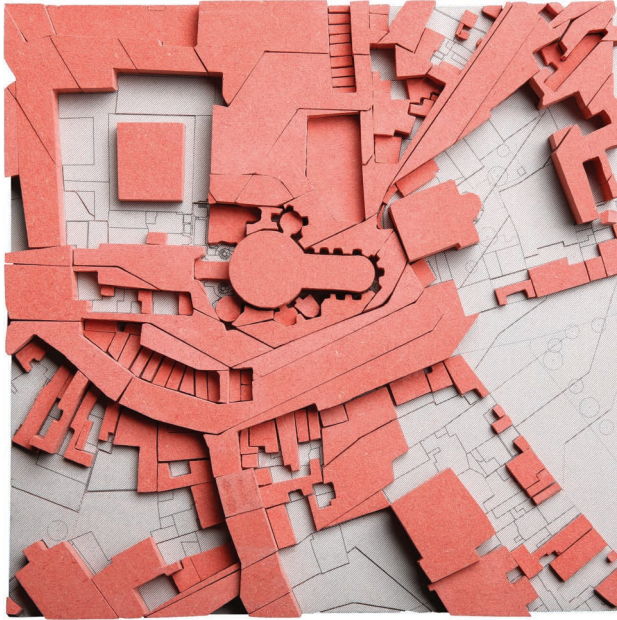


FIGURE 4.2 Spatial mass model of the Aachen cathedral and surroundings, original scale 1:1000, red MDF and cardboard, built by students of the class *Grundlagen des Entwerfens – Stadtraumgestaltungen, Kartierung städtischer Räume* in 2015.

In the next two years, other districts in the city of Aachen were studied and processed into drawings and models. Furthermore, students then had to photographically document the significant urban spaces in each area. In the second year, these photographs were then collaged with the street sections to create perspectival sections that were true to scale at the intersection of street section and photograph. The construction of the models was refined in the sense that spatial masses were no longer used to represent all of the public or publicly accessible space in an area, but only those spaces that appeared to be architecturally bound and thus possessed the interior spatial qualities distinctive of architectural space. In the fourth year, the spaces in the drawings were represented in red, like the model (Figure 4.2).

The Changes after Pardié

In the middle of seminar's lifecycle, a decisive step was taken that effected a radical change in the format of teaching and methodology. The reason for this was the publication *Pardié* and the considerations on spatial mapping presented therein.⁶ The publication shows the department's submission to the competition *Planetary Urbanism – The Transformative Power of Cities* from 2015, which was held in connection with the UN-Habitat III Conference 2016 and sponsored by the journal *Arch+*.

This was accompanied by the development of a mapping tool known as the *red-blue plan*, which developed out of the insights gained from the “Fundamentals of Design” classes as

well as the simultaneous spatial research done in the Department of Spatial Design. The red-blue plan provided the method of cartographic representation that students used for spatial mapping within the framework of the seminar from then on. In this process, the semantics of the mapping tool became more precisely articulated. First, phenomenological distinctions about the qualities of space were made, much like before. But now, interior space, which was defined earlier as architecturally bound space, is represented in red; exterior space, meaning unbound landscape-like space, is represented in blue.⁷ Thus, in contrast to the figure-ground method, the red-blue plan does not represent the structure of cities or construction developments in a morphological sense; rather, it makes statements about the appearance and composition of spaces. Another new feature was that as the scale of the plan grew larger, more levels of observation were added to its legend. Thus in *Pardié*, distinctions were made for the first time between the scales of “country and city,” “city,” “city and house,” “house and room,” and “wall and opening.”⁸ Here, finer differentiations appear successively. First, red and blue are differentiated into dark and light. Dark red represents spaces enclosed on all sides by active boundaries, while light red represents only partially enclosed, bounded spaces. Light and dark blue indicate urban and landscape-related exterior spaces, that is, outdoor spaces that are subordinate to the landscape or urban space. At the same time, boundaries are distinguished by their line color. Active boundaries are drawn in white, and passive boundaries in black.

The final differentiation maps what the spaces are dedicated to, which was already a mapping subject in the seminar. A distinction is made between “inclusive,” publicly accessible spaces that are part of the urban community and “exclusive” private spaces. Inclusive dedication is emphasized with black-line hatching and, exclusive, with white-line hatching.⁹ This expansion of the legend allowed students to produce three plan drawings at different scales in subsequent years (Figure 4.3).

Thus, each group of students drew a plan on the scale level of the city, which showed the urban situation of the entire quarter under consideration, and also a plan at the scale level of city and house, which showed the connections between streets and squares and spaces within buildings or blocks. Likewise, they pointed out the public or nonpublic dedication according to the legend. Finally, students had to draw a plan of the house. Here, the focus was on the spatial consideration of threshold spaces, such as house entrances, church portals, gateways, and the like – spaces that mediate between different spaces, dedications, and qualities. To this end, students selected a suitable situation located in their assigned area (Figure 4.4).

At the same time as the red-blue plan was implemented as a mapping tool, the course sequence and format were also changed. The lecture was replaced by city walks, which were conducted by the research assistants together with students. Groups of 20 students, a student assistant, and a research assistant wandered through and explored the city areas on several dates. The inspiration here came from the analytical walks that Lucius Burckhardt had been conducting with students at the Gesamthochschule Kassel, now the University of Kassel, since 1976.

Unlike the *strollology* developed by Lucius Burckhardt,¹⁰ however, the aim of the city walks through Aachen was not to track down specific landscape or urban images, or to specify them, but to examine urban space according to the criteria mentioned above.



FIGURE 4.3 Red-blue plan of the Aachen cathedral and surroundings, original scale 1:666, drawn by students of the class *Grundlagen des Entwerfens – Stadtraumgestaltungen, Kartierung städtischer Räume* in 2019.



FIGURE 4.4 Spatial mass model of a house entrance, original scale 1:10, plaster, built by students of the class *Grundlagen des Entwerfens – Stadtraumgestaltungen, Kartierung städtischer Räume* in 2019.

Why Is the City Beautiful?

The stroll itself was more a methodical means to an end than an actual goal. Although the cinematographic images¹¹ that become fixed in the stroller's memory as a synthesis of various image sequences were an important component here as well, it was not a matter of generating impressions about the city and landscape. Thus, the focus was not primarily on the aesthetics of space or the environment,¹² as in strollology, but on the qualities inherent to architectural space. The student strollers were not meant to emulate the metropolitan stereotype of the flâneur who Walter Benjamin described as an urban drifter who observes his environment but perceives it with a certain indifference and wanders aimlessly.¹³ Rather, their role was more along the lines of the flâneur as detective,¹⁴ who enters urban spaces with a watchful eye and screens them. As with Burckhardt, the point was learning how to see,¹⁵ to sharpen the students' awareness of how they observe architecturally formed spaces so that they can understand the structure of the city in the first place. In addition to the plan drawings and models, the walk provided the opportunity to view different spatial phenomena in the city not in isolation, but as a coherent organizational system, as described by Christopher Alexander.¹⁶

In the context of the course in Aachen, the walks were not so much long wanderings but a mixture of excursion and fieldwork, open air lectures, and group discussions. Longer stops were planned at significant urban spatial situations. On the one hand, these served to convey theoretical content, to point out spatial phenomena and spatial typologies, and, on the other hand, they were also necessary for students to become aware of spatial proportions and their effects. At these stations, the students also tried to approach everyday, seemingly banal urban situations from a space-theoretical or phenomenological point of view. Here, it became clear how important it is to agree on a common vocabulary for architectural space, on a compatible concept of space. The basis here was the concept of space explained in the beginning: that space appears as architectural space when its proportions are readable as such, when it is defined by clear boundaries. The space must be closed in some sense.¹⁷ But the space of an urban square, for example, does not just clearly end at the active boundaries that the surrounding buildings give it, which make its existence possible in the first place.¹⁸ The square cannot exist in isolation. It connects both to the infrastructural network of urban spaces via branching streets as well as other inclusive spaces on the ground-floor zones of surrounding buildings such as stores. Likewise, the connection of spaces and the spatial experience of observers walking through them is influenced by invaginations and eversions of boundaries. Especially where boundaries dissolve, where walls have openings, the space begins to communicate with the spaces on the other side of the boundary. These openings – whether doors, windows, passageways, or the like – become filters. As thresholds, they reveal themselves as spaces of transition via the depth they create within the wall itself.¹⁹ This dialectical principle of the wall as a space-forming, active boundary, which is at the same time a filter that enables communication between spaces, is due to the fact that boundaries in an architectural sense always form further spaces and connect them at the same time. This is what Hermann Sörgel calls the Janus face of the architectural wall,²⁰ a two-sided space-forming concavity. According to his understanding of space, the distinction between spaces open to the sky and completely enclosed spaces is not decisive. Both the space of the open square and the living space of a home are architectural spaces defined by walls, which connect and communicate with each other at their boundaries in the form of these walls. In this sense, the connection is not the interconnectivity of independent systems, but rather



FIGURE 4.5 *Katschhof*, central square in the historic center of Aachen, 2021, photo by Philipp Pelzer.

the city forms an interconnected continuum of spaces that encompasses both the interiors and exteriors of buildings. Therefore, it is not possible to speak of urban space in a singular sense but only of plural urban spaces; as Alberti says, the city is like a house and vice versa.²¹ The city forms a coherent structure of interior spaces in the architectural sense (Figure 4.5).

During the walks, the students were to develop this understanding of connected spaces, which have different dedications, qualities, and proportions. Smaller perception exercises were done for this purpose. The students positioned themselves in the middle of the market square in Aachen or the Katschhof, then described and differentiated the space they were in and their perception of it. The same was done in the Domhof and some block courtyards, and likewise, in small alleys, such as the Spitzgässchen at Aachen's Münsterplatz. For the most part, all participants quickly grew aware of the different spatial effects, and in conversation they soon developed the insight that the proportion of the space, its expansion in all directions, had to be decisive for its character and its interior or exterior spatial quality. During walks through the Elisengarten in Aachen – a space that has an urban character but also seems to be an exterior space – the students were able to see that its architectural proportions were based on human measurements and that there was no interior spatial effect where the boundaries of the spaces were too unclear or too far apart.

The goal of these exercises in the *Stadtraumgestaltungen* class – the drawings, the models, and the walks – was to increase the students' awareness of architectural space as aspiring architects. They were to learn from what was already there in order to draw conclusions and pointers for their own design activity. By becoming aware of spatial phenomena and analyzing their interrelationships using the city of Aachen as an example, they were to develop an understanding of the connectivity of the city's spaces as part of their training in the core task



FIGURE 4.6 Nameless alleyway at the fish market in Aachen, 2021, photo by Philipp Pelzer.

of creating spaces.²² They were shown how their own design decisions would be dependent on surrounding spatial situations and circumstances, so that they would be able to fit their spatial designs into the organizational spatial fabric of the city, both as a way of improving it and thinking one step ahead (Figure 4.6).

Based on my own experience of teaching *Stadtraumgestaltungen* for three years and annual walks with students, I can say that the majority of students became noticeably more sensitive to urban space situations as a result of working through the exercises and the excursions into the city. Although walking around and dealing with seemingly familiar spaces seemed banal to many young students at first, most of them quickly became aware that there were more complex interrelationships and design decisions underlying all of them, which can only be reliably made with a sufficient understanding of architectural space. In this respect, a certain watchfulness sets in so that the city is not only seen and read with fresh and alert eyes, but the movement through space also happens more consciously. Consequently, the decisions made in the context of a design become better justified and more (self-)aware.

Notes

- 1 English: Fundamentals of Design – Urban Space Design, Mapping Urban Spaces.
- 2 From the annual assignment booklets for the class *Stadttraumgestaltungen*:

Corresponding to the first-semester exercises in the class Introduction to Design, [...] which start from the measurement of the body, the world, and the experience of the scale of things [...], the assignments in Urban Spatial Designs should lead to the analytical consideration of the collective, social spatial formations in the housing of the city. In doing so, the discovery, indexing, and representation of the city's architectural spatiality should also lead to feedback with the introductory lecture on the foundations of spatial design [...]. Urban Spatial Designs include the survey, mapping, and description of a part of the city (urban field), for example, a street or a square.
- 3 Schröder, U. 2016. Die Wand. Grenze der Architektur – Architektur der Grenze. In: *Der Architekt* 4/16.
- 4 Schroer, M. 2006. *Räume, Orte, Grenzen. Auf dem Weg zu einer Soziologie des Raums*. Frankfurt am Main: Suhrkamp Verlag, p. 232.
- 5 Nolli, G. B. 1748. *Nuova Pianta di Roma*
- 6 Schröder, U. 2015. *Pardié, Konzept für eine Stadt nach dem Zeitregime der Moderne/Concept for a City after the Time Regime of Modernity*. Cologne: Verlag der Buchhandlung Walter König.
- 7 *Ibid.*, p. 8.
- 8 *Ibid.*, p. 13.
- 9 *Ibid.*, p. 14.
- 10 Burckhardt originally referred to it as *Promenadologie* or *Spaziergangswissenschaft* in German.
- 11 Burckhardt, L. 2006. *Warum ist Landschaft schön? Die Spaziergangswissenschaft*. Berlin: Martin Schmitz Verlag, p. 329f.
- 12 *Ibid.*, p. 320.
- 13 Benjamin, W. 1982. Das Passagen-Werk. In: *Walter Benjamin Gesammelte Schriften* vol.1 and vol. 2. Ed. Rolf Tiedemann. Frankfurt am Main: Suhrkamp Verlag, p. 525.
- 14 Paetzold, H. 2012. Phänomenologie der Kultur des Flanierens. *Kunstforum Bd. 218 Der urbane Blick*.
- 15 Burckhardt, L. 2006 *Warum ist Landschaft schön? Die Spaziergangswissenschaft*. Berlin: Martin Schmitz Verlag, p. 301.
- 16 Alexander, C., S. Ishikawa, and M. Silverstein. 1977. *A Pattern Language: Towns, Buildings, Construction*. New York, Oxford: Oxford University Press, p. xiii.
- 17 Sitte, C. 2018. *Der Städtebau nach seinen künstlerischen Grundsätzen*. Reprint Basel: Birkhäuser Verlag GmbH, p. 39 [Original 1909. Vienna: Verlag von Graser & Kie].
- 18 Heidegger, M. Bauen Wohnen Denken. In: *Mensch und Raum, Darmstädter Gespräch* 1951, Ed. Bartning, O. Darmstadt 1952. Neue Darmstädter Verlagsanstalt GmbH, p. 78 f.
- 19 Bollnow, O. F. 1963. *Mensch und Raum*. Stuttgart: W. Kohlhammer GmbH, p. 158.
- 20 Sörgel, H. 1998. *Theorie der Baukunst, I. Architektur-Ästhetik*. Reprint Berlin: Gebr. Mann Verlag, p. 215 [Original 1921, Munich: Piloty & Löhle].
- 21 Alberti, L. B. 1452. *De re aedificatoria*.
- 22 Schröder, U. 2016. Die Wand. Grenze der Architektur – Architektur der Grenze. In: *Der Architekt* 4/16.1.

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- Schroer, M. 2006. *Räume, Orte, Grenzen. Auf dem Weg zu einer Soziologie des Raums*. Frankfurt am Main: Suhrkamp Verlag.
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5

WHERE THE COMPACT AND OPEN CITY MEET

Inner and Outer Spaces on the Periphery of Aachen North

Ilaria Maria Zedda

ArchéA

Among the numerous topics that can be taken as subjects of mapping, that of urban spaces is particularly relevant, since any architecture – even that major work of architecture that is the city in Aldo Rossi's conception¹ – is essentially a composition of spaces. Today, the mapping of the spaces of the city, which aims at knowledge about them with the goal of guiding design interventions, is as necessary as it is complex, given the ambiguity and controversy that have surrounded the concept of space since modernity.² This ambiguity has been growing since the 19th century, when the clear separation between city and countryside, historically marked by city walls, was overcome. From then on, the concepts of *inside* and *outside* became hybrid, to the point that, by the mid-20th century, the clear organization of traditional spaces (and the concept thereof) fell into oblivion in the name of modernity.

The Department of Spatial Design at the *Rheinisch-Westfälische Technische Hochschule* (RWTH) Aachen has focused its research on these issues for more than a decade and developed its own method of mapping spaces: the red-blue plan. First introduced in 2015 with the book *Pardie*,³ the red-blue plan helps visualize the spatial relationships between urban spaces as well as their dedications and the nature of their boundaries. In the last two years, participating in the project ArchéA, which is presented in this volume, offered opportunities for further reflection as well as international exchanges on mapping and mapping methods.

Prior to identifying a suitable area for the second ArchéA design workshop, the RWTH team's research focused, among other things, on studying and mapping spaces in different areas of Aachen using the red-blue plan. This preliminary research, conducted within the cycle of seminars titled *ArchéA – ARCHitectural European medium-sized city Arrangement. Kartierung städtischer Räume*⁴ entailed studying and mapping both the city center and different peripheral areas, providing knowledge of the spatial variety and complexity of Aachen's different neighborhoods. Among the different peripheral areas discussed, the great variety of spatial and morphological solutions in the northeastern periphery, around the ancient Roman axis that is now Jülicher Straße, lent itself especially well to an in-depth analysis of several relevant phases in Aachen's modern development.

The present chapter recounts that academic experience. First, it illustrates the mapping method of the red-blue plan; then, it retraces the main steps in the modern development of the surroundings of Jülicher Straße alongside their main features, considering morphological, spatial, and typological aspects. Moreover, the chapter intends to demonstrate how the in-depth study of the chosen urban fragment, through both figure-ground and red-blue plans ranging from urban to architectural scale, enables a better understanding of morphological and typological issues, as well as an understanding of the *Topos*, of the specificities of the place and its *genius loci*. In this context, the red-blue plan helps to produce comprehensive knowledge of the spaces of the city and can therefore be understood as an important precondition for design.

Red and Blue

Although the concepts of inner space and outer space are considered to be univocally understood – I am in an inner space when I am inside of a building covered and bounded by walls, while I am in outer space when I am outside its built limits⁵ – both concepts will need to be clarified in order to understand the theoretical assumptions underlying the methodology in question. Whereas it is true that being in an outer space means being outside of the building, it is also true that this outer space (outer here meaning uncovered) can be a field at the edge of the village or city as well as a street or a square within the city. Whereas the former case is perceived as an *outer exterior space*, the latter is instead perceived as an *outer inner space*.⁶ In other words, interior spaces are to be understood as architectural spaces as long as they are perceived as such by virtue of their proportions, and regardless of whether they are covered or not. Architectural spaces are, therefore, not only covered rooms but also uncovered urban streets, squares, or courtyards.

Based on these premises, the mapping method of the red-blue plan represents interior architectural spaces in red – be they rooms, streets, courtyards, or squares – defined by architectural boundaries, and exterior spaces perceived as outer fields among architectures, both inside and outside of the city, are represented in blue.⁷

As this chapter will show, the contents conveyed by the red-blue plan depend on the scale of the drawings. On a large scale, only two colors are used, namely red for interior architectural spaces and blue for exterior spaces. On a more detailed scale, two different shades of red and blue respectively indicate the level of enclosure (covered-uncovered) and linkage (urban-rural) of each space. Dark red is used for buildings, when covered and enclosed by walls; light red for uncovered architectural spaces, like courtyards, small squares, or narrow streets; light blue for spaces perceived as urban fields, such as broad roads or big squares, that are still linked to and link other architectures; and, finally, dark blue for landscape fields, which normally mark the borders of the city. Moreover, at this level of detail, the plan begins to communicate further information about the nature of the boundaries between contiguous spaces, as can be seen in Figure 5.3. There are boundaries that actively define different spatialities, such as walls, and boundaries that do it passively instead, that is, structurally rather than physically, such as parcels. Whereas active boundaries mark a perceivable change among contiguous spaces, passive ones mark an invisible but no less significant difference, namely their ownership. In the red-blue plan, white lines indicate active boundaries and black lines indicate passive ones.

Finally, on a more detailed scale, as can be seen in Figure 5.4, two different shaded areas visualize different dedications of spaces, that is, whether these spaces are exclusive or inclusive. Exclusive spaces – those solely for private use – are represented with a white shaded area, and inclusive spaces – those accessible to third parties – are represented with a black shaded area.⁸

Aachen North and Jülicher Straße

Before discussing the use of red-blue plans in the specific case of the area around Jülicher Straße analyzed in the seminar and presented in this chapter, it would be helpful to clarify some historical issues in order to understand its current configuration.

Figure 5.1 shows which position the analyzed area occupies in relation to the city center of Aachen. Within its borders, framed in red in the figure-ground plan, Jülicher Straße corresponds to the diagonal axis that runs from the path of the former outer city wall toward the northeastern city borders.

One of the most outstanding aspects of this axis is its history: it dates back to Roman times,⁹ when it served as a link to the nearby center of Jülich and then Cologne – a role



FIGURE 5.1 Figure-ground plan of Aachen (original scale 1:10.000) where the area around Jülicher Straße is framed in red. Drawing made during the Seminar *ArchéA – ARCHitectural European Medium-sized city Arrangement. Kartierung städtischer Räume* (last edited in Winter Semester 2019/20) Original digital source: © OpenStreetMap contributors (CC BY-SA 2.0 www.openstreetmap.org/copyright)

that it maintained throughout the Middle Ages and early modern times. Especially from the 19th century onwards, its surroundings underwent major changes, turning into an industrial settlement.

The earliest industrial developments, which made Aachen one of Germany's leading industrial cities in the first half of the century,¹⁰ were promoted during the years of Napoleonic rule¹¹ and significantly changed the surroundings of Jülicher Straße in the first half of the century. More remarkable construction initiatives followed from then on, beginning with the blocks in Rehmviertel, which extended this part of Aachen beyond the former *Kölntor* (gate of Cologne). The blocks in Rehmviertel, built from 1860 onwards, are defined by two parallel streets and frame a central, regular rectangular square, thus offering an example of classicist planning in the *Gründerzeit*.¹²

By the time the Rehmviertel was completed in 1910, several construction initiatives had been undertaken, including the realization of the new freight station Aachen North in 1875, which directly overlooked Jülicher Straße. Thanks to the favorable location and the presence of the new station, several industries were established in this area in the following years, thus making it necessary to provide the district with enough houses for the working class. Among these housing complexes are two blocks delimiting Joseph-von-Görres Straße, dating back to the 1920s – remarkable examples of reform architecture in Aachen. Reform architectures, built in several European cities at that time, were conceived mainly for workers in the nearby industries and can be understood as a first attempt to remedy the shortcomings of the 19th-century block without renouncing the typology, namely the organization of its buildings around a courtyard separated from the street.

Figure 5.2 refers to the development of the surroundings of Jülicher Straße between 1910 and 1978. There, one can see that the most intense construction activities occurred from the 1950s onwards. Whereas the earliest efforts after Second World War concentrated on repairing the damages the district suffered (especially in its southern part close to the Heinrichsallee), later planning initiatives concentrated on urban expansion and infrastructural improvement. The construction of Europaplatz in the late 1950s (the big traffic circle that can be seen at the bottom of Figure 5.3) completely changed the role of this part of the city, turning it into the triumphal modern entrance to Aachen from the motorway to Cologne. The district was thus transformed, within little more than a century, from countryside to early industrial neighborhood and, finally, to important industrial and infrastructural pole.



FIGURE 5.2 Development of the surroundings of Jülicher Straße between 1910 and 1978. Figure-ground plans from: Curdes, G. 1999. *Die Entwicklung des Aachener Stadtraumes: der Einfluß von Leitbildern und Innovationen auf die Form der Stadt*. Dortmund: Dortmunder Vertrieb für Bau- und Planungsliteratur, pp. 144–145. © Gerhard Curdes.

This part of Aachen is exemplary of modern peripheral expansion in medium-sized European cities, where architectures dating from different historical phases coexist, and whose boundaries – unlike those of metropolitan suburbs that seamlessly incorporate neighboring centers – directly meet and melt with the surrounding countryside.

From Red to Blue: A Path along Jülicher Straße

Figure 5.3 was drawn during the seminar *ArchéA* and maps the urban spaces around Jülicher Straße in their current configuration using the method of the red-blue plan. At this scale (plan segment *Stadt*, or city), the red city of the inner, architectural spaces, which

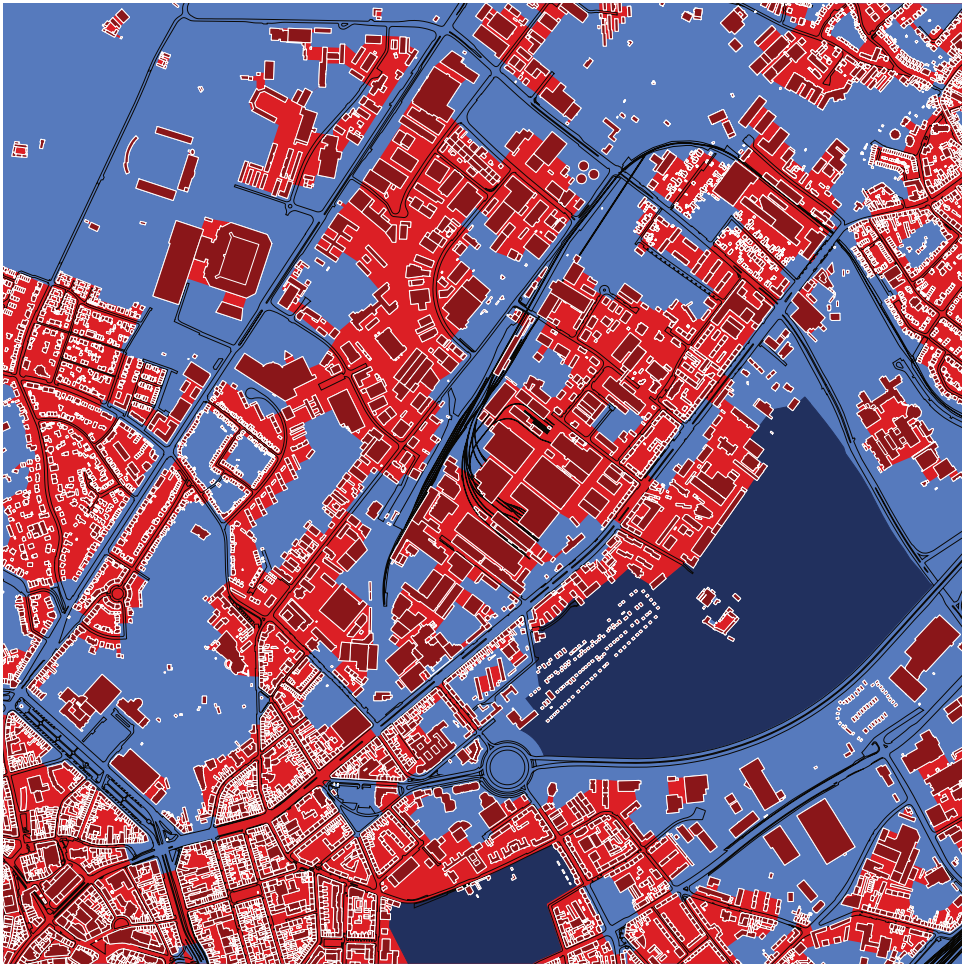


FIGURE 5.3 Red-blue plan of the area around Jülicher Straße, plan segment *Stadt/City* (original scale 1:5000). Drawing made by the students of the Seminar *ArchéA – ARCHitectural European Medium-sized city Arrangement. Kartierung städtischer Räume*, Winter Semester 2019/20 (Authors: Betsa A., Lee K.-M., Liao Y., Schumacher F., Scurtu T.) and further edited by the author (2021).

corresponds to the urban blocks closest to the former city wall, gradually makes room for a mixture of red and blue, where architectural spaces (red) mix with urban fields (light blue) and landscape fields (dark blue). A first important break in the continuity of the (red) historical city can be seen at the point where Jülicher Straße branches off to the southwest and merges with Heinrichsallee, intersecting with the path of the ancient outer city wall. As one moves northeast, interruptions in the continuity of red come with increasing frequency, until the point where red is the exception in a dominant blue, where spaces destined for infrastructures and huge industrial parking lots prevail over architectural spaces.

Given the complexity of current urban situations, it is necessary to think about what could be the most appropriate solution for creating an adequate balance of the compact city and the open city, of red and blue, of interior and exterior spaces. In this effort, it may be useful to deepen the study of those parts of the existing urban fabric where the encounter between these two paradigms has occurred spontaneously, in order to reflect on the critical issues as well as the potential of these scenarios. One could even rely on these encounters to develop suggestions for the current practice of designing urban spaces.

Along Jülicher Straße, this spontaneous encounter can be identified in the situation at the corner of Jülicher- and Joseph-von-Görres Straße. As a result, this specific area was chosen for further investigations at architectural scale during the seminar (plan segment *Stadt und Haus*, or city and house). Within the boundaries of this plan (Figure 5.4), which correspond to Jülicher Straße to the north and Europaplatz to the south, two open blocks face the opposite sides of Joseph-von-Görres Straße. In both of these blocks, the front of Jülicher Straße is lined with *Gründerzeit* architectures, which can be ascribed to the typology of the *Dreifensterhaus* (three-windowed house) typical of the North Rhine-Westphalia region.¹³ These are normally on three or four levels and can be recognized by their façades with regular axes and side entrances. In this case, the buildings on the left of the plan segment (Figure 5.4b) are variants of the type – one of which has, for example, four windows instead of three and an equal number of axes in the facade. They have commercial facilities on the ground floor and buildings both on the side of and inside the private courtyard. Behind these regular façades, the courtyards of the houses are relatively small and for private use.

The architectures shown in Figure 5.4c that face Joseph-von-Görres-Straße are markedly different. These are the two examples of reform blocks mentioned in the previous section, whose uniform fronts open in two big passages facing the public street, thus allowing access to the wide, collective interior of the block. This openness is quite typical for reform blocks, where the inner space of the courtyard is left mostly empty and communication between courtyard and street was not avoided but rather encouraged. However, in both reform blocks on Joseph-von-Görres-Straße the openness is somehow excessive. Indeed, their built perimeter remained incomplete and their southern parts are overly open to the outer public space. The interior of the block, traditionally an inner, architectural space, mixes with outer urban fields. Consequently, their courtyards are mostly blue. In addition to the unclear nature of these blocks' boundaries, this openness made it possible for solitary buildings to be built inside of their courtyards, such as the *Zeilenbauten* (line buildings) built after the Second World War in the courtyard eastern of Joseph-von-Görres Straße (Figure 5.4d). This, in turn, only increases the current confusion about boundaries, destinations, and clearly recognizable typologies.

The plan segment *city and house* conveys information on the spatiality of streets and courtyards. The deepening of its legend and the use of different shaded areas also let it show more typological issues, such as the distribution of accesses, organization of the rooms,

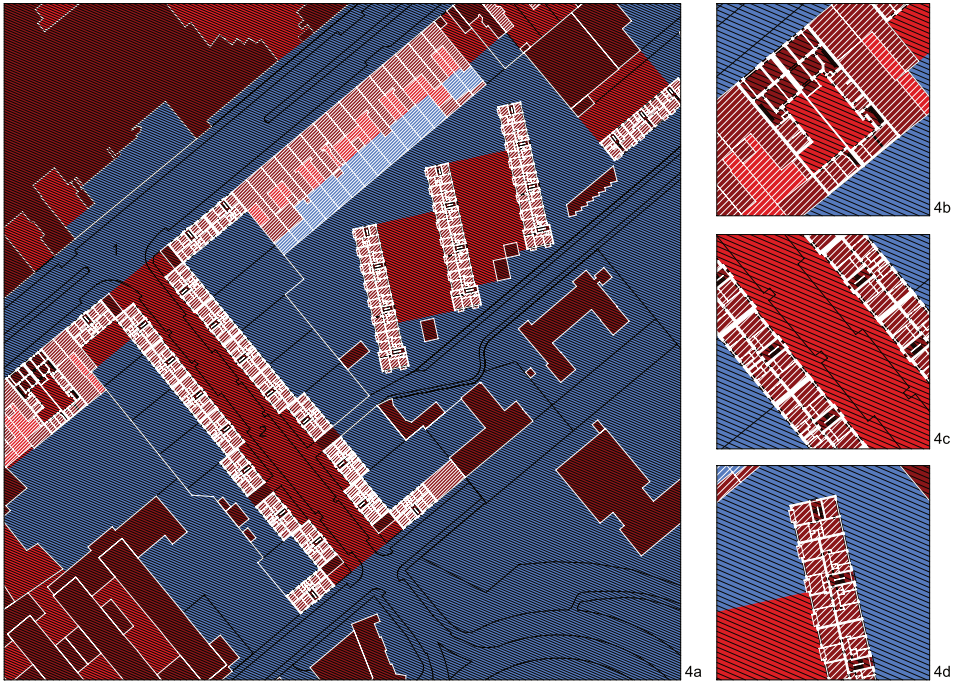


FIGURE 5.4 a–d: (Clockwise, starting from figure 4a on the left): Red-blue plan of Jülicher Straße (marked with “1” in the figure), corner with Joseph-von-Görres Straße (marked with “2” in the figure): plan segment *Stadt und Haus/City and house* (original scale 1:333). Alongside the spatial differences marked in the plan by the different shades of red and blue and by black and white lines, as in plan segment *Stadt*, this plan also provides information on the dedication of spaces (inclusive-exclusive) through different shaded areas (black-white). On the right side of the plan segment (Figure 4a) are three different zooms within the plan (Figures 4b–4d). From top to bottom: houses of the *Gründerzeit* (built by the end of the 19th century), houses in the reform blocks facing Joseph-von-Görres Straße (built in the 1920s), and apartments in one of the three *Zeilenbauten* built (1950s) inside the courtyard of the eastern reform block, close to Europaplatz. Drawing made by the students of the Seminar *ArchéA – ARCHitectural European Medium-sized city Arrangement. Kartierung städtischer Räume*, Winter Semester 2019/20 (Authors: Lee K.-M., Schumacher F., Scurtu, T.) and further edited by the author (2021). Redrawn after: *Planmaterial der Bauaktenkammer Aachen*.

nature of the boundaries, and dedication of the different spaces. In other words, the red-blue plan not only visualizes the spatial relations between covered and uncovered architectural spaces but also helps us understand how these spaces are used, how they relate to one another, and how they communicate with the exterior urban fields and unbound landscapes. It thus visualizes spatial organization, relationships, boundaries, and dedications.

Streets without Architecture

Due to its limited extension, the plan segment *city and house*, previously described, is not sufficient to summarize the great variety and complexity of spatial situations that can be

encountered within the entire area around Jülicher Straße. Nonetheless, even from this relatively small fragment, it is possible to deduce some spatial problems that are characteristic of modern urban developments, where streets and squares lose their traditional role as spaces for meeting and exchange and become instead spaces of mere transit and movement. This legacy of the modern paradigm of the car-friendly city is lamented by the German architect and architectural theorist Fritz Neumeyer. In this respect, he observes how these spatial changes have profoundly affected the historical relation between the buildings and the street, withdrawing the former from the latter.¹⁴ Neumeyer argues that the result of this condition “*is a cityscape of streets without architecture,*” further remarking that the modern city “*transforms the city of closed squares into the city of open crossroads and green strips, in which buildings, isolated from each other, remain passive objects in the background.*”¹⁵

Given the dissolution of the historical boundaries of the street and the presence of architectural objects, there is a general confusion about what is public and what is private. Fences are needed to delimit the latter from the former, performing the erstwhile duty of walls. In this ambiguous state of things, the modern city and its floating space mix with (and prevail over) the traditional one and its architectural spaces.

“*Everything interior ... becomes exterior,*” writes the German architect Uwe Schröder about these spatial problems of the “open” city of the Modern, where – as he further remarks – “*linkages between, boundaries, and in particular dedication of specific spaces are now left undefined.*”¹⁶

The lack of clear boundaries and dedications, lamented by Schröder, combined with the present condition of many “*streets without architecture,*” criticized by Neumeyer, generates great confusion and makes it impossible to recognize oneself in any of these spaces. This is the current condition of many European peripheries, and those of Aachen are no exception.

In the area around Jülicher Straße, the prevalence of exclusive spaces over inclusive ones, as well as the prevalence of exterior spaces over interior ones, increases as one moves toward the periphery, where industries with their huge parking lots prevail over residences. Furthermore, despite the recent conversion of some of these industrial structures into places for cultural life and the community,¹⁷ this part of the city still lacks adequate inclusive open spaces for meeting and gathering.

What underlies these problems is a lack of proper balance between exterior and interior spaces, which is due to the lack of an overarching plan for the area’s urban development. For the same reasons, the district lacks high-quality public spaces, which are the basis of urbanity as argued by the Italian architect Antonio Monestiroli in his lecture *L’arte di costruire le città* (The Art of Building Cities). According to him, such spaces are indispensable for enabling citizens’ identification with their city, as well as meeting and socialization, much like the squares in historical cities.¹⁸

The spatial problems of Jülicher Straße are the spatial problems of many other European peripheries, which the German architect and urban planner Thomas Sieverts describes as *cities without cities* – or cities “*in between,*” if one tries to translate the German term *Zwischenstadt* literally¹⁹ – which are “*neither city nor landscape,*”²⁰ in a constant process of growth and change.

As proved by this brief final excursus, mapping urban spaces with red-blue plans enables a critical analysis of the different spaces of the city, highlighting issues that ought to be solved with targeted design interventions. Obviously, it is not a question of re-proposing the spatiality of the traditional city in these contemporary peripheries. It is rather a matter of developing spatial solutions appropriate to them, that do not ignore but instead take the modern city into account and involve it in a new system of spatial relations, where buildings

are not only *nebeneinander* (next to each other), but again *miteinander* (with each other),²¹ where both interior and exterior urban spaces acquire fine contours again, where nature and architecture don't just randomly mix but clearly relate and where streets are given back their architectures.

Notes

- 1 Rossi, A. 1966. *L'architettura della città*. Padova: Marsilio [Consulted English translation: Rossi, A. 1982. *The architecture of the city*. Cambridge, MA and London: The MIT Press., 29]
- 2 See contribution in this volume by Schröder, U. 2021. *A Spatial Understanding for Architecture and the City*, 7.
- 3 Schröder, U. 2015. *Pardié. Konzept für eine Stadt nach dem Zeitregime der Moderne/A Concept for a City after the Time Regime of Modernity*. Cologne: Verlag der Buchhandlung Walter König.
- 4 *ArchéA – ARCHitectural European medium-sized city Arrangement. Kartierung städtischer Räume* (Mapping urban spaces): Seminar held in the academic year 2019/2020 at the RWTH Aachen, Department of Spatial Design. Head of the Department: Prof.-Univ. Dipl.-Ing. Uwe Schröder, Lecturer: M.Sc. Ilaria Maria Zedda.
- 5 See contribution in this volume by Schröder, U. 2021: *A Spatial Understanding for Architecture and the City*, 8.
- 6 Schröder, U. 2015. *Pardié*, 9.
- 7 Schröder, U. 2015. *Pardié*, 7–8.
- 8 Schröder, U. 2015. *Pardié*, 13–14.
- 9 On Roman settlements in Aachen's region, see Curdes, G. 1999. *Die Entwicklung des Aachener Stadtraumes: der Einfluß von Leitbildern und Innovationen auf die Form der Stadt*. Dortmund: Dortmunder Vertrieb für Bau- und Planungsliteratur, 11 ff.
- 10 This leading position, however, was short-lived and soon lost by the early 20th century. See Curdes, G. 1999. *Die Entwicklung des Aachener Stadtraumes*, 74–79.
- 11 Napoleonic rule in Aachen lasted from 1792 to 1814.
- 12 The term *Gründerzeit* refers to the period of rapid industrial development in Germany during the second half of the 19th century, especially following the unification of the country in 1871. On *Gründerzeit* developments in Aachen, see Curdes, G. 1999. *Die Entwicklung des Aachener Stadtraumes*, 79–86.
- 13 See Eberstadt, R. 1903. *Rheinische Wohnverhältnisse und ihre Bedeutung für das Wohnungswesen in Deutschland Nebst 17 Grundrissen deutscher Kleinwohnungsgebäude*. Jena: Fischer Verlag, 11–19.
- 14 Neumeyer, F. 2014. Städtischer Raum. Ein architektonisches Phänomen. In: *Stadt der Räume. Interdisziplinäre Überlegungen zu Räumen der Stadt*, ed. Denk A. and Schröder U. Tübingen/ Berlin: Wasmuth, 98.
- 15 Neumeyer, F. 2014. Städtischer Raum. Ein architektonisches Phänomen. In: *Stadt der Räume. Interdisziplinäre Überlegungen zu Räumen der Stadt*, ed. Denk A. and Schröder U. Tübingen/Berlin: Wasmuth, 95–100. Quote translated by the author from p. 98 [“*Ein Stadtbild von Straßen ohne Architektur ist die Folge. Die moderne Stadt verwandelt die Stadt der geschlossenen Plätze in die Stadt der offenen Straßenkreuzungen und Grünstreifen, an denen die Bauten, isoliert voneinander, als passive Objekte im Hintergrund bleiben*”].
- 16 Schröder U. 2015. *Pardié*, 9.
- 17 Among these projects, it is worth mentioning the 1991 conversion of the former umbrella factory *Brauer* on Jülicher Straße into the museum *Ludwig Forum für Internationale Kunst* (Ludwig Forum for International Art), which established an important cultural pole outside of the city's historical perimeter.
- 18 Monestiroli, A. 2008. Lezione V: L'arte di costruire le città. Chapter 5 in: *La metopa e il triglifo*, 4th edition, Roma Bari: Laterza, 65–80.
- 19 Sieverts, T. 2003. *Cities Without Cities. An Interpretation of the Zwischenstadt* (1st English ed.) London: Spoon Press and New York: Routledge [First published in German, 1997. *Zwischenstadt. Zwischen Ort und Welt, Raum und Zeit, Stadt und Land*. Bauwelt Fundamente 118. Braunschweig, Wiesbaden: Vieweg].
- 20 Sieverts, T. 2003. *Cities Without Cities*, 3.

- 21 Sieverts, T. in conversation with Binotto W., Garkisch A., and Jessen A.: *Dezentrale Dichte, Dortmunder Architekturtag 2020*, Call 3. Symposium. June 18, 2020. Available at: <https://www.youtube.com/watch?v=bv8s6c7SeRw> (min. 12:30–12:35, link accessed on January 5, 2021).

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- Sieverts, T. 2003. *Cities Without Cities. An Interpretation of the Zwischenstadt*. [1st English ed.] London: Spoon Press and New York: Routledge [First published in German, 1997. *Zwischenstadt. Zwischen Ort und Welt, Raum und Zeit, Stadt und Land*. Bauwelt Fundamente 118. Braunschweig, Wiesbaden: Vieweg].

6

HERE AND THERE

On the Ambivalence of Transitional Spaces

Franziska Kramer

Boundary Issues¹

Ceal Floyer's work *Bars* from 2015 examines the relationship between the interior and the exterior as shown in Figure 6.1 (a photograph from the art installation in the Esther Schipper gallery in Berlin). The black window bars in powder-coated steel are part of a series of interventions in the rooms of the gallery. The window bars are set up on the inside of the window openings, and the windows remain blocked. The subdivision of the bar seems to refer to the segmentation of the existing cassette windows and creates a seemingly harmonious whole. The ordinariness of the window-bar combination evokes the image of protected single-family houses, prisons, and other exclusive or enclosed places. Floyer questions the visitor's relation to what is commonly understood as public and private or exposed and

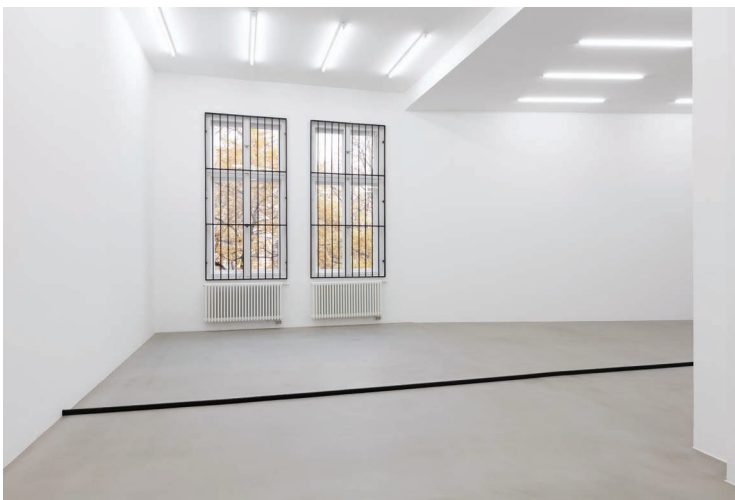


FIGURE 6.1 Ceal Floyer, *Bars*, 2015, Window bars made of powder-coated steel, as part of the Gallery exhibition *Ceal Floyer*, November 6–December 19, 2015 © by Andrea Rossetti.

intimate, by displacing architectural elements and their common connotations. Initially, the specific element of the window bar evokes the image of something that excludes, which then gives rise to the question – who or what is excluded, or included, in this case? As a visitor, one is confronted with one’s own image and visual habits, with one’s own localization in the space or spaces one finds oneself in. Where is the interior and the exterior, and how are these attributes defined today? Ceal Floyer hints to the fact that a boundary always creates a certain ambiguity.

The ambiguity of boundaries was described in 1909 by the German–French ethnologist Arnold van Gennep, who pointed out that a boundary always creates two sides that can or cannot be defined. Gennep connected places and spaces with rituals and performances, especially in terms of the movement of a person or a group of persons for a specific reason. Body and space are therefore strongly connected with each other.² This relationship between the bodily and the spatial has drawn attention in the social sciences, for example, sociologist Markus Schroer’s analysis of spaces, places, and boundaries. He argues that the loss and transformation of boundaries require a new orientation of the body and a new behavior in places.

The ambiguity of boundaries and the increase of spatial relations hinder the localization and adaption of the body, which decreasingly encounters predetermined spatial arrangements. Spaces and bodies are somehow asked to permanently reinvent themselves.³

In today’s city, new forms of boundaries were brought about by technical processes or administrative issues, like new safety regulations, for example.⁴ With these new forms, we might say that the readability of spaces has become a difficult issue in the city, while bodies and spaces have become fully disconnected when it comes to boundaries that are architecturally specified as thresholds. The phenomenon of ambivalent boundaries, such as thresholds, is not a recent one, as the interrelation between private and public has been continuously described as an elusive issue in various disciplines. Nevertheless, it seems that the distinction between interior and exterior spaces continues to be minimized, and as a result our cities might no longer offer the same spatial configurations that once allowed a certain level of appropriation by inhabitants. Walter Benjamin and Asja Lacis offer one example of this interaction in their 1925 essay *Naples*. There, they precisely describe how important the porosity of the city is for the creation of urban life and social interaction. In this case, the urban daily life in the city of Naples, where private and public were clearly defined, has been dissolved.

This chapter aims to retrace an interdisciplinary view of the meaning of boundaries and calls for a reevaluation of the relevance of explicitly defined thresholds in the city. However, it is assumed that the ambivalence of transitional spaces remains a phenomenon that is necessary for creating a “successful” urban life. The uncertainty of urban spaces today might be caused by a continuous turn away from clearly defined thresholds – a process that must be interpreted once again.

White Walls and Black Lines

In 2015, the book *Pardie*⁵ presented the ongoing work on a mapping method developed by the Department of Spatial Design in order to discuss the dedication of urban spaces and reveal the contemporary spatiality of cities. Different characters of spaces were described using the colors red and blue. Determinate and indeterminate spaces are identified, with a focus on

revealing the incongruences within the spatiality of the city, the landscape, and their spaces of intersection. The topic of structural boundaries is differentiated between enclosed and open spaces. As the publication *Pardié* investigates the different characters of spaces, space-forming elements such as the topography, boundaries, and thresholds are also analyzed and specified:

White lines refer to active boundaries. With reference to the architectonic formation of space, this means those boundaries that are substantially responsible for the appearance of interior spaces, for example walls. Black lines indicate “passive” boundaries. In this way, the boundaries are depicted as markings and profiles that do not participate “actively” in the formation of architectural space and instead possess structural features, for example, parcels.⁶

The wall can be seen as a two-sided element of interior urban spaces, which touches both the space of the street and the space of the house. Doors, windows, setbacks, stairs, and niches are connecting spaces between rooms. These elements are represented in red or light red indicating whether they are covered or uncovered. In practice, this mapping method shows the form of ambivalent boundaries. For example, an entrance situation can appear as both red and light red at the same time, which means a threshold can be covered and uncovered, as well as passive and active.⁷

Anyway, we might ask which meaning is determined by boundaries beyond these specifically described situations – between inside and outside – for example, by the invisible lines and administrative boundaries? What kind of boundary determines a space, and what is the role of bodily behaviors within these spaces?

On the one hand the beholder finds himself in the street amidst buildings; on the other, he remains on the street in front of buildings.⁸

The bodily and the spatial are two determinant and interdependent topics necessary to describe the meaning of the city, for example as discussed in the urban planning literature at the beginning of the 20th century and before. We have seen that this relationship can be described through specific elements. The boundary is one of these determinant elements, and its spatial equivalent is the threshold. In the following, the different forms of boundaries and their description in architecture and related disciplines shall be illustrated. The attempt to invoke the different forms of boundaries should not be understood as a rigid categorization but rather be seen as a rediscovery of thematic parameters when it comes to a disciplinary understanding of thresholds.

Forms of Boundaries: Structural, Administrative, Habituated, and Spatial

A boundary produces a real or a supposed difference between two places.... The effect of only a physical or imagined border is the same: it reaffirms the difference.⁹

Boundaries can appear in various forms. The term refers to the fact that a boundary is on the one hand a border, which means a boundary between states, and on the other hand, generally speaking, something that limits and creates two sides. According to *Grimms Wörterbuch* (Grimm’s dictionary), the definition of the German term *Grenze* is a loan word from Slavic

and indicates property and political constructs. We can gather today, under the definition of a boundary, specific descriptions of boundaries, such as *Feldflur*,¹⁰ *Marken*,¹¹ or *Rain*,¹² a small vacant piece of land in between two acres. Historically evolved boundaries, such as the grid of the *centuriatio*, still define the structure and image of city and landscape. Boundaries might emerge here and there, for instance in the form of property boundaries. As an initially invisible line on the ground recorded in the administrative archives of the cities, a boundary appears once the building develops its form in a place, walls are built, and space has been built. The boundary as an intermediate space can create a dialogic relationship between the interior and the exterior. Its two-sided character is described by Arnold van Gennep, who states that the boundary is a border and connection space at the same time.¹³ He outlines the correlation between rituals and the spatialization of a boundary. By introducing the term *liminality*, he describes a boundary as a transitional space between two phases, which is for instance underlined by the functionality of the *Marches*.¹⁴ These described elements can manifest, according to Gennep, a boundary and affect social practices. Following his argumentation, we can say that boundaries can appear as representations of cultural conditions, as narratives, histories, or even performances.

In their 1995 book *Confini del paesaggio umano*, Italian architects and historians Leonardo Benevolo and Benno Albrecht discuss boundaries that appear in the form of fields, town walls, mounds, or districts and thus retrace the history of appropriation of land and territory as well as the transformation of the relationship between city and landscape. Boundaries have an immediate effect, they state. On the one hand, Benevolo and Albrecht retrace the transformation of structures in the city and the landscape. On the other hand, they show how permanently the city and landscape can be determined by forms of cultural, technical, spatial, or administrative boundaries. Based on these different types, one can ask to what extent a boundary can be seen as an ambivalent spatial phenomenon that separates and unites at the same time. First, we can see that there is a certain contradiction underlying the phenomenon of boundaries in the city and the landscape. Second, it appears as a specific phenomenon that is manifested spatially. Benevolo and Albrecht describe how the loss of boundaries goes along with the dissolution of the urban habitat and how the clear allocation of towns and land has been dissolved and a new dualism between towns and land therefore evolved.

Coming back to Gennep and the described impact of boundaries as spaces of ritual,¹⁵ we can see how the relationship between the bodily and the spatial can be described especially well in relation to the architectural appearance of the threshold. According to *Grimms Wörterbuch*, the German *Schwelle* or threshold is first defined as the horizontal foundation of a construction. The origin of the word appears in two forms, whose common root is “svelo-,” which means founding. A threshold is defined as a basic beam, but it could also indicate other specific architectural elements. A freer understanding of the word relates to its transitional aspect, for example as a kind of crossing. This definition describes the permeation of interior and exterior, of private and public. The second aspect of the definition refers to the relationship between the body and the threshold. Referring to the observations of Peter Sloterdijk’s publication *Spheres*, the German architecture critic Michael Mönninger recites this relationship between body, space, and boundaries as follows:

These spaces have in common, that they are organized along the boundary between inside and outside, with us and not with us, own and foreign, inclusion and exclusion, comprehension and incomprehension.¹⁶

Interestingly enough, Mönninger enlarges in his article Genep's descriptions and points toward the matter of proportionality and the relationship between things, whereas for Genep the ritual and the place are initially two independent things, simply connected through a moment of transition, and may thus be limited to time.

In his 1977 book *A Pattern Language*, American architect Christopher Alexander addresses the correlation between body and space as well as between borders and places by precisely outlining the adaption and meaning of architectures as well as places and their threshold situations. Alexander presents a guideline for construction from the urban scale to the detail, mostly illustrated by simple examples based on common experiences in urban life. The described architectural elements – such as steps, doors, balconies, or loggias – can be seen as the concretization of social needs; the city is seen as a permanently transforming place.

One might think that these places of community have disappeared in today's city, but what emerges instead of defined thresholds? Laurent Stalder enlarges the description of thresholds in his *Schwellenatlas* from 2009,¹⁷ which reveals the transformation of threshold-building elements into places of interference. Stalder introduces the controversies surrounding architecture which, on the one hand, has evolved toward open floor plans and spaces without thresholds and, on the other hand, requires new forms of thresholds in the form of technical inventions. The threshold is positioning, he states.

Given the complexity of these multiple levels of meaning, the city appears in the form of a concrete place and in the form of its possible appropriation – so to speak, as the production and the reception of threshold spaces. Boundaries can therefore appear rigid or flexible. Within this ambivalent imaginative framework, the threshold can indeed be described as an including and excluding element of the city.

Thresholds as Specific Places

In continuing the interdisciplinary overview of boundaries, the following categories can be introduced: structural,¹⁸ administrative,¹⁹ habituated,²⁰ and spatial.²¹ These appear in various forms and have a certain impact, which is expressed directly or indirectly in daily life and influences the visual habits of a place's inhabitants.

In the matter of thresholds, the legibility, specificity, and transparency of spaces and their associated architectural elements seem to be crucial. Places of transition can become abodes, for example. The threshold needs to be seen as a form of architecture in relation to its time. The threshold always remains a being with a temporary character; its ephemerality is a decisive factor. But what exactly makes an ensemble of spaces successful? Michael Mönninger states that success relies on the calculated interference of urban space and building, thereby touching on the issue of porosity previously discussed by Walter Benjamin and Asja Lacis:

As porous as this stone is the architecture. Building and action interpenetrate in the courtyards, arcades, and stairways. In everything they preserve the scope to become a theater of new, unforeseen constellations. The stamp of the definitive is avoided. No situation appears intended forever, no figure asserts its “thus and not otherwise.” This is how architecture, the most binding part of the communal rhythm, comes into being here.²²

One would have to add that boundaries can appear as porous spatial phenomena and that the contemporary city needs this ambivalence and possibility of interpretation. Interior and

exterior are turned inside out and vice versa. This process leads to an atmospheric densification of the existing place. The specificity of the form is herein crucial for the success of the space as the intermediary between two situations.

We should note in passing that the connection between plot (black lines) and house (white walls) has been dissolved today, although they were once historically connected to each other. The separation of plot and building can be seen exemplarily in the development of a countermovement to the tenements, for example, the Garden City Movement and the following housing developments of the 1920s. This turn started at the beginning of the 20th century and developed the dissociation of plot and building throughout the postwar modernism, until finally the building was elevated and disconnected from the ground.²³

The structural boundary has been described as part of cultural-historical heritage. The administrative aspect of the boundary is described by referring to property. The habitual boundary considers the individual's behavior, and the spatial boundary is the container of the beholder's perception. The phenomena described regarding the threshold can be seen in terms of their permanence. Places and actions are directly connected with each other. The traditional codes might remain resilient and regain a certain meaning in today's cities. This explains why a window or an entrance is more legible than recent phenomena, which are somehow disconnected from proportion and body. The same effect recurs once the familiar elements start to appear as undefined situations between public and private, and when boundary and space are disconnected. Consequently, a place loses its specificity and forces the reorientation described at the beginning of this chapter. The matter of thresholds needs to be revisited once again.

Notes

- 1 The term boundary is preferably used in this chapter, although in English-language usage, this gets differentiated between border, frontier, boundary, bounds, and limits. In German, the term *Grenze* is generally used, which can mean a border or a boundary.
- 2 Genep introduces different categories of rituals, such as rituals of separation, incorporation, or transformation.
- 3 Schroer, M. 2006. *Räume, Orte, Grenzen. Auf dem Weg zu einer Soziologie des Raums*. Frankfurt am Main: Suhrkamp Verlag. See p. 291 ["Die Uneindeutigkeit der Grenzen und die Zunahme räumlicher Bezüge erschweren die Verortung und die Anpassung des Körpers der vorgegebene räumliche Arrangements immer weniger antrifft. Räume und Körper sind gewissermaßen aufgefördert, sich selbst permanent neu zu erfinden."]. Translation by the author.
- 4 See Stalder, L. 2009. *Präliminarien*. In: *ARCH+ 191/192 Schwellenatlas*, eds. S.Kraft, N.Kuhnert and G. Uhlig, pp. 24–25. Aachen: ARCH+ Verlag.
- 5 Schröder, U. 2015. *Pardié. Konzept für eine Stadt nach dem Zeitregime der Moderne*. Köln: Verlag der Buchhandlung Walther König.
- 6 *Ibid.*, p. 13.
- 7 *Ibid.*, p. 14. Figure 10 shows a characteristic situation in the city of Aachen: Two or three steps lead to a long corridor, from which the front building and rear building can be accessed; the entrance door is often accessed through a recessed room, which is one of the characteristics of the Rheinische Dreifensterhaus (the Rheimish three-window house).
- 8 *Ibid.*, p. 13.
- 9 Benevolo, L. and B. Albrecht. 1995. *Grenzen – Topografie, Geschichte, Architektur*. Frankfurt am Main: Campus Verlag, See p. 4 ["Eine Grenze stellt eine echte oder vermeintliche Differenz zwischen zwei Orten her [...] Der Effekt einer nur physischen oder vorgestellten Grenze ist der gleiche: Sie bekräftigt einen Unterschied."] Translation by the author. From the German translation.
- 10 Open fields.

- 11 Marches.
- 12 Rain.
- 13 See Stalder, L. 2009 Prä_liminarrien. In: *ARCH+ 191/192 Schwellenatlas*, eds. S. Kraft, N. Kuhnert and G. Uhlig, 24–25. Aachen: ARCH+ Verlag.
- 14 See Van Gennep, A. 1909. *Les rites de passage*. Paris [from the German edition: Van Gennep, A. 1986. *Übergangsriten*. Frankfurt am Main: Campus Verlag]. p. 27.
- 15 Or spaces of transition.
- 16 Mönninger, M. 2014. Raumwende, praktisch. Vom Nutzen des “spatial turn” für die Architektur. In: *Stadt der Räume*, eds. A. Denk and U. Schröder, pp. 83–94. Tübingen, Berlin: Ernst Wasmuth Verlag, see p. 84. [“Gemeinsam ist diesen Räumen, dass sie entlang der Grenze zwischen Innen und Außen, Bei-uns und Nicht-bei-uns, Eigenem und Fremden, Inklusion und Exklusion, Verstehen und Nicht-Verstehen organisiert sind.”]. Translation by the author.
- 17 Stalder, L. 2009. Prä_liminarrien. In: *ARCH+ 191/192 Schwellenatlas*, eds. S.Kraft, N.Kuhnert and G. Uhlig, pp. 24–25. Aachen: ARCH+ Verlag.
- 18 Such as river courses or field corridors.
- 19 Such as plots or city borders.
- 20 Such as the cleaning of shoes on the doormat or stepping back from the yellow line in the train station.
- 21 Such as staircases or lintels.
- 22 Benjamin, W. p. 165 f.
- 23 See the author’s research on the matter of the plot and the land issue, for example, as described in sITA – studies in History and Theory of Architecture, Volume 8, 2020.

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PART II

Mapping Places

The Italian Tradition of
Urban Studies



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7

DRAWING THE CITY

Form and Meaning

Lamberto Amistadi

It is now commonly known that cities, like facts, also only exist once they have been depicted, and that this depiction is the result of an act of voluntary determination, which selects certain elements while excluding others.

A long tradition of urban studies in Italy¹ has sought to identify the conceptual categories on the basis of which to select those elements to be represented – that is, the signs to be drawn on paper – that would bring the city's drawing closer to the architectural design. To do this, the destiny of architecture had to be intertwined with that of the city so that architecture not only indicated the work or discipline, but the city itself is understood as an architectural work. If the city is a work, then the *language of description* (Amistadi 2012b) must represent the physical reality of the facts, in the sense of what has been done, *urban artifacts*² with their specific form and individuality. On the contrary, what must be excluded from the drawing are the elements of the city lacking practical and aesthetic intentionality, that is, elements without meaning. The intended image thus obtained will not only show the relationship between the urban artifacts, and between the artifacts and the parts of the city, but also the willingness of the city itself to be transformed starting from the definition of its stable and permanent elements. Through patient decoding and recoding work, the city's drawing and architectural and urban composition redefine the playing field in which architecture operates and reaffirm its strategic role in the city's design.

Form

I would like to start with a beautiful drawing of Padua made by a working group led by Professor Eleonora Mantese at IUAV in Venice commissioned by – so to speak – the edition of the Festival of Architecture³ entitled *European City Architecture. Structure, Project, Image* (Amistadi and Prandi 2011). In a certain sense, the edition was the premise for the ArchéA project (for at least three out of five of the partners; Figure 7.1).

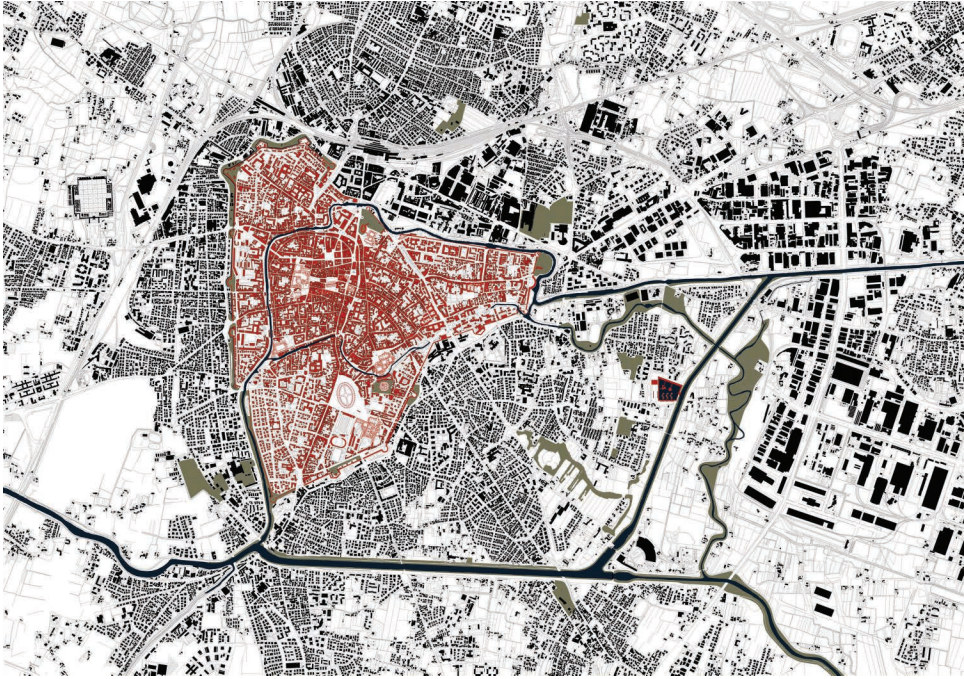


FIGURE 7.1 Drawing of the city of Padua with the area of the Historic Center in red. Original drawing in 1:5,000 scale. Degree Workshop: City of Padua. Supervisor: E. Mantese. Coexaminers: C. Eusepi, G. Rakowitz, U. Rossi. Graduates: A. Meneghin, M. Perbellini, S. Vialeto, A. Tambè.

We can interpret the red color highlighting the Historic Center in the drawing in various ways:

- a These *nuclei of the concentrated city* can simply represent – as Giuseppe Samonà wrote (1980, 16; Amistadi 2012, 69) in an essay entitled *How to start over. The territory of the extended city according to a new form of urban planning* – “images that acquire a particular expressive value, almost large natural fragments full of history.”
- b Or the red nucleus of this drawing of Padua can represent a concrete and exemplary model of a type of open space to be taken as a reference point that is both quantitative (density, distances) and qualitative (the shape of open spaces in relation to the shape of the blocks), not necessarily to aspire to, but certainly to take measurements in progressive and strategic terms. It is said in these cases that the impossible – that is, the impossibility of replicating the spatiality typical of historic centers as in the contemporary city – becomes the measurement of that which is possible.
- c This red nucleus can also have a third meaning: to in some way represent the idea of a *part of a city*, the idea or possibility of building a part of a city that is morphologically complete and, as such, circumscribed and recognizable. The European Landscape Convention (CoE 2000) also speaks of “landscape” in terms of *part*,⁴ referring to a part of a territory perceived and recognized by the population on the basis of its character. That is, it places the relationship between *part* and recognizability, also relative to its dimension.

Giuseppe Samonà (De Carlo and Samonà 1984) builds the Program Plan of the Historic Center of Palermo starting from the idea of a mapping that detects the parts of the city based on their formal coherence. In truth, he is careful not to consider the historic city center as something that is fixed once and for all and frozen in its form. Samonà speaks of *open systems* and *closed systems*, with the systems being open or closed based on their degree of transformability. The degree of transformability is assessed on the basis of their formal completeness. In fact, these open or closed systems are formal systems understood according to both of the meanings the concept of form can assume: the autonomy of the architectural form and even of pure visibility on the one hand – Samonà compares the shape of one of these systems to that of a spoon – and the form understood as a system which is accomplished and organized in its entirety (Figure 7.2).

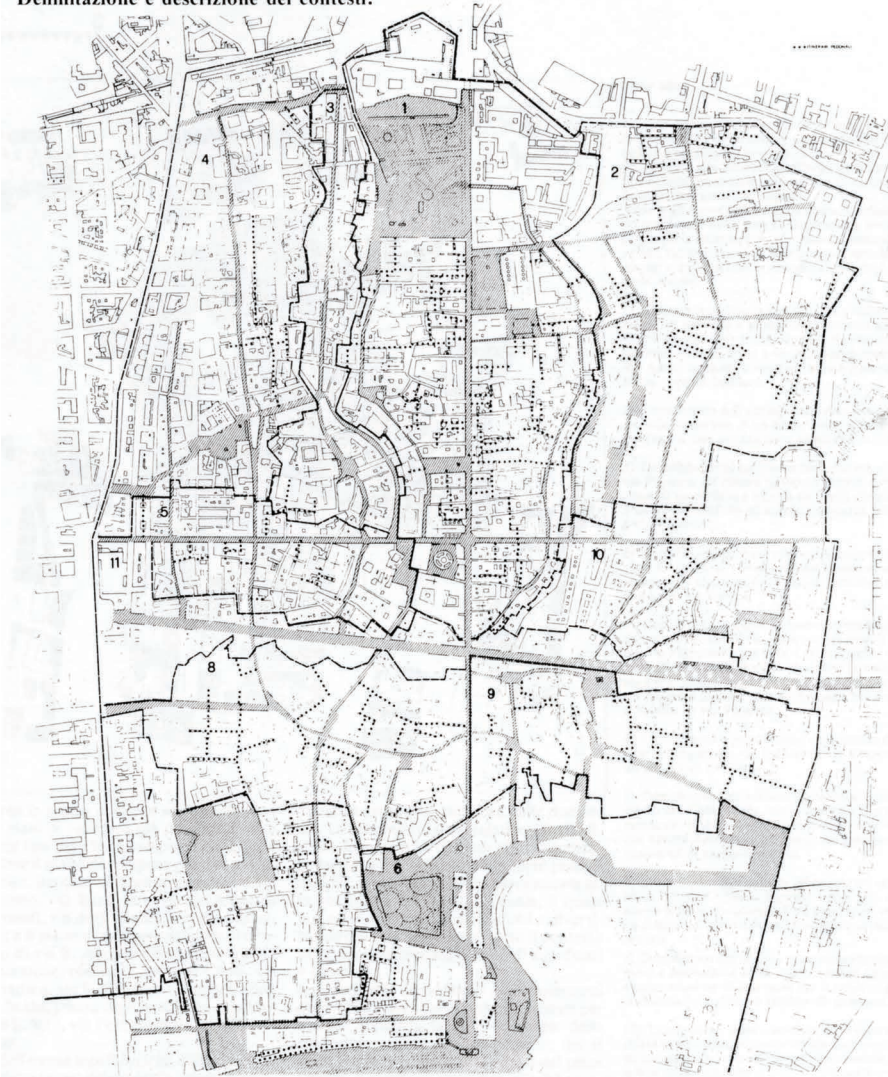
In truth, the formal units drawn by Samonà are more complex than a mapping based on a simple morphological approach. The parts identified by Samonà are a sort of environmental unit that he calls *contexts*, whose identification combines the recognition of form with a sort of cultural recognition that also touches on toponymics. That is, the goodness of the choice of the *context* or part of the city is suggested and certified by the fact that that part is known by a certain name: the recognition starts from certain knowledge. Luciano Semerani (2006) wrote a very beautiful text on Samonà, *Giving things a name*, and says: “In some of his latest studies of regulatory plans the usual colors, the usual nets that are used in urban planning gave way to writings, procedures, behaviors, words, *the names of things*.” Even the contexts are accompanied by a description for which the formal coherence of the part must go hand in hand with the story, with what can be told. In all fairness – and this is very important – the parts almost always take their name from their monumental core. The parts or systems or contexts always contain a monumental core, which works as an irradiation center, from which, from the inside out, an order and a tension are established that are reflected on the entire context. These monumental cores express a certain degree of recursiveness; that is, it could be said that they are a part just as the historic center represents the whole city.

There is another very famous drawing in which the dialectic between permanence and transformation is entrusted – so to speak – to the invariant toponymy. It is the drawing by Saverio Muratori (1960) of the Historic Center of Venice. In this case, the names are those of Saints: San Pantalon, San Tomà, Santa Margherita, San Polo, and so on (Figure 7.3).

There are many ways to read Muratori’s drawings of Venice. One of these is that suggested by the drawing of Phases III and IV of Figure 7.3, where the transformations of the city over time are represented simultaneously, superimposed on the drawing sheet as if they were a set of possible solutions. In general, the topicality of the design, through an act of voluntary determination, sets the different historical times in the present by reintroducing the solutions the historical development of the city has undergone within the list of possible solutions. This unusual simultaneity, that is, being outside of historical time, is the sense in which in *The Architecture of the City* (1966, 1982, 70), Aldo Rossi openly declares that “urban science is not a historical science” and in which he also stresses how the study of urban evolution can benefit from the study of toponymics: “(...) it is apparent that all cities contains numerous examples of significant physical modifications of the land which are recorded in the names of their older streets and roads.”

What interests us about these two experiences – that of the drawing of the *Program Plan of the Historic Centre of Palermo* and that of the Muratori’s drawing of Venice – is that the drawing, in both cases, takes on a strategic dimension. This strategic dimension is based on

Delimitazione e descrizione dei contesti.



Contesto n. 1, Cassaro: comprende il nucleo più antico delimitato dal corso Alberto Arleo, piazza Perani, via Pagliaro, via Celso, salita Castellana, salita S. Antonio a Nord. Via degli Schioppetieri, discesa dei Giudici, piazza Bellini, via dell'Università, rua Formaggi, piazza S. Chiara, via dei Biscottari, piazza San Giovanni, via del Bastione, piazza d'Orléans e piazza Indipendenza a Sud. **Contesto n. 2, Capo, Sant'Agostino:** comprende il tessuto urbano della depressione del Pagliaro e, a Nord-Ovest, il quartiere del Capo. Il limite Nord, a partire dalla via Maqueda, prosegue per via U. A. Amico, via A. Favara, via Volturno, piazza V.E. Orlandino sino al corso Alberto Arleo. **Contesto n. 3, via Porta di Castro:** occupa la depressione del Kenonia lungo l'asse di via Porta di Castro che, proseguendo per via Casa Professa e via Ponticello, si allarga a comprendere l'intero complesso dei Gesuiti fin quasi a via del Bosco. **Contesto n. 4, Albergheria, Ballarò:** comprende i due quartieri dell'Albergheria e Ballarò lungo l'asse delle vie Albergheria e del Bosco sino a via Maqueda, comprese le aree delimitate dal corso Tukory e dalla via Chiaromonte. **Contesto n. 5, via Maqueda:** comprende il tronco della via Maqueda a Sud dei Quattro Canti, da via dell'Università, piazza Bellini e discesa dei Giudici sino a via Cesare Battisti e via Torino inglobando le vie Calderai e Divisi. **Contesto n. 6, del mare:** comprende

l'intero fronte a mare da Villa Giulia a piazza Tredecim Vittime. **Contesto n. 7, Piazza Magione, via Alloro:** limitato a Nord dalla via Lungarini fino a Piazza Marina, comprende la parte più a monte della Kalsa negli elementi strutturali più significativi di via Alloro, piazza Magione e piazza dello Spaurmo. **Contesto n. 8, via Garibaldi, via Paternostro:** ha come asse mediano le vie Divisi, Paternostro e della Loggia fino a piazza Garraffello. I margini occidentali vanno da piazza Cassia di Risparmio per via Pannieri fino a piazza Caracciolo, mentre quelli a Nord da via Cassari per via Rottari, piazza Marina, via Lungarini, via Castroripillo, via Teatro Garibaldi fino a via Filangeri. **Contesto n. 9, Vaccarìa, San Domenico:** interessa l'area del mercato della Vaccarìa lungo la via e la piazza Garraffello. È interessato diagonalmente dalla via Squarcialupo fino a piazza Tredecim Vittime e confina a Nord con via Cavour e ad Ovest con i fabbricati di via Roma e piazza San Domenico. **Contesto n. 10, Olivella:** confina ad Oriente con la via Roma e a Nord con la piazza S. Spinzura fino a piazza Verdi e via Maqueda, includendo i fabbricati che si affacciano sulla discesa delle Carrre fino a via Candelai. A Sud con i fabbricati che costeggiano via e piazza Venezia fino agli affacci su via Roma. **Contesto n. 11, via Roma:** si riferisce all'asse di via Roma, da piazza G. Cesare (Stazione) a via Cavour.

FIGURE 7.2 Giuseppe Samonà, Giancarlo De Carlo, Program Plan of the Historic Center of Palermo, 1979–1982. Delimitation and description of contexts. Supplementary to *Progettare* 1, 1984.



FIGURE 7.3 Saverio Muratori, Drawing of the four development phases of the San Bartolomio District in Venice. From *Studi per un'operante storia urbana di Venezia* (1960).

a hypothesis that corresponds to both an act of faith and to an analysis method: that the formally completed parts exist or can exist and that these parts are decisive for the quality of the urban anthropic environment. The strategy of the city by parts can act on two levels: (a) by intervening on the definition of the part, that is, on the completeness of the formally completed part, or (b) the strategy can intervene between the parts, at the level of the continuity and discontinuity of the parts themselves, that is, on the interruptions, the discontinuities precisely between one part and the other, and the white spaces around the written words of Mallarmé's poems, which emphasized the meaning of some words by leaving smaller or larger white spaces around the words themselves: I mean those portions of land that do not correspond to any classification, which are unnamed.

A strategy of this kind necessarily concerns the drawing table, as it cannot be practiced in the abstract. It is a strategy that involves the redesign of the city by addition. This is not abstraction by subtraction starting from a general technical paper, but addition in which the drawing consists of the parts and elements that can be given a name. The map consists of what is added *gradually* to the drawing sheet, that is, "to the city as to a sheet on which to draw." Oswald Mathias Ungers (1997, 19) speaks of *discovery urbanism* and says: "Urban art consists of finding places in the chaos of the city, giving them a name and revealing their peculiarities. It is therefore an urban art of discovery and not invention."

Meaning

I would like to now return to the topic of the continuity and discontinuity of the parts within the city, because this is the ground on which the validity of the initial hypothesis is measured, that is, that the open space of the historic center can be valid as a measurement for the evaluation and design of the contemporary city, that is, the paradoxical consideration that the method of intervention on the historic city can also be valid for the contemporary city. If the space of the historic city is a continuous space, how can a model that assumes the continuity of urban space as fundamental be valid for designing the discontinuous, open, and fragmented space of the contemporary city?

Erwin Panofsky introduces *Meaning in the visual arts* (1955, 24), offering as an alternative to artistic intention he calls *primary* that which is between *open space* and *closed space*: on the one hand *bodies*, understood as closed and delimited volumetric units, and, on the other, *space*, understood as the abstract, extended and unlimited open Cartesian space. But

immediately afterwards Panofsky masterfully declares that the real alternative – which he calls fundamental – is not that between open space and closed space or space and body but that between *differentiation* and *continuity*. If we reformulate the description of the nature of the historic center of medium-sized European cities in terms of differentiation, we can shift attention from a spatial-quantitative connotation (continuity) to a spatial-qualitative one (the intervention of a difference within a continuous space). Carlo Aymonino is perfectly aware of this when, in *Il significato delle città* (Meaning of cities; 1975, 6–7), he takes up Panofsky’s concept and speaks of the monument precisely in terms of differentiation:

[the monuments] Become significant relative to this or that city precisely because, first with their specific presence and then with the diversification of use, they decisively contribute to changing the partial references with respect to the whole, to the overall urban form.

That is, as specific elements included in the category of *primary urban artifacts*, monuments are not emergences in themselves, an end in themselves, that is, of more or less simple exceptional facts, but are significant elements of differentiation in that they retroactively act on the shape of the city, “changing its partial references with respect to the whole.” In this way, the most important thing, what really characterizes the historic centers of medium-sized European cities, is no longer their spatial continuity but the wealth of significant *urban artifacts* that, with their differences, shape the quality of the urban space.

A corollary to the replacement of the opposing body/space pair with that of differentiation/continuity concerns the disarticulation of the connection between monument and body; that is, the monument is not such because it is identifiable with a body understood as a three-dimensional volumetric unit, but for its meaning – its differentiating value; similarly, a volumetrically empty space is not necessarily meaningless. This is how a football field, a polo field, a wheat or dairy field, a park, a garden, a vegetable garden, a brolo (walled-in garden) also act as elements of continuity (semantics) beyond their volumetric inconsistency (Amistadi 2008). Two Polish anthropologists who in contemporary publications are considered the inventors of the concept of *empty space* – Jerzy Kociatkiewicz and Monika Kostera – in a beautiful article entitled *The Anthropology of Empty Spaces* (1999) published in a magazine with the equally interesting title *Qualitative Sociology* clearly explain how real emptiness is the place to which no meaning is attributed. They say,

They do not need to be physically divided by fences or barriers. They are not forbidden places, but empty spaces, inaccessible because of their invisibility – and I would say, because of their unspeakability–. If giving meaning to things is a task of modelling, understanding, redirecting surprise and creating meaning, our experience of empty spaces does not include it.

We could say that from a qualitative point of view – not of *Qualitative Sociology* in this case, but of Architecture – true urban continuity and true densification do not concern volumetric quantities in themselves as much as the possibility that architecture offers for building significant places. Since there has been a lot of talk about densification for some time, I have already called this type of qualitative densification *semantic densification* (Amistadi 2012a).

The case of Bologna

Semantic densification means considering the fundamental role that urban artifacts play in the architecture of the city and establishing that the meaning of cities, as well as the quality of their public spaces, depends on their presence, and especially on the presence of specific urban artifacts, endowed with their own name and which are at the same time architectures and places. Because this is precisely the core of the Italian urban studies tradition, considering architecture in relation to the city.

I will provide some examples of this relationship using the city of Bologna. The first type of relationship, which is the simplest but not the least important and which corresponds to a sort of *positional logic*, is the positional relationship. This is the location of monuments in relation to parts of the city. It is a matter of boundary architecture or topology: urban artifacts are placed at the boundary of the parts, the inner boundary, or the outer boundary. Some monuments, such as the Monastery of San Domenico, are placed on the inner edge of the city's first circle of medieval expansion – the so-called *Circle of Thousands* – while others, such as the Monastery of San Francesco, are placed at its outer boundary. Entire families of monumental emergences give a rhythm to the roads that measure the distance between the first and second medieval expansion and leave the *Circla* through 12 gates. The convents of San Giuseppe and the Santissima Annunziata at Porta Procula and the Monastery of San Michele in Bosco are located in the belt of land between the walls of the city and the hill. The Margherita Gardens occupy the space between the *Circla* and the slopes of the Bologna Apennines (Figure 7.4).

But the monuments do not simply serve the passive role of emergence. On the contrary, they play an active, even germinating role in the construction of the city. Take, for example, the Monastery of San Francesco. In the early 1200s, the territory outside the Circle of Thousands was a portion of the city that had been completely destroyed by the invasion of the barbarian population of the Lombards. The Franciscan monks built their monastery on this land, aligning it with the city gate, and it is from this settlement that the city grew and developed outside the walls, growing along the streets that flank the monastery. The urban artifact thereby fulfilled a dual function: it allowed the development of the city and connected a previous part with the next as a bridge to the other. In other words, it allowed for continuous urban development. The same could be said for the eastern part of the city and for the Monastery of Santa Sofia dei Servi. The monasteries acted as catalysts for the development of the city both to the east and west (Figure 7.5).

But the role of the monuments in the city is even stronger. They have an *irradiative* purpose; that is, they constitute the centralities from which narrative lines are established within the city. An ideal example is the sanctuary of the Beata Vergine del Soccorso. The history of this monument is also connected to a new settlement within the city, but in this case its topological motive is different. In this case, the church was not located on the edge of the consolidated part of the city, but on the opposite edge of the new part, at the end point of the road that extended between the Circle of Thousands and the *Circla* and along which, around 1200, the new settlement developed starting from two rows of small houses. Since the beginning of the 1500s, the inhabitants of the village worshipped a wooden statue of the Madonna with child located exactly where the sanctuary currently stands. When the plague broke out in Bologna, the statue of the Madonna del Soccorso was carried in procession, propitiating – so it seems – the end of the plague. Every year since then a procession



FIGURE 7.4 Drawing of Bologna with the *Circle of Thousands* (dashed red line in the center of the drawing), the *Circla* (continuous red line) and the monuments: 1. Monastery of San Domenico; 2. Monastery of San Francesco; 3. Convent of San Giuseppe; 4. Convent of the Santissima Annunziata at Porta Procula; 5. Monastery of San Michele in Bosco; 6. Margherita Gardens; the Sanctuary of Madonna del Soccorso (A) with Via del Borgo di San Pietro and the Church of San Rocco (B) with Via del Pratello. Original drawing in 1:10,000 scale. Laboratorio ArchéA.

has crossed the city to bring the statue of the Madonna to the Church of San Rocco in Borgo del Pratello on the opposite side of the city (from points A to B of Figure 7.4). Thus, the two monuments establish the extreme points within whose boundaries the ritual event takes place. Their position within the city not only assumes a syntactic meaning – marking the beginning or end of a part, in this case the road, which also becomes an accomplished and defined urban artifact – but also establishes a narrative tension between parts of the city that are distant from each other, united by the ritual of which they constitute the

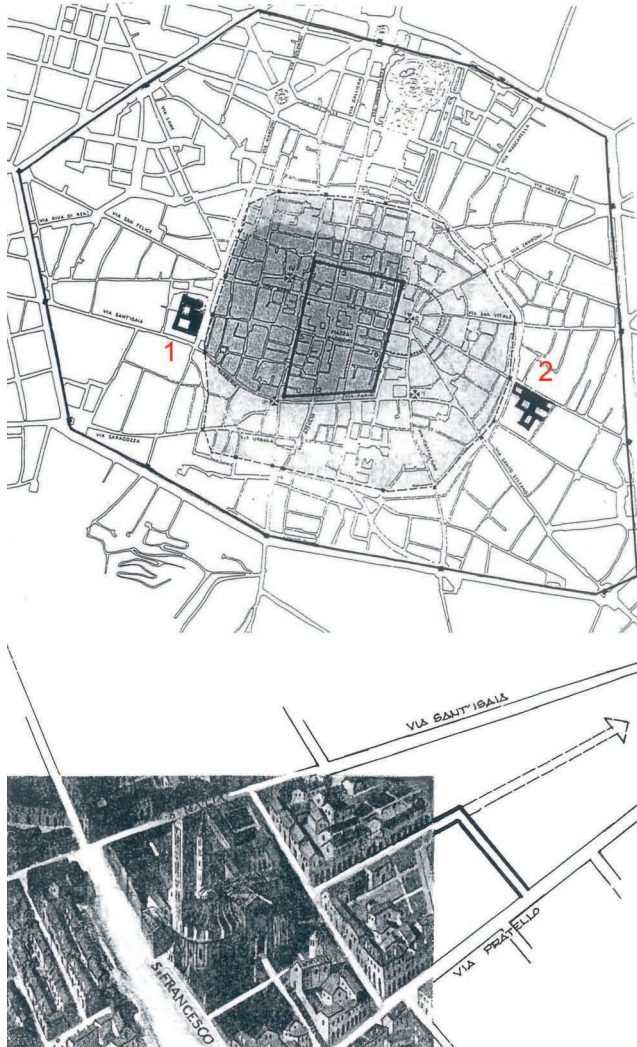


FIGURE 7.5 The position of the Monastery of San Francesco (1) and Santa Maria dei Servi (2) within the Historic Center of Bologna. Via Sant’Isaia and Via Pratello, the streets that flank the monastery, become the guidelines of urban development. From Luigi Vignali, *Dall’antica perduta cattedrale a San Petronio. L’evoluzione dell’architettura sacra a Bologna* (2002).

cornerstones. The sanctuary of Madonna del Soccorso demonstrates another aspect of the relationship between architecture and the city and the sacredness of places: monuments are never born from a tabula rasa but are always built instead of or on top of a previous one, in a chain of replacements whose origin has roots in the stuff of legends. In other words, they always have a revived value. Many similar examples can be made, starting from the churches that the Jesuits built above the vestiges of Aztec temples in Mexico and Central America

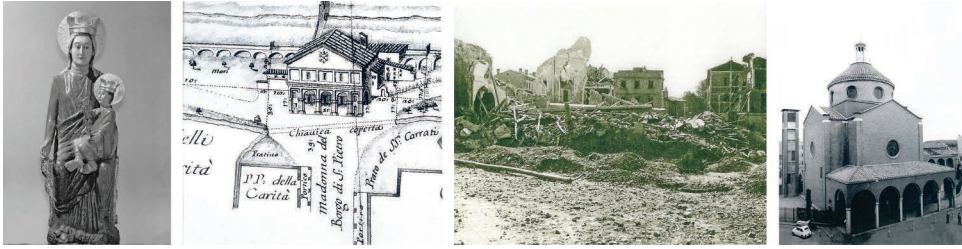


FIGURE 7.6 The wooden statue of the Madonna del Soccorso; the 16th-century church; the destruction of the sanctuary during the Second World War; the reconstruction of the church after the war.

(Amistadi 2018). Thus, the Church of Madonna del Soccorso was built in 1500 in the place where the wooden statue of the Madonna was located and had been worshipped since the previous century. And when the church was destroyed by bombings in the Second World War, it was rebuilt in the same exact spot (Figure 7.6).

But monuments also serve another purpose within the city. They act as time and space machines and can connect one place in the city with another place in another city in another time. The Basilica of Santo Stefano in Bologna is a monumental complex consisting of seven churches built over an ancient Roman temple dedicated to the cult of Isis. This monumental complex is called Sancta Hjerusalem and is built analogously with the complex of the Holy Sepulcher in Jerusalem. When the Arabs destroyed the Basilica of the Holy Sepulcher in Constantinople after the year 1000, the Benedictine monks decided to rebuild it in Bologna. Anastasis (the place of Christ's burial and resurrection) is built on the ruins of the Roman temple, as well as the Sacred Garden with the Calvarium and Martyrium and a new church representing the place of the crucifixion. Thus, Bologna and Jerusalem are spiritually interrelated by the analogy upon which their monuments are invested. Similarly, around the year 1200 on the so-called Mount Oliveto, a new church was built that corresponds to the basilica erected on the Mount of Olives in Jerusalem. The church takes the name of San Giovanni in Monte, but, in fact, the subsequent urban transformations have made the hill's presence almost imperceptible. Its existence is remembered in the name of the monument; as Aldo Rossi said, the name of the monument becomes the clue and testimony of the transformations that the city has undergone over time.

Another such example concerns the Church of Santa Maria della Visitazione al Ponte delle Lame, which is a demonstration of how the explanations behind urban transformations are often hidden in the names of monuments. In the photograph of Figure 7.7, a small church can be seen alone in the middle of an open space, seeming to have a rather strange relationship with the urban fabric. But its name offers a clue and explains the transformation that has taken place: the name *Santa Maria della Visitazione al Ponte delle Lame* suggests that this church was built near a bridge or that the church itself was a bridge [ponte means bridge in Italian]. In any case, there must have been some course of water. And in fact, between the Circle of Thousands and the Circla there was once a canal that crossed the road which started precisely from Porta Lame. The Church of Santa Maria della Visitazione al Ponte delle Lame stood exactly at the point of that intersection (Figure 7.7).



FIGURE 7.7 Church of Santa Maria della Visitazione al Ponte delle Lama.

Conclusion

This interweaving between significant architecture and the city, between urban artifacts and cities, clearly represents the so-called *monumental structure of the city*. The word *structure* emphasizes the relationship between the elements, where the relationship is more important than the elements themselves. Roland Barthes writes that – especially in our time – the most important thing is not building original objects but establishing original relationships between existing objects. Some call this interweaving *figurative structure*, and if we again appeal to Roland Barthes, he tells us to understand the term *figure* not so much in a rhetorical sense “but rather in a gymnastic and choreographic sense (...): the body of athletes, speakers, statues: that which can be immobilized of the body under stress” (1977, 5). The term offers a good idea of how architectures work within the city: they are fixed elements but determine and presuppose dynamics within the city. Figuration organizes the relationships between bodies and the position they take within a meaningful sequence. The figures carry out an orderly and continuous task even in the discontinuity and fragmentation of the context in which they are placed. It is for this reason that a drawing depicting the figurative structure of a city clearly represents its shape and meaning. Like the other expressions of material and spiritual culture, the form of the city is also subject to continuous transformation; the new image always contains the loss of the previous one. But it is precisely the unstable, changeable, and accidental nature of the urban phenomenon that allows us to grasp its stable and necessary elements.

From this point of view, the drawing of the city can only be a work that proceeds by addition, *gradually* – as Samonà says⁵ – by adding unity of meaning starting from that which is defined, accomplished, and permanent: the persistence of the paths and the roads, the urban artifacts with their individuality, the monuments with their own names: Piazza Maggiore, Basilica di Santo Stefano, Porta San Vitale, and so on within a specific city – Bologna,

Milan, Venice, Aachen, and so on – with their specific form. Because the form is always specific. Starting from the framing and definition of the scale, “the city becomes a sheet on which to draw.” This drawing has not only a representative value (i.e., it is not a question of depicting the face of the Madonna, as Le Corbusier says [1921, 1999, 35–37] about the strategic value of the planimetry), but the drawing that interests us is that particular form of drawing in which the figurative structure of the city makes the dialectic between permanence and transformation evident, that type of drawing which Giorgio Grassi and Aldo Rossi discuss (1970, 70) in the report for the design of the San Rocco district in Monza in which “the general case is still legible, the law that presides over the drawing.” In this way, the drawing builds, indicates, or simply clarifies – without distractions, so to speak – the playing field, the starting condition, and, therefore, the number of possibilities for the design of the present and future city. This type of drawing is one in which there is a lot of *free space*; in a certain sense, such a drawing simply has to *make space*. What should the space of architecture make room for? Architecture. It can act retroactively on the same playing field, redefining its boundaries and even its rules.

But perhaps this interweaving of topology, toponymics, and topography can be better understood with the term used by Giulio Carlo Argan, *narrative structure*. In a beautiful essay entitled *La città nel pensiero di Leon Battista Alberti* (The City according to Leon Battista Alberti), Argan writes (1982, 53–54), “For Alberti, [architecture] is framed within the broader context of the city, it is the interpretation and communication of its meaning.” And again, “As a representation and communication of historical-ideological contents, the city is discourse, oratory, rectorry.”

Notes

- 1 In other words, the tradition of urban studies whose best-known and most recognized outcome corresponds to the book *L'architettura della città* (1966, *The Architecture of the City* 1982) by Aldo Rossi, but which includes numerous projects and numerous other texts written between the early 1960s and the late 1970s, including: *Studi per un'operante storia urbana di Venezia* (Studies for an active urban history of Venice – 1960) by Saverio Muratori, *La costruzione logica dell'architettura* (The logical construction of architecture – 1967) by Giorgio Grassi, *Gli elementi della città e lo sviluppo di Trieste nei secoli XVIII e XIX* (The elements of the city and the development of Trieste in the 18th and 19th centuries – 1970) by Luciano Semerani, the collective volume *La città di Padova* (The city of Padua – 1970) edited by Carlo Aymonino, issue 7 (1970) of the magazine “Lotus” entitled *Architettura nella formazione della città moderna* (Architecture in the formation of the modern city), *Il significato della città* (The meaning of the city – 1975) by Carlo Aymonino, *L'architettura della realtà* (The architecture of reality – 1979) by Antonio Monestiroli.
- 2 Aldo Rossi titles the first chapter of *The Architecture of the City* (1966) “The Structure of Urban Artifacts.” The chapter introduces the general approach to the study and design of the city. This approach refers to the notion of *urban artifact*: that is, the city understood starting from “what has been done,” with its specific form and its own aesthetic intent; the urban artifact can correspond to a building or a street or a place. *Urban artifacts* define the identity and character of a part of the city and therefore of the entire city. *Urban artifacts* are characterized by their architecture and form, that is, by their *individuality*. In other words, the urban artifact represents the “last verifiable fact” that allows approaching the study of the city in the most concrete way possible. After this, Aldo Rossi offers the example of the Palazzo della Ragione in Padua.
- 3 The Festival of Architecture is an international cultural event conceived by Carlo Quintelli, that was held in Parma, Modena, and Reggio Emilia for 10 years between 2004 and 2013. The organized events included seminars, exhibitions, roundtables, and webinars and involved hundreds of teachers, researchers, and students over the years, all belonging to different Italian and European faculties of architecture. The experience of the festival gave rise to the scientific magazine *FAMagazine, research and projects on architecture and the city* <www.famagazine.it>.

- 4 “Article 1 – Definitions: a. Landscape draws a certain part of a territory, as perceived by populations, whose character derives from the action and natural and/or human factors and their interrelationships.”
- 5 In the project for the *Program Plan of the Historic Center of Palermo*, Samonà (1984, 81) speaks of the construction of the image of the city through patient and gradual work by adding units of meaning to the drawing sheet and defines this image as an *intentional and significant* icon:

Sometimes we stand before an object with certain research purposes, to analyze its meaning within a context that in many cases can be very complex; our descriptive analysis gives the object an intent related to a type of particular description, which gradually encodes the first image of it, and forms a second in which they are replaced with the signs of mere similarity of the various elements of the object, signs corresponding to the intent that is to be given to the new image, detecting characteristics of substance that influence its form and prepare a third image in which form tends to integrate into the substance itself to achieve the intentioned and significant unity of the image which we define icon, as the arrival point of the iconic process that began with the first naive image.

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8

URBAN EVENTS AND THE SOUL OF THE CITY

The Poetic Political Tripartition of Urban Form

Ildebrando Clemente

The analogy between the concept of soul and the idea of city is established in Book IV of the Republic. An analogy that historian and philologist Nicole Loraux sees in her famous publication, *The Divided City*, as a true paradigm for understanding the essence of Greek cities, Athens first and foremost, since it leads us “to give the city a memory that resembles that of the individual, since they (the Greeks), perhaps more than anything else, conceived the analogy between the city and the individual as political” (Loraux 2006, 141). Keeping the French historian’s assertion open, we could say, in other words, that the essence of the Greek city is expressed in the link between city and citizen, between place and individual.

Now, projected into the space of collective values, the signs of this invisible link, the signs of the soul, are also expressed through the forms and spaces of the city and can be investigated by looking at the urban events. It comes as no surprise, therefore, that, in the 1960s, in his efforts to outline a rational theory of urban design, Aldo Rossi defined Athens as “the first clear idea of the science of urban events; it is the passage from nature to culture, and this passage, which is part and parcel of urban events, is offered to us by legend” (Rossi 1991, 193). According to Rossi, Athens is a clear idea of a city because it develops from the inside toward the outside according to a tripartite layout in which the primary generating elements of the urban form are articulated and recognizable: the temple, the organs of political and social life consisting of the buildings connected with collective activities, and so on; these structures are surrounded by the dwellings of the urban and rural communities. Athens is a clear idea of a city and yet, Rossi continues, it is also an unachievable urban idea: a city that “remains as the purest experience of humanity, in conditions that can never return” (Rossi 1991, 200). The conditions that can never return, to which Rossi probably alludes, are those expressed in the link between city and territory and which, in turn, are reflected in the link between city and citizen.

The feeling of the loss, in our time, of this original link between man and place by the universal *Mobilmachung* drives people, consciously or unconsciously, to live together but without being part of a community. We can ask ourselves: does the loss of the original link between place and individual mean the loss of the city’s soul? And again: is it possible to

think of a city, an image of a city, without a common origin among its citizens? This is the decisive and indirect question that emerges from the history of Athens and into which Aldo Rossi's reasoning ventures. In my opinion, to answer this question, Aldo Rossi calls upon the idea of the soul of the city. *L'âme de la cité* which, according to Rossi, unfolds before us in the figure of the collective memory of people. Rossi's idea of the city as a locus of the collective memory is an extension of Maurice Halbwachs's theories, according to which the city acts as a mirror that somehow reflects the soul of its citizens in the composition of the soul of the city, animating its ethical sense through remembrance (Halbwachs 2001). With the exercise of remembrance, every citizen within the city is stimulated to know himself or herself, his or her innermost soul. And this ethical self-knowledge represents the authentic source of his or her thoughts and actions (Figure 8.1).

As has been pointed out by many scholars of Plato, including Erwin Rohde, the link between soul and city is expressed not only through a structural analogy but also through one of a dynamic nature. In the structural analogy, it is possible to see how both the structure of the city and the structure of the human soul are divided and articulated in equal parts. In the dynamic analogy, however, it is possible to see that the form of the city acts like a soul and, in turn, the human soul acts like a city (Rohde 2006). As far as the structural analogy is concerned, it is worth remembering that Plato, again in Book IV, describes the soul as articulated in three parts: reason, which resides in the head; spirit, located in the heart; and, last, appetite, located in the gut, where irrational appetites originate. Human behavior can be

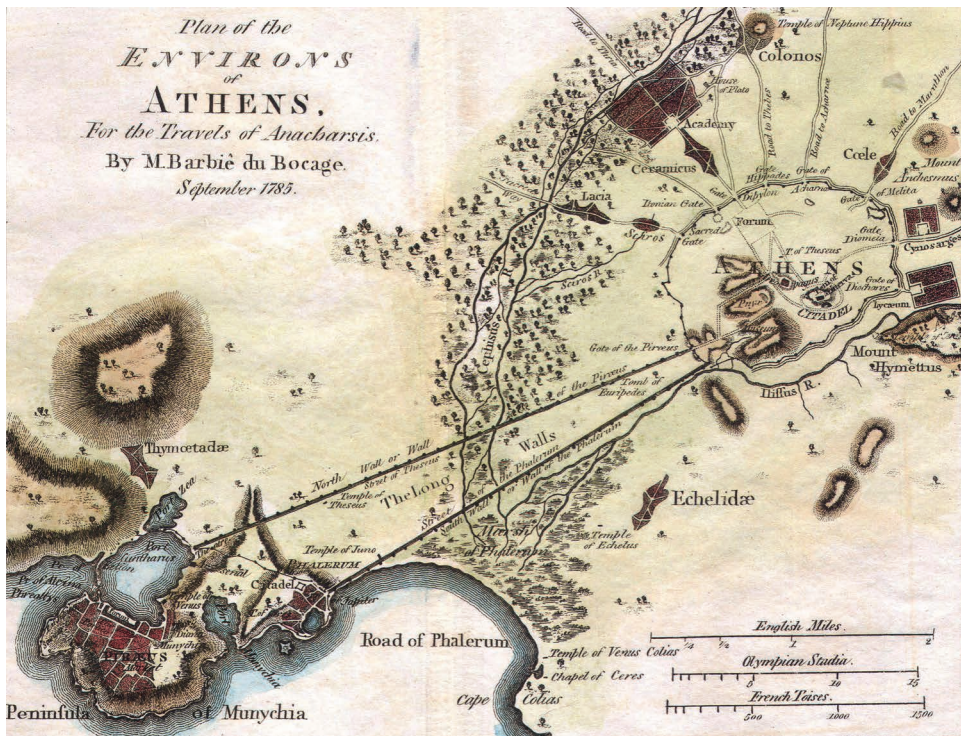


FIGURE 8.1 City plan of Athens in Ancient Greece, drawn by M. Barbic de Bocage, 1784.

analyzed, understood, and explained, precisely on the basis of the varying degree to which the three parts of the soul combine with each other, generating in people a different way of facing reality (Republic 436a–445e). In the same way, Plato imagines a polis founded on a tripartite order in which he sees the top represented by the philosophers, capable of showing the right way and acting in view of achieving the common good; then come the guardians, the legal and military class, whose job is to protect the city, its resources and its wealth; and, last, the working people, farmers, shepherds, and tradesmen who provide sustenance and food for the city.

This idea of organization of the polis is the result of a long historical process. When Plato proposed his idea of a tripartite city-state, the transition from a mythical vision of the organization of the earth to a geometric and rational conception was already underway in Greece, as shown by Jean-Pierre Vernant (2001). The mythical image of the link between man and earth was centered on the vision of a space divided into three levels. The space of the immortal gods and Zeus was the first level, the second level was that occupied by men, and the third level was associated with death and the gods of the underworld. On an ideological level, however, the transition from the mythical space of the temple-city to the rationally subdivided space of the city-state is encompassed entirely within Hippodamus' idea of the city. The famous architect from Miletus had outlined his ideas of the city-state in a treatise, *On the Constitution*, of which traces remain in Aristotle's *Politics* (*Politics* 1267b, 22–37=VII, 1–3). *Politics* summarizes the main aspects of Hippodamus' reflections, which, according to the Stagirite, are contained in the concept of division, the invention of the subdivision of the city into parts. Aristotle's notes reveal Hippodamus' predilection for trichotomy, and the Milesian suggests an ideal city divided into three classes – tradesmen, farmers, and warriors – organized in a territory divided into three sectors: sacred land, reserved for the gods; public land, reserved for warriors; private land, reserved for farmers. The three classes are united on a strictly political level, forming a single *demos* that elects its magistrates (Greco 2018; Figure 8.2).

The topography of the city of Athens can also be read as a tripartite form. The highest part of the city is occupied by the Acropolis. This area was originally intended for the construction of the palaces of the rulers of the city, and only later did it become the site of the places of worship and temples. Below and around the Acropolis is the *astù*, the lower part of the city, divided into several interconnected parts, containing buildings and public spaces, with the agora in the center. The lower part of the city was surrounded by the *chora*, a large area of farmland and pastures, necessary for the city's subsistence and for the provision of essential foodstuffs (Morachiello 2003).

It is important to remember that Plato arrives at the geometric-political idea of the tripartition of the soul and the idea of the polis by rewriting two ancient and persistent events that were part of the culture of the time. On the one hand, he reinvents the Pythagorean tradition, sustained by Hippodamus, which envisaged the subdivision of the soul of the world into three parts, located respectively in the head, the heart, and the navel of man (Macchioro 2014). On the other hand, by rewriting the traditional Indo-European political tripartition, Plato replaces this ternary structure, in which the priests were in charge of the city's destiny, with the figure of the philosopher.

The idea of a social and political order and of the occupation of geographical space based on a tripartite articulation is an archaic idea. Georges Dumézil highlighted the debt of European culture, and also of Plato, to the Indo-European heritage with regard to the



FIGURE 8.2 City plan of Athens in Ancient Greece. In evidence, *Acropolis, Asty-Agorà, Chora*.

invention of the tripartite community structure (Dumézil 2017, 25). The tripartite ideology of the Indo-Europeans envisaged an isomorphism between a trifunctional theology and a social tripartition. To achieve this mirroring, theology divided the divine world into gods of sovereignty, gods of strength, and gods of fertility, which corresponded to a social tripartition into priests, warriors, and farmers–breeders. Each of these groups was assigned a physical location: palaces and temples for the priests, arsenals and courts for the warriors, villages for the others. In Dumézil’s anthropological vision, tripartition is a force that has been at work in European history from the very beginning. Like an archaeological trace, the force of tripartition continues relentlessly to operate in the subsoil of European culture, rather like a child who continues to develop and suddenly emerges as an adult, at least according to the theories of psychoanalysis (Freud 1977, Halbwachs 2001, 94–101; Figure 8.3).

Le Corbusier’s urban theory also contains the idea of a tripartite functional order in which something both economic and psychological is present. The city is not something that can ever be considered complete, it is always evolving, and this is how we can understand Le Corbusier’s words: “Future cities are usually ancient cities” (Le Corbusier 1980, 79). In Le Corbusier’s vision, too, the invisible and problematic link between man



FIGURE 8.3 City plan of Athens, 1862.

and the city is clarified by the figure of the soul. The life of a city, wrote Le Corbusier, “is a continuous event that takes place over the centuries with material works, layouts or constructions, which give it its own personality and from which its soul emanates little by little” (Le Corbusier 2014, 113). Le Corbusier uses tripartition several times in his writings to illustrate his urban theory. In the Athens Charter, the three functions of the city are articulated in extreme synthesis. The three basic functions are: “1) living, 2) working, 3) recreation. The matters proper to the city are: a) occupation of the land; b) organisation of traffic; c) legislation” (Le Corbusier 2014, 147).

The French economist Thomas Piketty (Piketty 2020, 74–740) has shown how the invention of the ternary structure has been used throughout history, either to legitimize or delegitimize the relationship between a dominant system of government and social inequalities. Nevertheless, according to Piketty, despite their ability to adapt and transform preexisting needs and conflicts into new social and urban configurations, trifunctional arrangements have never been able to completely undo the inequalities and injustices induced by the ruling classes, which inevitably emerge within it. However, despite all the imperfections, functional tripartitions are still, as also suggested by Émile Benveniste, an effective way to prefigure, in ideological terms, the general advantages of a society as a whole (Benveniste 2001, 215–225; Figure 8.4).



FIGURE 8.4 City plan of Athens, 1894.

Plato's tripartite strategy also aimed to overcome inequalities and conflicts by introducing the medicine of the soul into the body of the city – and into the body of the citizen (Patočka 2019). We know that the buildings and temples of the acropolis were originally assigned the task of guaranteeing the mythical-ritual memories of the polis and of upholding the peace covenants between the different factions, avoiding stasis and thereby guaranteeing the unity and social cohesion of the different groups that made up the polis. We also know that with the growth of the city of Athens and the formation of new classes, especially between the 4th and 5th centuries, the cohesion and harmony of the city became increasingly difficult. From this moment onwards, the polis became increasingly consolidated as an aggregate that was not founded on a “revelatory order” but rose as a reality based on a rationally re-elaborated and motivated “democratic order.” A reality that is constantly called upon to re-discuss and re-think its assumptions and its governing directives. The vibrant heart of the pursuit of unity thus shifts from the acropolis to the agora, which becomes the center for collective initiatives and the interests of the daily life of the people. In this way, the symbolic

and political unity, somehow the deep soul of the city, inscribed in the space of the acropolis, is divided into two antagonistic poles. It is precisely in this division that the medicine of the soul is called upon to operate, even with collective oblivion and removal if necessary.

As shown by Nicole Loraux, this separation between the place of tradition and the gods, and the place of the individual needs and anxieties of everyday life, slowly penetrates the collective unconscious of the polis (Loraux 2006, 121–152). It is easy to see that this division is felt in the urban space as well as in the hearts and minds of the people. With this division, the people suffer the ethical, civil, and religious fragmentation of their inner soul. The people now see two forces to be entrusted with their destiny. How can the division in progress be reconciled? The uniqueness of Greek genius, as shown by Eric Robertson Dodds, was that it did not neglect this psycho-physical conflictual reality but incorporated it and institutionalized it in an official form in a new space: the theatre (Dodds 2003). In the city-state, the theatre is configured as the third place of the dark potential of the human and collective soul. The people see theatre as a sort of bridge over the huge gap between the mythical-ritual space of the gods and the political-economic space of man. A bridge which, thanks to the imagination, reunites the separated parts and rebuilds the link between men and the local gods and the forces of nature in a new and poetic form.

In other words, the medicine of the soul, called upon to use its rational component to heal the irrational conflicts that arise in the body of the city, sheds light on the importance of imaginative solutions for the city's destiny. The soul is an image-based reality, the quintessence of the dream world. And imaginative solutions are essential for addressing the conflicting and heterogeneous nature of the city. The soul is a way of fabricating a myth. Even Plato's Republic ends not with the exaltation of reason but with the surreal tale of the legend of Er (Figure 8.5).



FIGURE 8.5 View of the Acropolis from the south.

I believe, as already mentioned, that the urban theory developed by Aldo Rossi in his famous book *L'architettura della città* (*The Architecture of the City*) can also be traced back to the ternary spirit, simultaneously ideal and imperfect, and its implications for the human condition. I am convinced that both urban analysis and the theory of the city divided into parts are nothing more than the invention of a myth. A myth elaborated by Rossi at a particular moment in history in response to the risk of the loss of identity and the role of architecture in the city. A myth suggested to counter the unscrupulousness and arrogance of the faceless city of capitalist speculation. A myth conceived, like every other myth, to defend differences. In this case, to defend the memory and the heterogeneous characteristics of urban events. Rossi's interest in the urban psychology of tripartition includes his desire to develop the concept of locus on the basis of certain studies by religious historian Károly Kerényi, who, in the introduction to the text *Prolegomeni allo studio scientifico della mitologia* (*Prolegomena to the Scientific Study of Mythology*), identifies the tripartition of cities and buildings as one of the main reasons for the foundation of the urban space and ancient architecture (Rossi 1991, 310–311, Kerényi 2007, 34–35).

The importance of tripartition as a spatial configuration pattern of the city and architecture represents a common formula in the conception of ancient architecture. As shown by James Ackerman, Palladio's architectural principles based on the regeneration of antiquity and the rationality of composition also rely on the continuous reinvention of the triadic compositional system that alludes to the unattainable origins of architecture (Ackerman 1972). In continuity with the ancient experience, Rossi too tackles each compositional issue by resorting to triadic structures, elevating them, however, from the organic, rational, and political principles that trigger them, to poetic expressions (Clemente 2008). A ternary conception of urban theory resurfaces constantly in Rossi's argumentations and emerges clearly in these words: "The reading of the city advanced here by primary elements, constituted urban events, and areas of influence makes it possible to study the growth of cities without the changed dimension influencing the laws of development" (Rossi 1991, 243). Primary elements, constitutive urban events, and places of influence are the three spheres of the theory of the city in parts with which Rossi reinvents the relationship between urban history and design. And later, regarding the decisive impact that architectural policy should have on urban event and the conception of the city's form, Rossi continues (Figure 8.6):

while every city possesses a personal soul made up of ancient traditions and living sentiments as well as undecided aspirations, this does not mean that it is independent of the general laws of urban dynamics. Behind the individual cases are general events, and the result is that no urban growth is spontaneous, with structural changes being explained by the natural tendencies of different groups in different parts of the city. Lastly, man is not only the man of that country and that city but is the man of a precise and delimited place and there is no urban transformation that does not also involve a transformation in the life of its inhabitants.

(Rossi 1991, 245)

The archetypes of the soul and of tripartition, with which, in my opinion, Rossi tacks together the archaeology of his poetics of urban events, open a passage from the past to the present that gives us the image of a city as a "work of art" and the result of a political idea that must be accompanied by a poetic image in order to be effective (Clemente 2016).



FIGURE 8.6 View of the Acropolis from the Southwest.

Aldo Rossi draws on some of the arguments used by Karl Marx in his *Critique of Political Economy* to deliver a powerful poetic image for the city project. Marx saw the polis and Greek art as illustrating the “childhood of humanity” (Rossi 1991, 194). Childhood is the image with which, according to Rossi, politics can become poetic, with which architecture can become poetic and so rediscover its original vocation, which is to be able to reimagine once again the invisible link between man and place as the only access to the present of the city’s soul.

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9

CIVIC URBANITY

The Places of Everyday Life

Francesco Saverio Fera

The increasingly manifest social contradictions of contemporary society are inevitably reflected in the shape of our urban landscapes, giving rise to even more alienating places where the sense of estrangement is as alive as ever in the consciousness of citizens. The various forms of protest put into action in an attempt to eliminate or reduce the damage are on the one hand evidence of how the transformations of the places we live in are increasingly divorced from their human and territorial context, while on the other they affirm a new sensitivity toward the public aspect par excellence, the city. The stage of the “human drama” has been transformed in a relatively short period of time from a fixed stage full of customs and rules to a moving one in continuous and rapid evolution, often not without painful contradictions. Cities change more rapidly than we do, Victor Hugo said, condensing into a single aphorism much of what has actually occurred in urban space, a phenomenon that has progressively accelerated from the industrial revolution to today. The ongoing process of the modification of spatial relations, which also occurred in ancient times albeit in generally more reduced forms, has involved increasingly vast dimensions of parts of cities, when not entire built realities. These events, which have not always been able to provide answers bearing convincing proposals for the development of metropolitan landscapes, form in the city, according to the vision of Oswald Mathias Ungers, “a juxtaposition of contradictions, a process which is more dialectical than linear” (Ungers 1979, 10). With its contradictions and discontinuities, but also not infrequently with its continuity, the complexity of the architecture of the city is thus the natural field of study and experimentation of the theories of many architects attentive to urban phenomena (Figure 9.1).

The theme is however that of the search for a sharing of objectives, or a social art, for which the question lies in the development of the tools useful for achieving this purpose. Architecture understood as collective art is therefore simultaneously a reflection and a measure of it; in fact, as Hendrik Petrus Berlage argued,

since architecture is the art of society, it is fatal that it reflects, more than any other art, the different spiritual and political orientations of society, also characterized by a



FIGURE 9.1 F. S. Fera, A. Fantini, *La città dei musei*, 2012.

slow trend. These orientations can lead to oppression and the laceration of society, or, on the contrary, to liberation and union; architecture, like a barometer, will follow these changes. The other arts are also characterized by the prerogative of promptly expressing spiritual changes; it is when it happens on an individual and not a social level, and therefore does not reflect the transformations of society, as architecture does. The examination of architectural works allows formulating a judgment on the spiritual conditions of a historical period, as architecture is materialized spirituality and stones are quite eloquent. Yes, the stones speak, as they are nothing more than an idea materialized in an artistic form. For this reason, architectural art has an eternal value and monuments arouse a moving veneration in us: it is the monuments that make history and it is history that makes the monuments.

(Berlage 1985a, 222)

If we can still share these statements today, we must try to critically question the reality in which architects are called upon to work and the social framework, not without contradictions, in which their work is placed.

The current impoverishment of the state of architecture and therefore of cities can be inscribed within a reference frame of society described by Frederic Jameson, where the

culture of a product, as the sedimentation of knowledge and synthesis of a society, has been transformed into a commodity, for the affirmation of a community in which the dominant attitude of contemporary taste and fashion is a lifestyle marked by the increasingly rapid consumption of every object conceived. The prevailing trend of today's society is that everything is reduced to entertainment culture, with the consequential loss of the sense of reality and, with its exemplification, its rendering into a simple appearance modeled by icons lacking meaning. Accomplice of this attitude of reduction, which inevitably involved making architecture a mere commercial production, is the mass information system which, by virtue of the culture of exhibition, has generally replaced the necessary critical distance in the analysis of current production with a sort of cultural consumerism. Thus, taking up Jameson's theories, a consequence of this attitude – which is a formal characteristic of postmodernism – is the lack of depth and the expression of instances with a hasty character where the image repeats itself, losing its ultimate referent in an annulment of the notion of history. Everything is lived according to an aesthetic vision of events, consumed without an expression of equidistant judgment and, according to the collage technique, with heterogeneous citations. For the postmodern world, the decrease in the exteriority of experience means for Jameson a “loss of the radical past” or of the deepest reasons of history itself. This attitude places the individual in a state of bewilderment that prevents him from planning his own experience in coherent terms, therefore from finding his own place within society and representing his complexity. For Jameson, it is precisely from this situation that the need to measure himself against irrepresentability must arise through a “cognitive cartography” that “attempts to endow the individual subject with a new, increased awareness of his position in the global system.” Continuing his analysis, he thus hopes for a political and formative challenge:

the new political art (if it is really possible) will have to stick to the truth of postmodernism, that is to say to its fundamental object – the world space of multinational capitalism – and will simultaneously have to progress towards a new, for now inconceivable way of representing it, in which we can begin to understand our position as individual and collective subjects and regain an ability to act and fight, which at present is neutralized by our spatial and social confusion.

(Jameson 1984, 69)

For those who work in the city or those called to design it, this new ability to “act and fight” can be understood as the search for a recomposition, albeit by episodes, of “spatial confusion,” in opposition to the general flattening of contents and forms of the city's architecture. There is therefore a pressing search for ways to operate within this condition of contemporary urban agglomerations full of bewilderment and chaos, which seems to find the only answer to the babel of architectural languages that surround us today. On this question, or on the relationship between memory and invention, Ernesto Nathan Rogers intervenes by arguing that

the ideal purpose for settling the contradictions between memory and invention is to absorb memory into invention so that the history of an object is identified in the history of a culture, to the point of being an integral and inseparable part of this.

He then goes on to clearly focus on the need to share intentions with the society in which the ideas materialize, so that they are not perceived as foreign bodies,

here the individual creator merges with the society from which he emanates and gives it an immediate representation. Individual memory becomes collective memory and serves as a link between the many inventions; so that it is indispensable to found the roots of new objects (and ideas) in the terrain of history without which the masses will never be able to feel like participants in the acts of individuals and individual emergences will have no communication to establish a plausible conversation even among themselves. Cities all over the world, especially those with more intense and rapid renewal works, are unable to form a characteristic unit, because in Tokyo and Rome the same buildings sprout without any respect for the pre-existing environmental ones, that is, of the specific character of their culture: they are artificially cultivated plants, transplanted without any concern for the climate, which distort the panorama of art as much as those of the landscape.

(Rogers 1968, 144)

This lucid vision of the condition of contemporary architecture is still very relevant today; thus, the problem of the estrangement of today's city and the disorientation of its inhabitants, even after more than 40 years, do not seem to have found a solution. On the contrary, much of the architectural culture has made this objective situation its guiding principle. The unanswered questions that Rogers' theoretical assumptions generate necessarily serve to question why these are still extremely topical today.

The sharing of a form, its recognizability, but at the same time its evocative capacity, should be for the community the contribution necessarily due to the search for meaning and belonging, in contrast with today's perception of a "fluid and elusive" reality without reference points. The transformation and continuous reinterpretation of the urban fact are the revolutionary data of this examination. If what Zygmunt Bauman claims about contemporary society is true, we are dealing with a rationality whose characteristics consist

in not being imprisoned by the legacy of one's past, wearing one's identity of the moment as one wears a shirt, which can be readily replaced when it becomes useless or out of fashion, rejecting the lessons of the past and abandoning the skills of the past without inhibitions and without regrets,

because the "liquid-modern culture no longer presents itself as a culture of learning and accumulation" but "rather appears as a culture of disengagement, discontinuity and forgetfulness" (Bauman 2004, 145), hence the need to take a position in favor of the search for permanent and transmissible values of the architecture of the city, of its memory and its history. A memory, a tradition that must necessarily be constantly reinterpreted and not be a sentimental object of self-pity for an ideal world that is now lost. Just as what Karl Scheffler wrote about Heinrich Tessenow in his *Die Architektur der Großstadt* (1913) on this subject does not seem to have lost its relevance: "it has tradition in its blood, it carries it within itself, not in the brain; tradition is a vital rhythm in it, not an aesthetic choice" (Scheffler 1998, 16).

This path in search of sources for the clarification of an operating tradition necessarily passes through the study of the urban ensembles' becoming in which the space of relationship, the collective space, is, and has been, the prerogative of the specific communities that formed it. The attention paid to public places has a 1,000-year history, and the first affirmations in the Greek era and then the Roman one will remain the founding assumptions of all the Western architectural theories to follow. The ancient city found its most evident form of expression and definition of itself precisely in the creation of streets, squares, and monuments within an urban design made up of buildings designed for their mutual exaltation in which the civic reality mirrored itself through the same. It is in the classical world that, thanks also to the concept of *urbanitas*, that is, civilized living, precise strategies were consolidated capable of giving shape and creating urban hierarchies with extraordinary results that we all know and that, starting from the built or theorized cities, made the formation of the realities in which we live possible (Owens 1991). So it is precisely for the fact of living in these that the most vital impulses have been inherited, to discuss their contents but, above all, through this extraordinary permanent construction site, to experience the goodness of the solutions adopted through the many constructions built.

In his lecture *Über moderne Baukunst*, Hendrik Petrus Berlage insists on the need for an architecture that does not base its essence on subjectivity and thus, taking up the assumptions of a writer, reaffirms the need to search for the universality of architecture:

There will come a time when those who have put their art at the service of the community and in whose labors and in whose soul a new love for humanity has vibrated, there will come a time when they will form a unity in which all that was particular will flow into the universal: into that universal which makes beauty so much higher. From this it follows, among other things, that the more universal the beauty, the less it will be necessary to discuss for reasons of taste. In fact, beauty exists only in ourselves, and is therefore relative; and when we turn to the particular, beauty also follows the same path. Spinoza says that beauty is a concept proper to human beings and therefore it is not a prerogative of certain objects. This universal character finds its place today, as in the past, in simple and natural constructions.

(Berlage 1985b, 119)

The search for a universal language that rediscovers its reasons in the particular appears extremely topical today; the expressive babel surrounds or sometimes constructs our urban realities, demolishing, intervention after intervention, the aspect of formal unity and uniformity that characterized the historic city. This dramatic transformation was authoritatively observed by Pier Paolo Pasolini who, in his famous documentary on the shape of the city, noted:

I chose a city, the city of Orte [...], I chose the shape of a city as a theme, the profile of a city. [...] I chose a shot that previously showed only the city of Orte in its stylistic perfection, that is, as a perfect, absolute form, and that's more or less the shot; it is enough for me to move this thing here, in the camera, and lo and behold, the shape of the city, the profile of the city, the architectural mass of the city is cracked, is ruined, is marred by something foreign, which is that house that you see there on the left. Do you see it?

(Pasolini 1973)

A similar observation made about 60 years earlier by Adolf Loos regarding the inability of contemporary architecture to relate to the landscape and the city reveals a general inadequacy of architects to intervene on the territory or on the city without distorting its whole:

The sky is blue, the water is green and everything is profound peace. The mountains and the clouds are reflected in the lake and so are the houses, courtyards and chapels. They seem to stand there as if they were not created by the hand of man. As if they had come out of God's workshop, like the mountains and the trees, the clouds and the blue sky. [...] But what is there? A discord sneaks into this peace. Like a useless squeal. Among the houses of the peasants, which were not built by them, but by God, there is a villa. The work of a good or a bad architect? I don't know. I only know that the peace, the stillness and the beauty are already gone.

(Loos 1980, 241)

The answer to the question regarding the inadequacy of contemporary architecture is perhaps to be found in the precise desire not to want to read the repertoire that founded its disciplinary corpus. The city therefore is a treatise on architecture, made up of stately examples and anonymous and simple artifacts, which nevertheless reveal the history of a specific community. As Pasolini clearly remarked, there must be multiple levels of interpretation of a building and therefore even those small signs left in the territory assume extreme value, such as the cobbled river path filmed in his documentary and commented on when he says:

It is a humble thing, it cannot even be compared with certain wonderful works of art, of maestros, of the Italian tradition. And yet I think that this small street of nothing, so humble, must be defended with the same persistence, with the same good will, with the same rigor, with which one defends the work of art of a great artist.

The defense of the city built by unknown authors of the history of architecture derives from the elementary observation of the concretization of an indisputably absolute form reached in the city of Orte, by virtue of a condition governed by a homogeneity of intent and, to quote Berlage, of a universal unity. Later, in fact, Pasolini goes on to underline the collective value of architecture:

Nobody would fight rigorously, with anger, to defend this thing and I have instead chosen to defend it. [...] I want to defend something that is not sanctioned, that is not codified, that no one defends, that is the work, let's say, of the people, of an entire history, of the entire history of the people of a city, of an infinity of unimportant men who however worked within an era that then produced the most extreme and absolute fruits in works of art and author. [...] Whoever you talk to, he immediately agrees with you in having to defend [...] a monument, a church, the facade of the church, a bell tower, a bridge, a ruin whose historical value is now established, but no one realizes that what must be defended is precisely [...] this anonymous past, this nameless past, this popular past.

(Pasolini 1973)

Despite the awareness of the current impossibility of a recomposition of the fragments into a *unicum*, if not for parts of the city, the architectural vision should be closely linked to

the knowledge of the real architectural fact and not just the abstract. We should move in this direction to find within the built city, in other words within its constitutive logic, the source of continuous inspiration and stimulus for new urban prefigurations that refer to it, without seeming to be a copy or, conversely, foreign body. Therefore, one should aim at the creation of urban scenes capable of constantly grasping the intangible secret of the relationships present between the spatial devices of the city and its architecture. Once again it is Ernesto Nathan Rogers who gives methodical indications about the necessary dialectical relationship between the city, its history, and its contemporary interpreters. The same noun “continuity” used to distinguish his *Casabella* places its position within a precise choice of field that on the one hand clears any possibility of misunderstanding but on the other does not elude the complexity of the problem. In a programmatic way, his thinking and teaching have given body and substance to a school – not only Italian – which has taken up his threads of reflection on the dynamics of the city. The urban phenomenon should be studied in a progressive perspective and observed, as Rogers identifies, as a set of logical structures in which the sense of tradition gives life to an expressiveness whose foundation “is the composition of ever new yearning to grasp the essential nature of the architectural reality, which concretizes those different relationships” (Rogers 1958, 22).

So it is the built inheritance, with its form or its building materials, in which everything had a strong relationship with the meaning that a particular architecture wanted or had to express. This wanting to continue to build an architectural place in constant dialogue with history so that it can still be named as such – that is, a place for which terms such as street, square, or palace can still be used – is neither a trivial operation nor as obvious as it might hastily seem. The danger of which it is easy to be victims is evident, that is, to fall into what has already been said, to renounce the invention, understood in its Latin meaning, of finding by investigating. Invention, then, is a fundamental means in finding fragments of a mistreated language present in the city but still intelligible, alive, and in any case belonging to contemporary society. The search is to find the unspoken aspect of places according to a “principle of revelation” always and in any case guided by a precise corpus of rules made available by the experience of the architecture, be it the great masters or anonymous master builders. Perhaps the compositional principle lies in the ability to be amazed by the normality of things, similarly to what Giorgio de Chirico observed:

a truly immortal work of art can only be born through a revelation. Schopenhauer has perhaps best defined and explained (why not?) such a moment at the point in which in *Parenga and Paralipomena* he says: “To have original, extraordinary and perhaps immortal ideas, one has to isolate oneself from the world for a few moments so completely that the most common occurrences appear to be new and unusual and thus reveal their essence.” If instead of ideas, you imagine the birth of a work of art (painting or sculpture) in the mind of an artist, you will have the principle of revelation in painting.

(Calvesi 1981, 11–12)

This compositional procedure of revelation, as outlined by de Chirico, can perhaps be adapted to architectural research in which the devices of civic urbanities are relived with an apparently pragmatic detachment in order to build renewed and unprecedented architectural structures in the city.

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10

VENICE AS A PARADIGM

Urban Studies and the Value of Emptiness in the City's Design

Giovanni Marras

This chapter will focus on the value of emptiness and the instrumental role of urban studies in architectural design, critically reconsidering certain modes of interpreting the city which matured starting from research on the urban form of Venice.

Venice as a text, a pretext or, simply, a place of choice – a royal city of stone and brick made of built islands but also an ideal city made of paper, a vision of the mind's eye of architects, geographers, writers, art historians, and philosophers.

Venice as a paradigm to be questioned and a pretext for a “Venetian” approach to the architectural project that is intertwined with the events of the Royal Higher Institute of Architecture, the second school of architecture in Italy after that of Rome, inaugurated in Venice in November 1934.

For a certain Italian architectural culture, the city and the landscape were the foundation of a design approach based on the relationship between urban morphology and building typology.

Text, context, pretext, are terms that have had a significant weight for the Italian architectural culture of the last century, and in the context of a daily theoretical elaboration, have been recoded and agreed over and over again and have assumed relevance also in the international context.

The School of Venice

Building the city starting from a “scientific” knowledge of the city was the hallmark of a certain design approach that

Does not call into question the neon, the ephemeral and the fast, but wants to reaffirm the secular substance of architecture, the importance of looking at certain characteristics of the past and not claiming [...] to give rise to what is suitable for our time only from a preconceived opposition to the past, or from an equally preconceived ideology of the past [...].

(Tentori 1994, 8)

Experiments, studies, and research that can be traced back to “a particularly intense creative moment at the University Institute of Venice” (Tentori 1994, 8) that Francesco Tentori – referencing the more well-known *Learning from Las Vegas* – identified with the motto *Learning from Venice*.

The teaching at the Higher Institute of Architecture in Venice initially leaned toward a certain architectural traditionalism typical of the cultural environment of the academy of fine arts from which it originated but began to undergo a progressive and inexorable change in cultural orientation under the lengthy direction of Giuseppe Samonà.

Giuseppe Samonà was born in Palermo, Sicily in 1898 and studied engineering. He opened the 1945/1946 academic year (his first year as the Institute’s director and the first after Italy’s liberation) with a “report” in which he established the start of a renewal based on the conviction that “Every architectural theme [...] to have deep roots in life, always requires a deep investigation of the environment, a social investigation that must be analytically extended with meticulous care” (Samonà 1946, 4). In the same speech, taking leave of his predecessor Guido Cirilli, Samonà enunciates the key words of a new “revolutionary” didactic approach between the lines:

Maestro of living stones, an expert in solid masonry, a perfect marble cutter [...] As a Maestro he knew how to give the School the best of himself; rather than cultural problems he spoke of the living technique of matter, of walls, of proportions. He materially preferred to draw on the pupil’s tablet to concretely show how to make architecture with marks rather than with words.

(Samonà 1946, 4)

Marks and words, in antinomian contrast, will instead be the characterizing trait of a new way of conceiving the study of architecture.

Trincanato wrote, “Samonà began to revolutionize this academic method, giving lectures on ‘something’ that was not, however, remotely the history of art, but the history of the architectural object [...] a teaching of architecture ‘touched with the hand’ [...] object by object [...] Direct surveys were carried out while he demonstrated, through these lectures, the value of the unity of a building from the point of view of the urban scene [...] It was absolutely not art history [...] it was really a study of the architectural organism” (Trincanato 1997) in the city of Venice.

A way of understanding the study of architecture in which, yes, “technique is [...] the foundation of even more spiritual and poetic disciplines such as composition” (Samonà 1950, 1) but with a markedly different accentuation from those “technicalities” and “functionalisms” of that sort of “new academy” that was being formed in those years in the international arena. Even before coming to Venice in 1935, with the book *La casa popolare degli anni ‘30* [Social housing of the 1930s] (Samonà 1973), Giuseppe Samonà distanced himself from a certain “internationalism,” highlighting the abstract and theoretical character of research on rational housing, with respect to the problem of social housing in the context of the urban transformations of the present.

The re-foundation and cultural renewal of the University of Architecture of Venice therefore started from the real city. In fact, the training of the architect-student had to be marked by

a greater contact with life, with the problems arising in the center and in the region where [they] carry out their studies [and] the disciplines [...] must be made less abstract by testing their instrumental power on real everyday building problems.

(Samonà 1950, 4)

Giuseppe Samonà gave an opening lecture for the 1953 academic year entitled, “Need for a study of Venice for the urban planning of its modern needs” (Samonà 1978) in which he reiterated the importance of a single theme for composition courses, with the objective of offering a study of the city, in view of the drafting of the new urban plan.

Ignazio Gardella confirms that this point of view was also reflected in the “enrollment policy” (Zucconi and Carraro 2011, 14) of IUAV, where Giuseppe Samonà wanted “educated professionals” (Monestiroli 1997, 71) to teach composition: Franco Albini, Ludovico Barbiano di Belgiojoso, and Ignazio Gardella himself, and Giovanni Astengo for urban planning and Bruno Zevi for history.

Venice, the lagoon, and its hinterland would be the living laboratory in which IUAV took shape as “something new and in any case different, compared to the traditional conflict between the Beaux Arts side and that based on a physical and mathematical approach” (Zucconi and Carraro 2011, 17) or rather a way of understanding the design as being capable of measuring up with the city in its context of large-scale relations, contemplating loans and contaminations with other disciplines: philosophy, geography, literature, economics, anthropology, and so on.

A slow process of re-founding the School destined to settle into a “tradition” of studies and research which, beyond Venice understood as the starting and ending point of the teaching and planning action of teachers and students, was destined to spread in a wider context as a cultural approach to architectural design based on the knowledge of the city and the landscape.

Venice as a Paradigm

With its complex inlay of islands and canals surrounded by water and lagoon coasts, the bird’s eye view of Venice carved on pear wood boards by Jacopo De Barbari in 1500 was for Egle Renata Trincanato the certain body on which to verify a first hypothesis of the nuclear morphogenesis of Venice which, based on a meticulous analysis of the urban morphology of that *Venezia Minore* [Venice Minor] that in the “planimetric scheme [...] still reflects a large part of the ancient spatial configuration” (Trincanato 1948, 35), highlights the island matrix of the city drawn by the water and built for the subsequent interments of the emerged lands and sandbanks. The large layout of the typical plans of Venice presents an inexhaustible sequence of ways of transforming the boundary between land and water into architecture. Yet in the extreme variability of the modes, it seems possible to identify constants in that “densely structured magma of wrinkled matter with certain emergences” (Samonà 1970, 9) in which the mixtilinear course of the entirely built single islands, while obeying rigorous principles, nevertheless escapes the Cartesian stiffness of the right angle. In the same way, the great “empty spaces” of Venice (the fields), which are the result of a process of building the islands that consolidate starting from the edges, are affected by that liquid matrix underlying the city (Figures 10.1 and 10.2).

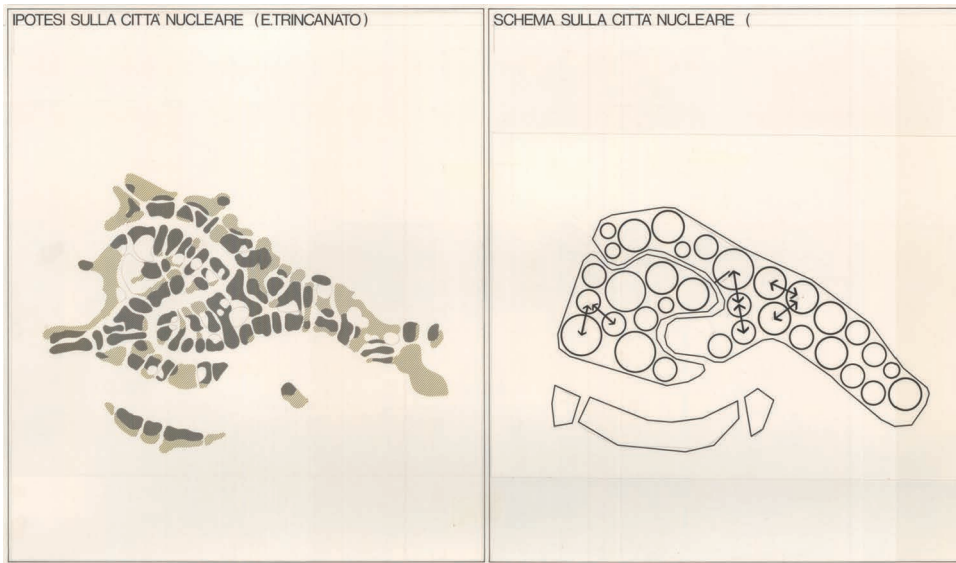


FIGURE 10.1 E. R. Trincanato, *Hypothesis on the nuclear city*, s.d., Projects Archive – IUAV University of Venice, E. R. Trincanato Collection.

Saverio Muratori, who came to IUAV in 1950 with the students of the distributive character courses of buildings, also attempted to decipher the settlement phases of the morphological structure of the Venetian insulae in relation to the typological invariance of the artifacts. But for Muratori, Venice was above all a pretext for focusing on “a conception [...] of the type and of the building fabric as an organism and of the urban environment as a work of art” (Muratori 1960, 7). Using analysis tools, Muratori intended to penetrate the “mechanisms” of the city’s growth, understood in “its integrity and totality of living and operating fabric” (Muratori 1960, 8), on which one can only consciously insert himself. Insula after insula, Muratori consolidated this awareness through “that genetic and historical knowledge of efficient realities [...] with which to collaborate” (Muratori 1960, 8), using design tools to reproduce in vitro those generative processes studied from reality. As proof of the breadth and operational value of such a cultural orientation, Muratori cited a “planning activity conducted in parallel with these studies” and precisely the

winning project of the Competition for the new C.E.P. District, for the urban expansion of Venice on the inner lagoon coast where the functional principles adopted experimented with the current insertion in the historical environmental framework with undeniable success after competing technical attempts.

(Muratori 1960, 8)

Given that for Muratori, “Historical judgment is therefore already operational judgment, an action plan, urban plan and [...] history is doubly necessary as information and as education in the formative values of reality” (Muratori 1960, 10), however, the redundancy of the



FIGURE 10.2 Venice, Graphic reworking starting from the Venice standard floor plan, 1989, City of Venice, Town Planning Department.

three settlement hypotheses presented in the competition remains inexplicable, highlighting a misunderstood generative automatism between urban analysis and architectural design.

A productive season of research on urban morphology, which coincided with a particularly intense first phase of construction of IUAV, was followed by an equally intense season of design competitions on Venice in the second postwar period that alternatively involved as competitors and/or as jurors a conspicuous number of the School's teachers: the Competition of ideas for the General Town Plan, 1957; the aforementioned Competition for the CEP District at Barene di San Giuliano, 1959 and that for the New Hospital of Venice to be built at the gates of the island city, 1963; the International Competition for the drafting of the urban volumetric plan for the Nuova Sacca del Tronchetto, 1964. The events of these competitions, which intertwined with those of the School for various reasons, were widely echoed in the pages of the magazines of the time, fueling the debate on the inclusion of modern architecture in "historic centers."

Urban Studies as a Tool, Emptiness as a Value

The project for the New Hospital of Venice, characterized by the motto *Tadzio* and presented by the pupils¹ of Giuseppe Samonà – who received “the implicit solemn commendation of ‘citation’ from the subsequent design by Le Corbusier” (Tentori 1994, 21) – and that for the Nuova Tronchetto island, distinguished by the motto *NOVISSIME*, signed by Samonà himself as group leader,² express a considerably different point of view with respect to the strategies implemented by Muratori (Figures 10.3–10.5).

In both projects, “knowledge in terms of geography and urban morphology of the city structure” (Samonà et al. 1964, 11), rather than determining the morphogenetic development of the city by orienting its growth, highlights *emptiness* as an “essential factor of the city's character” (Piccinato et al. 1965) and as a contrasting element of instrumental value in highlighting the new architectures and the constituent parts of the historic city with their own identity.

In particular, the *NOVISSIME* project awarded a special mention in the competition for its explosive character – as the juror Astengo defined it – from a “strictly cultural point of view [...] radically proposes to bring the city back to its eighteenth-century appearance” (Samonà et al. 1965). The illustrative report of 15 typewritten pages,³ which leaves no doubts as to the proposal's radical nature, precisely outlines the system of infrastructural nodes at the foundation of a new large-scale territorial framework for Venice consisting of its lagoon hinterland.

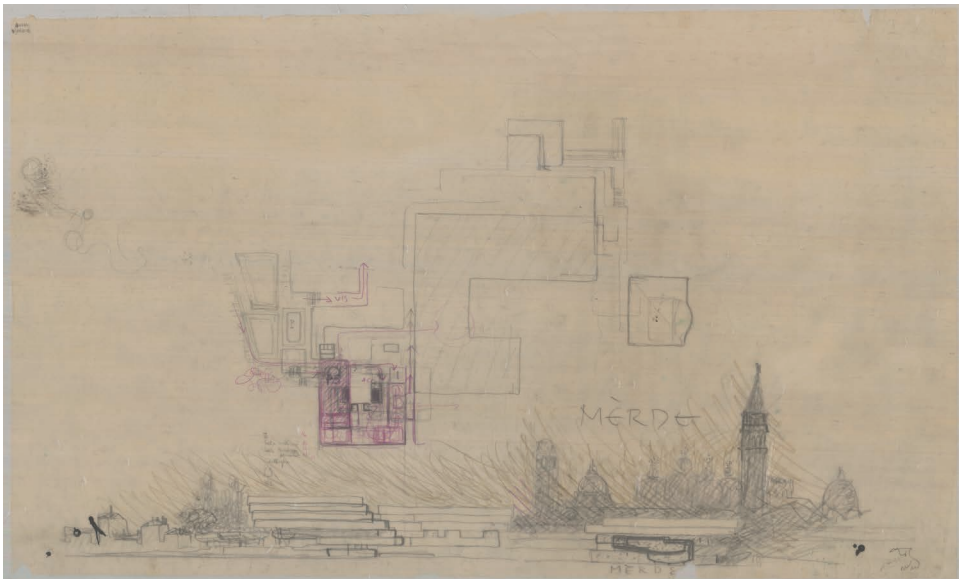


FIGURE 10.3 Romano Chirivi, Costantino Dardi, Emilio Mattioni, Valeriano Pastor, Luciano Semerani, Giorgio Zecchi (health consultant), New Civil Hospital of Venice, Motto: *Tadzio*, study design, plan, and side elevation, 1963; copy from the Projects Archive – IUAV University of Venice, Projects Archive Collection.

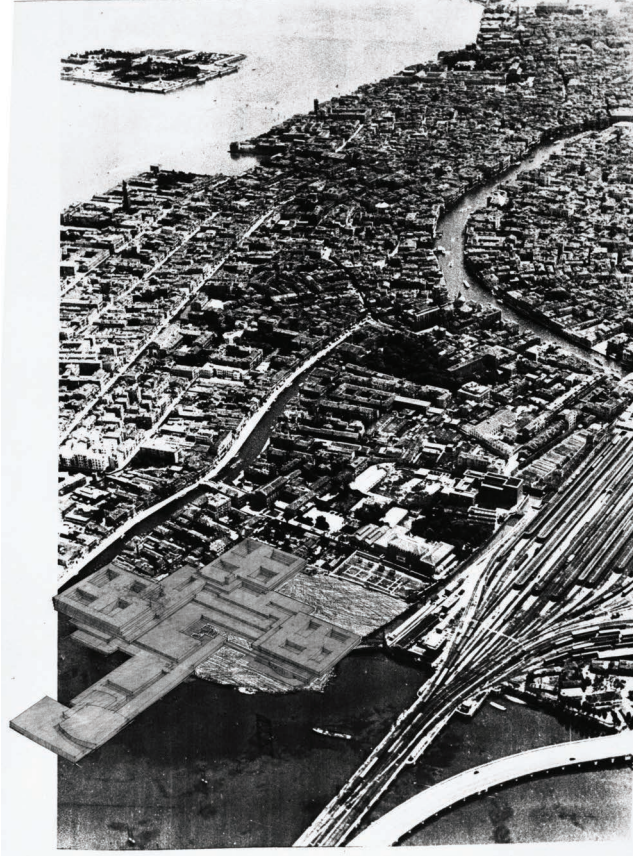


FIGURE 10.4 Romano Chirivi, Costantino Dardi, Emilio Mattioni, Valeriano Pastor, Luciano Semerani, Giorgio Zecchi (health consultant), New Civil Hospital of Venice, Motto: Tadzio, photomontage from a bird's eye view, 1963; copy from the Projects Archive – IUAV University of Venice, Projects Archive Collection.

The *urban restructuring* table highlights the shape and position of the new parts of the city: the two large islands/building and the convent of Santa Chiara, restored to its original insular nature, define a water space antimetric to St. Mark's basin which is configured as a new urban gateway to the mainland (Figure 10.6).

The definition of this “precise western front involves a large excavation in the Campo di Marte area in addition to the suppression of part of the docks of the Maritime Station Basin” (Samonà et al. 1964, 7), consistent with a “new interpretation of the city as a system of compact nuclei alternating with empty spaces of a conservative nature” (Samonà et al. 1964, 9).

Large parts of the *dying* urban fabric are physically abraded from the map because “in a first approximation, the interruption of growth would then coincide with an act of emptying the superfetation areas where [...] the ‘growth itself’ occurs, indeed with pathological aspects” (Samonà et al. 1964, 7).

In fact, the design envisages “the ‘stripping’ of the borders of Venice” (Tentori 1994, 46). Egle Renata Trincanato had unsuccessfully tried to moderate *this emptying*:



FIGURE 10.5 Giuseppe Samonà, Costantino Dardi, Emilio Mattioni, Valeriano Pastor, Gianugo Polesello, Alberto Samonà, Luciano Semerani, Gigetta Tamaro, Egle Renata Trinacato, Novissime: international competition for drafting the urban and volumetric plan for Nuovo Tronchetto Venice, 1964. Aerial view toward west with the new basin of Santa Chiara, photomontage, Projects Archive – IUAV University of Venice, Alberto, and Giuseppe Samonà collection.

especially Gigetta Tamaro Semerani, [...] was so enthusiastic about this proposal [...] that she would not have been satisfied with returning to the eighteenth-century profile, defined in the map by Lodovico Ughi, but would have liked to go back to the outline of the de' Barbari plan!

(Tentori 1994, 46)

In the final draft, the project envisaged the excavation of over 700,000 square meters of emerged land and the emptying of over 250,000 square meters of insular soil from “superfetation and [...] incongruous sedimentation” (Samonà et al. 1964, 11). Near the present bridgehead, “all the post-eighteenth century incrustations” (Sammartini 1964) are canceled. The “well-founded urban theory” (Rossi 1964, 4) that guided the scalpel and the bulldozer of *NOVISSIME* drew scientific sustenance precisely in that “series of studies and attempts [...] which find an important centre in the University of Venice” (Rossi 1964, 4). A

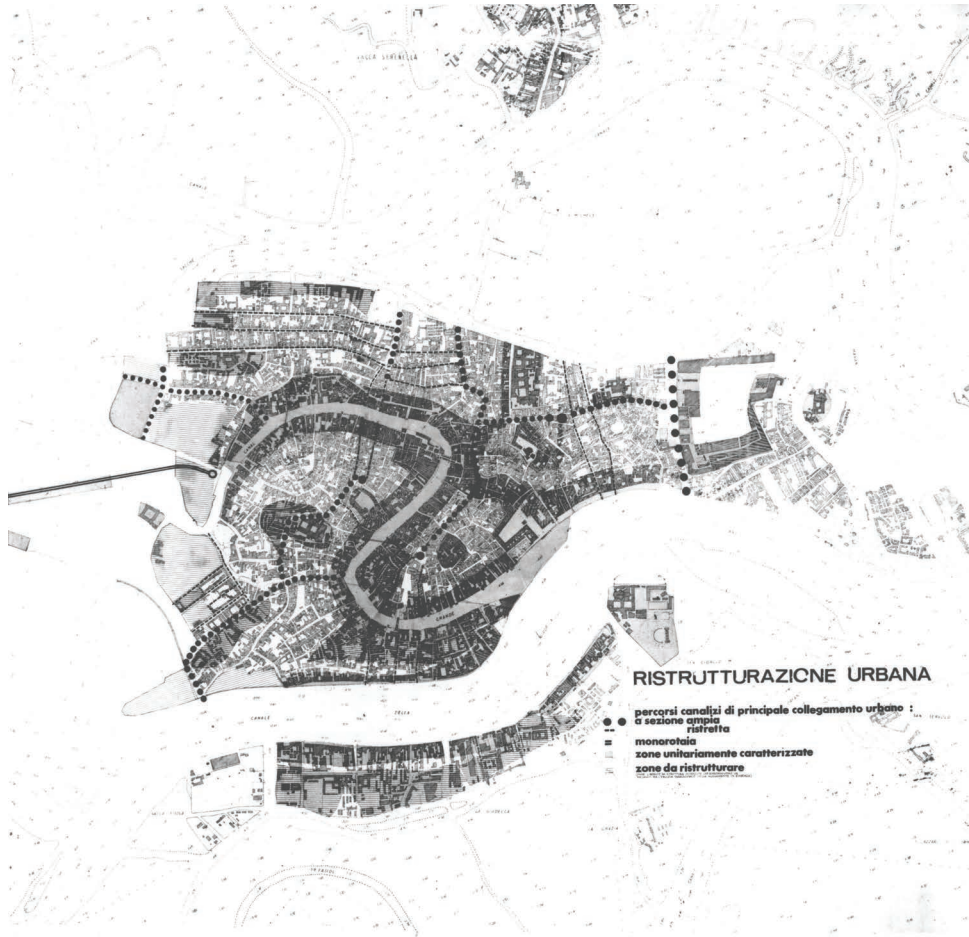


FIGURE 10.6 Giuseppe Samonà, Costantino Dardi, Emilio Mattioni, Valeriano Pastor, Gianugo Polesello, Alberto Samonà, Luciano Semerani, Gigetta Tamaro, Egle Renata Trincanato, Novissime: international competition for drafting the urban and volumetric plan for Nuovo Tronchetto Venice, 1964. Project table: “Urban Restructuring,” Projects Archive – IUAV University of Venice, Alberto and Giuseppe Samonà Collection.

very well-defined position emerges from the design report that places the urban analysis at the base of a judgment on the different constituent parts of the city, attributing to the emptiness, like the new architectures, the role of specifying the function and character of the existing city (in a manner as provocative as it was prophetic if referred to our present time), identifying a “genealogy” of urban studies and compositional research destined to spread and develop in the years to come.

And if from the historiographical point of view, “Whether there is an ideal *fil rouge* connecting Samonà and Trincanato to subsequent developments is a question to be demonstrated [...]” (Zucconi and Carraro 2011, 16), it is a fact that – as Aldo Rossi later wrote – starting from *L’urbanistica e l’avvenire della città negli stati europei* [Urban Planning and the

Future of the City in the European States] by Giuseppe Samonà, the studies on architecture would find their foundation in the

city seen for the first time in its entirety, [...] in its continuous line of evolution; [...] The city [will become] a fact, and a fact of such importance that it will have to be constantly reckoned with; also and above all from the point of view of architecture.

(Rossi 1968, 135–136)

The Theory of the City by Parts

In many ways, Giuseppe Samonà's book would sanction this "urban" connotation of architectural design, attempting to critically establish a bridge between the methodological/typological and functionalist/parametric approach of the Modern Movement with the problems of reconstruction and the new in the Italian and European city.

The objective of investigating "how the foundations of a theory of the city can be the foundations of a new architecture" (Rossi 1968, 136) is the underlying theme of the series of lectures on the *Theory of architectural design* (Samonà 1968) promoted by Giuseppe Samonà at IUAV in the winter of 1966, which compares the positions of "eight scholars" on the subject: Guido Canella, Mario Coppa, Vittorio Gregotti, Aldo Rossi, Alberto Samonà, Gabriele Scimemi, Luciano Semerani, and Manfredo Tafuri.

Some pairs of words, repeated like a mantra until consumption – analysis and design, typology and morphology, city and context – from the research initiated by Carlo Aymonino and Aldo Rossi on building typology and urban morphology (Distributive characters of buildings course, 1964/1965) to the 1969 publication of the *Gruppo Architettura*⁴ Architectural Theses (Gruppo Architettura 1969) represent the basis of a *familiar lexicon* destined to spread even outside the narrow Venetian circle as a distinctive element of a certain *scientific* approach to architecture starting from a theory of the city by parts.

The second of the *Gruppo Architettura* Design Papers (Gruppo Architettura 1970), dedicated to the National Competition of Ideas for the Detailed Plan of the Historic Center of Trieste, in the proposals presented by the groups of Gianugo Polesello, motto D2, and Luciano Semerani, motto GIOVANNA, and urban studies and "emptiness" (Marras 2019, 2)⁵ return to operate as tools of architectural and urban composition in the city by parts.

The *Gruppo Architettura*, in many ways an interference that originated from the collision of two entities – the duo of Aymonino and Rossi and the *Samonà system*, consisting of the maestro and his direct and indirect students – will explode in that sort of diversified archipelago that was IUAV starting from the end of the 1970s and in a kaleidoscope of poetic visions attributable to individuals.

A "School of Venice" (Semerani 1985) *ante litteram* in the summer of 1978, at the end of Carlo Aymonino's direction, once again placed Venice at the center of attention and called architects from European and American schools (Raimund Abraham, Peter Eisenman, John Heduk, Rafael Moneo, Bernard Hoesli, Oswald Mathias Ungers) to design the island of San Giobbe in West Cannaregio.

In the *10 images for Venice* on display, subsequently collected in the catalogue (Aymonino et al. 1980), the *scientific* instruments of the School emerged in the projects of the "Venetians" (Carlo Aymonino, Gianugo Polesello, Aldo Rossi, Luciano Semerani), and for many lines passed through, by reaction, the designs of the "outsiders," contributing to the dissemination

of a sort of Venice paradigm in which a scientific approach to the design of the city by parts and poetic incandescence of the images that can change its face, between mark and word, are the essential aspects of a heritage to be recognized and asserted.

Notes

- 1 Romano Chirivi (group leader), Costantino Dardi, Emilio Mattioni, Valeriano Pastor, Luciano Semerani, Giorgio Zecchi (health consultant); after ups and downs, in 1964 Le Corbusier was commissioned to draw up a feasibility study in the same area covered by the competition.
- 2 Giuseppe Samonà with Costantino Dardi, Valeriano Pastor, Gianugo Polesello, Alberto Samonà, Luciano Semerani, Gigetta Tamaro, Egle Renata Trincanato.
- 3 The Illustrative Report of NOVISSIME is fully published and translated by the author (Marras 2019–1).
- 4 Carlo Aymonino, Romeo Ballardini, Guido Canella, Costantino Dardi, Gianni Fabbri, Mauro Lena, Pierluigi Nicolini, Raffaele Panella, Gianugo Polesello, and Luciano Semerani, with different appearances deferred over time.
- 5 Giovanni Marras, “Il valore del vuoto. Gianugo Polesello nel Gruppo Architettura,” in AA.VV., *Gianugo Polesello. Un maestro del Novecento. La composizione in architettura*, Lettera Ventidue Edizioni, Syracuse, pp. 92–103.

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11

NATURE PREPARES THE SITES, BUT IT IS MAN WHO CREATES THE ORGANISM¹

Bologna through Its Geography, Its History, and Its Planning Tools

Valentina Orioli

History and Geography Shape the Urban Structure

In its origins Bologna summarizes the reasons for the spontaneous birth of an urban settlement and those for the voluntary creation of a city (Lavedan 1959, 18). In fact, if the city's site was inhabited since ancient times due to its characteristics particularly favorable to settlement, the present-day Bologna corresponds to a colony founded by the Romans.

Pre-Roman Bologna, whose birth dates to the 9th century BC, settled in a fertile plain, crossed by many rivers and yet sufficiently safe and protected to the south from the hilly slopes that form the Apennines. After the conquest of the Gauls, who had taken control of the territory from the Etruscans, in 189 BC the Romans established a colony called *Bononia* in the same area. Two years later, the consul *Marcus Aemilius Lepidus* completed the construction of the *Via Aemilia*, improving an existing foothills track. *Via Aemilia* connected the colonies from *Ariminum* (Rimini) to *Placentia* (Piacenza) and up to *Mediolanum* (Milan) and gave its name to the whole region (Dall'Aglio and Di Cocco 2006). It was part of a network of major roads that provided a safe way of traveling over the vast territory conquered by the Romans and ensured a connection with Rome, through the Po Valley and along the Adriatic coast, via the *Via Flaminia*. This network of consular routes was also the backbone of the *limitatio* system: a huge reclamation work, improving the distribution of water and creating at the same time a system of subdivision of rural areas into smaller plots, which were then allocated to the men who had served in the army.

Observing the imposing testimonies of ancient Rome during his *Grand Tour* of Italy, Johann Wolfgang von Goethe noted that the construction techniques of the Romans were of such great dimensions and power that they gave the impression of a landscape created by a "second nature, operating for civilian purposes" (Goethe 2017). As pointed out by Emilio Sereni (1993), this idea could certainly be extended to the network of Roman roads and to the pattern of the *limitatio* that is still clearly visible in many parts of Italian territory.

In the creation of the infrastructure network and in the choice of the location of the colonies, the Romans emphasized the strengths of the geography, highlighting some preexisting settlements and determining territorial patterns even after the end of the empire.

Throughout the region Emilia-Romagna, this superimposed “second nature” is so strong that it has determined, as a first layer in the territorial palimpsest (Corboz 1983), the evolution of the infrastructure system and the urbanization dynamics, including contemporary urban sprawl in the whole plain (Brighi 2010; Gabellini et al. 2012).

Even if the monumental vestiges of ancient *Bononia* are not still visible in the contemporary city, the imprint of Roman colony has determined the organization of the oldest part of the historic center, acting like a sinopia (Ricci 1980) for the successive Medieval development.

Bologna is located between two rivers that flow very close to the city center to the east (river Savena) and west (river Reno). The presence of water, the location near the hillside in a safe and prosperous part of the plain, and the position along the *Via Aemilia*, which was the most stable track of the regional road network, allowed the city to survive after the collapse of Roman Empire, when the benefits of a good geographical location were the essential factor for the permanence of the urban settlements.

During the Middle Ages, Bologna established itself as a flourishing city thanks to agricultural production and to the creation of the *Studium* (in 1088), the oldest university of the Western world, and also due to the development of the manufacturing industry. These functions were boosted by the presence of the *Via Aemilia*, which not only determined the role of the city as a crossroads between the center and the north of Italy but also by the positive influence of a wide network of canals and waterways, literally *built*, starting from the locks on the two rivers (Pezzoli and Ugolini 2014; Tozzi Fontana 2001).

In the present-day Bologna, the presence of a network of natural and artificial canals is hardly noticeable, especially in the historic center, where they have mostly been completely covered. However, the smooth running of the urban water network is a decisive factor for the environmental equilibrium of the city, and the hydraulic artifacts built along the waterways are a significant part of the historical urban landscape that has long awaited a specific recovery and valorization plan (Cervellati et al. 1980).

The historic fountains are a tangible sign of the presence of water in the city. The *Fontana Vecchia*, located along *Palazzo d'Accursio* walls, and the Neptune fountain, are also the testimony of a vital connection with the nearby hills. Indeed, the fountains and the ancient aqueduct of the city are fed by a collection system that brings the water from the hills into the *Cisterna di Valverde*, a water tank designed in the 16th century by architect Tommaso Laureti, which gave architectural form to the hydraulic system conceived by the scholars of the Bolognese *Studium* (Tuttle 2001; Tuttle 2015; Gaiani 2017; Ferretti and Ceccarelli 2018).

These and other interventions for the construction of public spaces and monumental buildings took place in an urban fabric with overall defined morphology established during the Middle Ages and strongly influenced by the subsequent development of three different circles of walls, as well as by the course of roads and waterways.

The oldest structure, known as the “selenite walls,” was built of stone blocks in the early Middle Ages. The walls surrounded only a part of the original Roman grid of *Bononia*. This retraction of the city conditioned its development also in the following centuries, establishing a fundamental difference between the parts of the historical urban fabric to the west and east of Piazza Maggiore.

The selenite enclosure, characterized by four crosses placed at the walls’ angles, was enlarged after the conquest of the city by Liutprand, King of the Lombards, and the community of Lombards settled near the walls in the area of the church dedicated to the cult of

Saint Stephen. The Lombards set the limits to this addition through a semicircular fortification, whose imprint is still clearly visible in the radial road pattern of the area.

The repopulation of the city from the 10th century and the city's growth as the seat of the *Studium* and as a center for agricultural and manufacturing production led to the construction of a second belt, called *Torresotti* or *Cerchia del Mille*, according to the time of construction. This second belt, which was 3.4-km long, had 18 gates, 4 of which still exist today. In 1183, the Treaty of Constance put an end to the struggles, in which Bologna had actively participated, against the domination of Frederick Barbarossa. After the treaty, the city grew quickly. At the end of the 13th century, Bologna had reached 60,000 inhabitants: it was the fifth largest city in Europe by population, after Cordoba, Paris, Venice, and Florence, and, with Milan, the largest textile manufacturing center in Italy. After the completion of the *Torresotti* circle, further space was immediately needed to allow for urban expansion. The new circle, called *la Circla*, built in the 14th century, was 7.6 km long and had 12 gates with drawbridges and was surrounded by a moat. Modified several times, this large circle of walls was demolished between 1902 and 1905 to allow for the development of the new urban plan approved in 1889. Only 10 of the gates and some sections of the walls are still visible today (Figure 11.1).

The succession of city walls allows to identify different parts of the city with different morphological characteristics. The selenite belt and the Lombards extension originally corresponded to the oldest and densest part of the city, including many towers and tower houses, and with a clear predominance of private spaces over public spaces: a “patrician city,” with entire urban blocks “close,” due to the houses faced mostly on interior courtyards and often interconnected by aerial walkways above the streets.

The population growth that had led to the construction of the *Torresotti* circle also produced other house extensions, often using “porticoes,” to gain space above the streets. Even though the creation of these arcades is therefore generally described as a “disrespect of building regulations,” their presence in the city of Bologna, on the contrary, provided the basis for the first rules applied to urban public space. With the Municipal bylaw of 1288, in fact, it was established that all houses must be equipped with “porticoes,” the height and width of which were fixed at 7 Bolognese feet (2.66 meters), so as to easily allow through a man on horseback wearing a hat. Subsequent regulations were introduced to modify the dimensions or indications on the construction materials to be used (from wood to stone), in order to make these spaces safer and more functional (Bocchi 2019). Since 1288 to this today, no new regulations have ever been introduced to modify these fundamental characteristics of such private spaces, which are necessarily open to public use. Today, Bologna has porticoes situated along a stretch of 42 km inside the historic center, and 62 km throughout

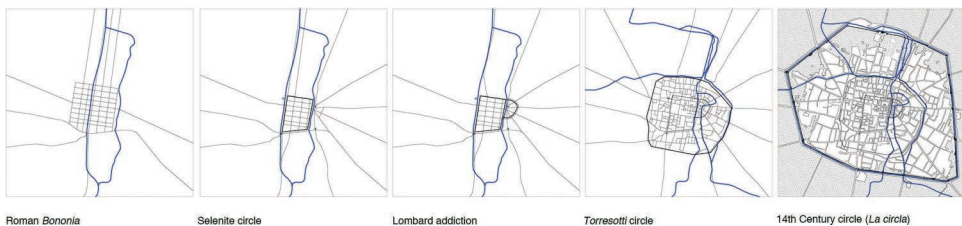


FIGURE 11.1 The city walls of Bologna, design by Martino Giani, 2019.

the city, providing a network of protected but open pedestrian paths, expressing the social life of the city.

Until the end of the 19th century, the city of Bologna developed within the boundaries of its 14th-century walls. In fact, this enclosure outlined a very large area of more than 400 hectares, which until this time had not been completely filled with buildings. The city was densely built up at its inner center, corresponding to the *Torresotti* circle and along the main roads, but the density reduced progressively, to include many gardens, and even rural spaces, in the farther parts of the urban area, close to the ramparts.

The vital connection between the site and the city, and the main characters of urban structure outlined so far, are at the basis of the vision of the future proposed by contemporary planning tools.

The presence of water and natural elements in the city is reinterpreted today in a different, broader environmental perspective. It is no coincidence that it is the basis for the strategies and actions of the Climate Change Adaptation Plan approved in 2015 (Barbi et al. 2016). The quality and the management of open spaces have become increasingly important in public policies (Evangelisti 2012, 2017; Ginocchini, 2016), and along this line new planning paths have been developed, complementing the more traditional trajectories of urban planning, until the recent candidacy of the Porticoes to the UNESCO World Heritage List.²

Environmental goals and the preservation of historic urban landscape are at the base of the urban regeneration strategies of the new General Urban Plan adopted in 2020.³

Planning over the City Walls

The overcrossing of the city walls thresholds planned through the *Piano regolatore e di ampliamento* designed by Edoardo Tubertini in 1889⁴ (Scannavni et al. 1988) was not determined by the need to urbanize new areas to cope with population growth, but rather, as in many other Italian cities (Zucconi 2004), by the changed socioeconomic and political context and the progressive “opening” encouraged by the advent of new communication systems. In 1851, an international agreement started the construction of a railway line through central Italy,⁵ and later, the national network was developed and completed after the unification of Italy (1861).⁶ The arrival of the railway line and the construction of the train station in Bologna reinforced the historical role of the city as a “crossroads,” creating the conditions for a new era of industrial development, thanks to the presence of the railway which began to replace the ancient roads and waterways as the essential transport and communication system, as had been the case since the Middle Ages (Figure 11.2).

The Urban Plan of 1889 concentrated the manufacturing and craft activities connected to the presence of the railway in a new urban area to the north of the railway station. The urban extension of Bologna, and particularly “La Bolognina,” was designed according to the same principles that characterized the most important experiences in 19th-century urbanism in European cities, putting in place “a new concept of city, (...) that responded to the new liberal-rational order and whose values were those of the new machine age civilization” and “a new methodological attitude (...) based on the identification in the city construction process of an initial moment of planning, of the subsequent phases of urbanization and construction” (Solà-Morales 2010, 37–38).

Built according to the first modern Urban Plan and then subject to frequent modifications by virtue of a dynamism that is explained by its pivotal position between the historic

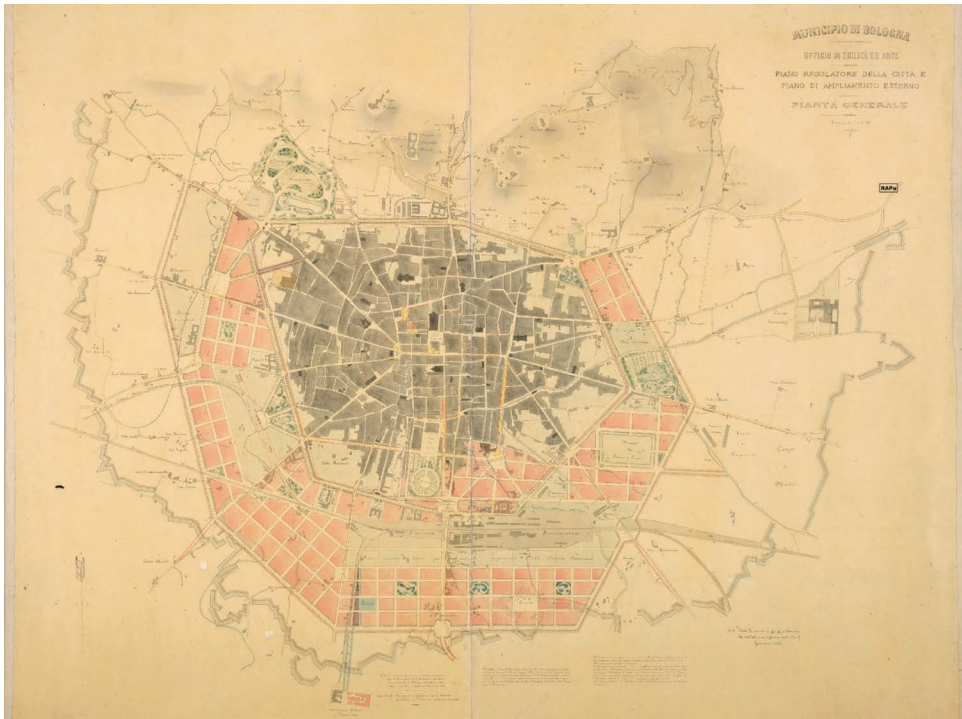


FIGURE 11.2 Municipio di Bologna, *Piano regolatore della città e ampliamento esterno. Pianta generale*, 1889.

urban center and a wider world connected to Bologna by rail, *La Bolognina* shows very well the subsequent transformations related to the evolution of planning. The part of *La Bolognina* actually built according to the plan of 1889 corresponds to the urban area located between Via Carracci, Fioravanti, Bolognese, and Matteotti. This area of the city, developed on a grid of regular blocks of 100×140 m, welcomed the first flows of immigration to Bologna and possesses even today a significant concentration of “historic” social housing. In the western part of the area, the city’s new fruit and vegetable market began to develop in the 1930s, on a site with the advantage of its proximity to the railway network and in particular to Arcoveggio station. In the first postwar General Urban Plan, adopted in 1955, the area is classified as a “market expansion zone,” and indeed the construction of the market, interrupted by the Second World War, was completed during the 1950s. The General Urban Plan accorded to the market the possibility to extend up to $250,000 \text{ m}^2$ (Comune di Bologna 1964, 54; Figure 11.3).

The displacement of the market already foreseen in the General Urban Plan adopted in 1970 became a reality following the implementation of the successive 1985–1989 plan,⁷ with the effective relocation of this function in the new *Centro agro alimentare bolognese*, an area to the north of Pilastro neighborhood.

In the same years, a reflection was started on the redevelopment of the railway station and the railway junction of Bologna, following the bomb attack on August 2, 1980. In 1983, an international competition was launched, and in 1984 the jury led by Tomas Maldonado declared Zacchiroli’s project the winner among five finalists.



FIGURE 11.3 Aerial view of the market area in 1937, Comune di Bologna/Istituto geografico militare italiano.

The project was suddenly abandoned, and some years later Mayor Walter Vitali committed a masterplan of the whole railway area to Ricardo Bofill (1994). The masterplan developed by Bofill redefined the entire quarter around the railway station and included a new development of the former market area, following the lines of the orthogonal grid of 19th-century *Bolognina* (De Angelis 2016).

Two tall towers at the former market characterized the entire area as a new and modern gateway to Bologna. The controversy over the project, mainly due to the presence of the towers and the demolition of the ancient station, and the passage of the city government to the center-right in 1999, led to its abandonment despite the approval, in the same year, of a detailed masterplan drawn up by Tecnicoop.

The new city government entrusted the formation of a new plan to Scagliarini studio (2004) and established the settlement of the new municipal offices in the area (Figure 11.4).

Despite the failure to realize them, these plans are proof of the importance accorded to the railway station and former market area for the future of the city of Bologna and constitute a set of “interrupted projects” that have left their mark on the definitive development undertaken after 2004 (Ginocchini and Tartari 2007).

The local elections in the same year, and the return of the center-left to the city government, provoked a further change in the former market plan, with a more participatory approach. Indeed, the adoption of Scagliarini’s plan had immediately provoked strong opposition from

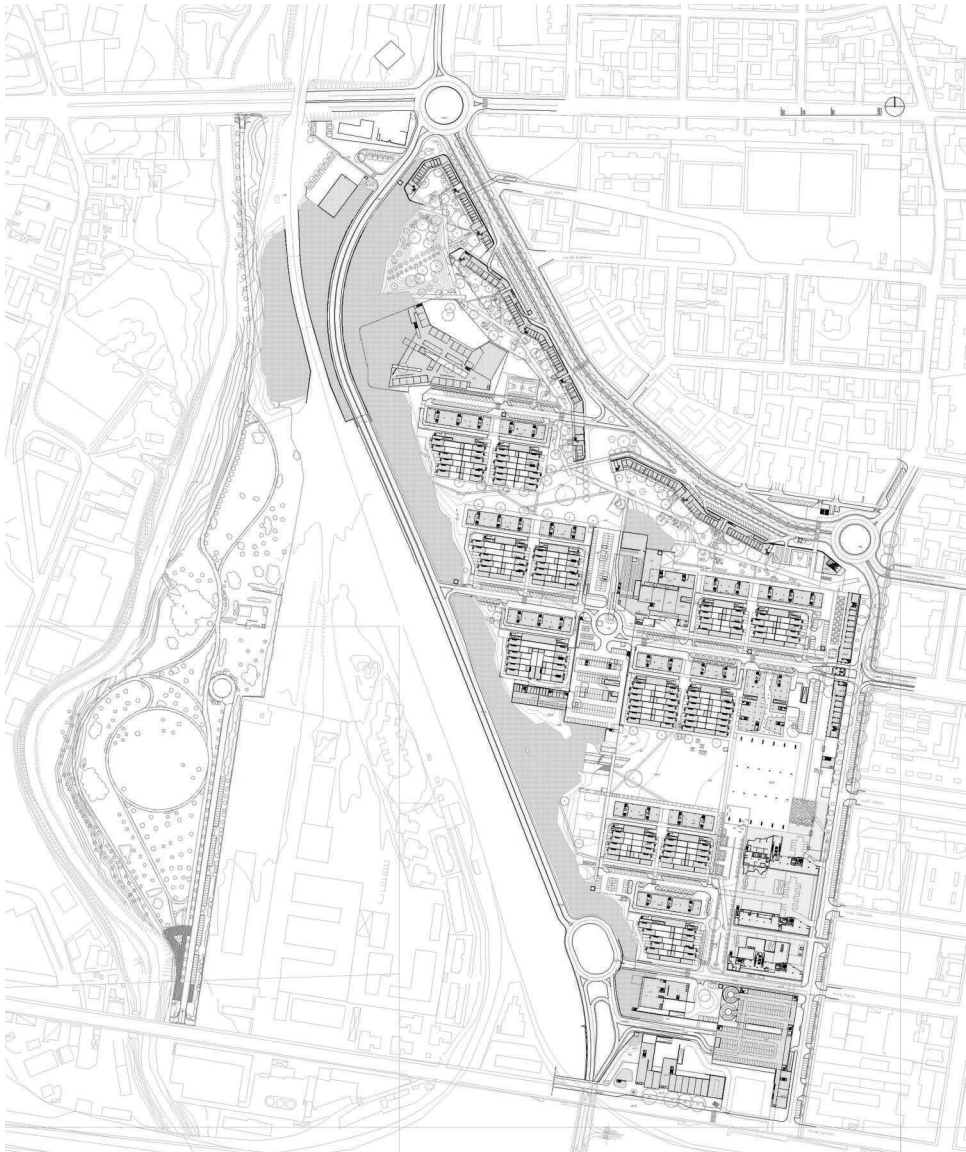


FIGURE 11.4 Plan for the former market area, 2004, Scagliarini Studio/TASCA studio architetti associati.

the inhabitants of the area, and the new city council, headed by Mayor Sergio Cofferati, in 2005 set up a laboratory to discuss and modify the plan. The laboratory was the first test bench of the activities of the urban center (now *Fondazione Innovazione Urbana*, FIU) as an agency for information and discussion on issues related to urban development. The work carried out led to a redefinition of the project both from the point of view of different uses (with a more marked predominance of residential uses in preference to hotels and commercial and administrative functions) and a modification in the number of buildings, which was partly reduced (Figure 11.5).

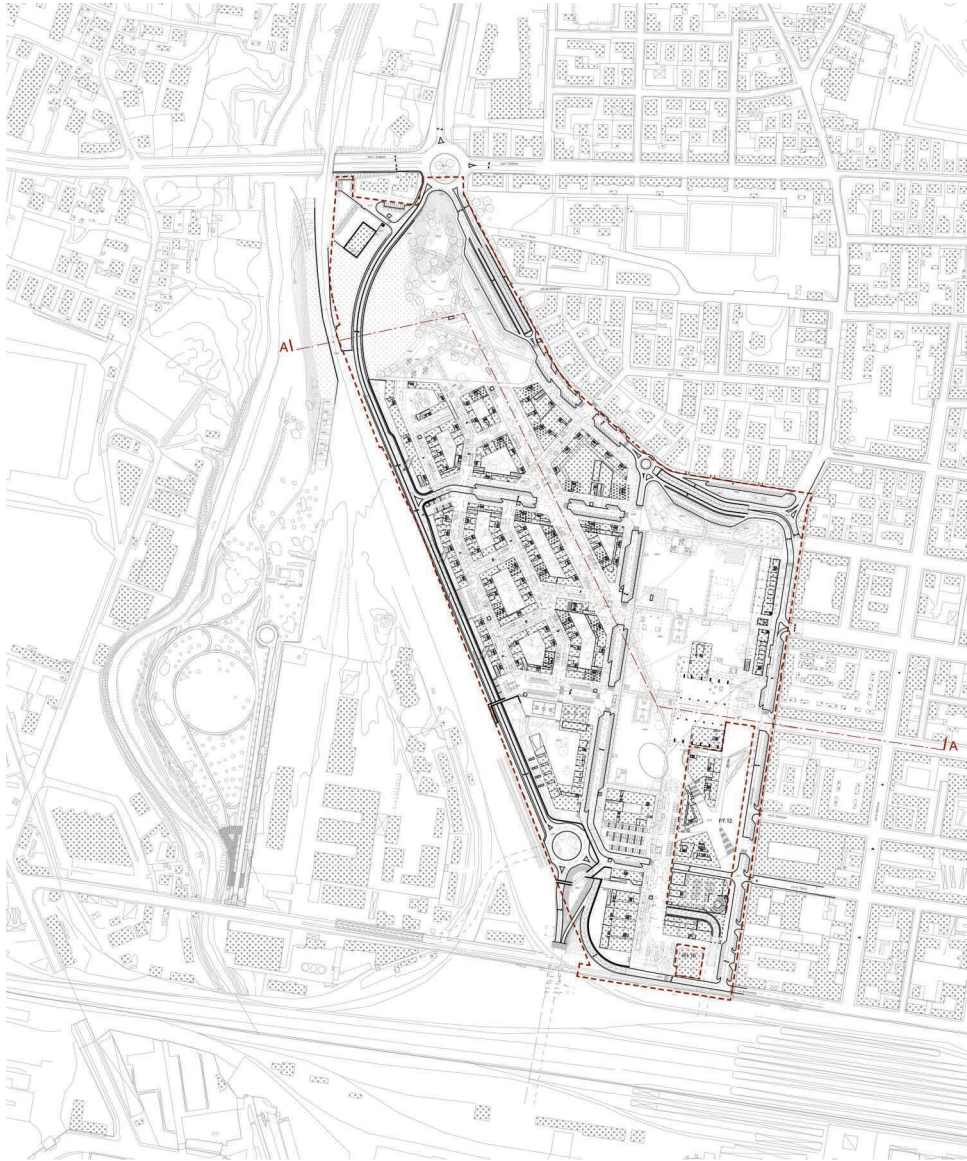


FIGURE 11.5 Second plan for the former market area, 2006, Scagliarini Studio/TASCA studio architetti associati.

The project of the former market was carried out starting in the most difficult years of the economic crisis and almost immediately suffered a severe setback. Due to economic difficulties causing interruptions and serious delays for the private projects, the municipality, as owner of some of the land that was to be transformed, brought forward its share of funding for the public projects, in order to allow the overall design of the public spaces and facilities to be completed (Evangelisti 2016). The public intervention was intended to alleviate the discomfort of the inhabitants of the first residential buildings already constructed, who had gathered together in a committee to draw attention to their difficult situation of “pioneers” living in a large urban construction site. At the same time the municipality wanted to act as a motor, to help revive the project, and this now seems to be finally materializing.

For now, the old market renewal is nearing completion, with important public buildings such as the new town hall, new health services, a school, and a civic center under construction near the big ancient market canopy that will become a covered square, and private and public residential buildings built and under construction, in addition to a hostel and the headquarters of one of Bologna’s major companies (Figure 11.6).

On the one hand, the historical identity of the area as a working-class district is maintained, to such an extent that today *La Bolognina* is the most multiethnic part of the city with a relevant public housing stock. On the other hand, the proximity to the city center and the ease of connection with the high-speed train station, whose construction started in 2004, recently completed with the link to the airport provided by the People Mover, reinforce the role of *La Bolognina* as a gateway to Bologna.

This characteristic blend was already recognized by the Municipal Structure Plan (PSC) of 2007,⁸ which validated the importance of *La Bolognina*, including it in a “historic city” wider than the traditional “historic centre” (Evangelisti et al. 2008), and also it highlighted its vocation as a hybrid place, as a part of the “Railway City,” rapidly and firmly connected to the rest of the world, thanks to its transport facilities.

This tension between maintaining a local identity and the sense of projection into a global world is today one of the characteristic features of Bologna. Being the place where the historic city began to transform and open up to modernity, *La Bolognina* is perhaps the place where these contradictions appear most, where the city “takes the shape of a metropolis (...) validating its transformation from a peasant town to a global town.” So much so that, today, we can

definitely point out the existence of three different Bolognas, or rather of three different ways of referring to (...) the city: the metropolitan Greater Bologna; the idealised and romanticised intramural Bologna from the middle of the last century; and Little Bologna, that is to say *La Bolognina*, a district born at the time of the railways, and so also with the birth of a new way of functioning in the world in reference to spatial distances, and which today finds itself, more than any other part of the city, acting like an antenna, where another new way of functioning is appearing, to replace the old one. (...) Now, it is up to the first periphery of the city to play the role of a relay to connect to what is going on outside. And it is up to the Bolognese (...) to recognize and adopt in their own hearts the new composite form of the city, finally beginning to see it as it really is, in its totality, in its composite and dialectical nature, also from the point of view of its social relationships.

(Farinelli 2019)



FIGURE 11.6 Aerial view of the former market area in 2020, Comune di Bologna.

Notes

- 1 “*La nature prépare les sites; mais c’est l’homme qui crée l’organisme*” is a quotation of Paul Vidal de la Blache’s *Principes de Géographie humaine* (1922) reported by Pierre Lavedan in *Géographie des Villes* (1959, 17).
- 2 On the development and characteristics of the porticoes in Bologna, see the official site “Portici di Bologna” – Italian candidates for the UNESCO World Heritage List for 2021. <http://www.comune.bologna.it/portici/>
- 3 The new General Urban Plan (PUG) of Bologna is available at [http://dru.iperbole.bologna.it/pianificazione?filter=Piano%20Urbanistico%20Generale%20\(PUG\)](http://dru.iperbole.bologna.it/pianificazione?filter=Piano%20Urbanistico%20Generale%20(PUG))
- 4 The *Piano edilizio regolatore e di ampliamento della città di Bologna* of 1889 is the first modern urban plan for the city. Laid out by the engineer Edoardo Tubertini, it is available for consultation at https://www.rapu.it/ricerca/scheda_piano.php?id_piano=131
- 5 The *Convenzione fra alcuni Stati italiani per la costruzione della Strada Ferrata dell’Italia Centrale* of 1851, signed by the Papal State, the Austro-Hungarian Empire and the Grand Duchy of Modena, Parma and Tuscany, is available at https://it.wikisource.org/wiki/Convenzione_fra_alcuni_Stati_italiani_per_la_costruzione_della_Strada_Ferrata_dell%27Italia_Centrale
- 6 The line Piacenza-Bologna was inaugurated in 1859; the line Bologna-Ancona in 1861. The same year, the connection with Milan was opened, thanks to the construction of a bridge over the river Po.

- 7 The General Urban Plan of 1985, developed by Giuseppe Campos Venuti, Fernando Clemente, and Paolo Portoghesi, was approved in 1989 and can be consulted here <http://www.arccgis.com/apps/View/index.html?appid=aa80c34279a4430e96b7172243996d5c&extent=11.0220,44.1983,11.6427,44.7744>
- 8 The Municipal Structure Plan (PSC) adopted in 2007 and approved in 2008 had Patrizia Gabellini as a general consultant and is available for reference at <http://www.comune.bologna.it/psc/articoli/1797>

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12

NEW URBAN LANDSCAPES

Fragments of Civil Architecture

Gino Malacarne

This contribution seeks to offer some theoretical reflections on the themes of the urban design and the reconstruction project of the European city, starting from some of the projects I have developed over time. The project research is oriented toward an architecture that can propose redevelopment/regeneration projects for marginal, peripheral, and abandoned urban places and is mainly oriented toward an architecture that can propose “new centralities for the suburbs.”

These are places that have lost their urban role (once their original intended use was lost), or possibly they never even had one, and await important changes; this does not only concern urban suburbs but also areas that are often central in terms of location but marginal in importance within the city, lacking form and meaning. Last, the research focuses on places awaiting substantial transformations, in search of new uses and new formal identities.

Our task should be to propose a form for these city places.

As for urban suburbs, which largely characterize the face of the contemporary city, they also represent the largest part of the urban heritage that must be redeveloped. The “new city,” an expanse of residences-dormitories, has not yet found an independent life and has lost its initial vitality.

As has been observed (Monestiroli 2009, 172–181),¹ the “suburbs are a large, completely privatized territory (...) a place devoid of the fundamental requirement of every city, which is the relationship between public and private.” It therefore becomes necessary for any redevelopment project to favor a new relationship between collective places and residential areas. This means proposing, at least for large and medium-sized cities, a polycentric model of the city.

Urban suburbs are essentially an economic and social problem, but the architectural project can greatly contribute, giving shape to the urban shapeless. And even if we would like to see social and spatial appropriation strategies, “practices,” and “tactics” (De Certeau 2012, 69–75),² these alone, albeit necessary because they nurture a sense of belonging, will not be enough. Only architecture can build the conditions (places) for the development of a dignified urban life. As Henri Lefebvre wrote, “Urban life, urban society, in a word ‘the urban’ cannot do without a sensitive practical base, of morphology” (Lefebvre 1970, 65–68). According to Lefebvre, the city

is a work similar to a work of art rather than a mere material product. (...) Nothing works without a regulated succession of acts and actions, decisions and behaviors, without messages and without codes. Nor does it work without things, without a material to model, without a practical-sensitive reality, without a site, a “nature,” a countryside and surroundings.

This project research therefore aims to develop around an idea of “new city,” the urban suburbs (and in general all peripheral and marginal areas), and the city of our times to which no one has yet offered adequate answers in general terms. It aims to propose an architecture grafted and superimposed on the existing city not only to design and incorporate changes/corrections but also to intervene in order to provide contrasts in the urban landscape, thus giving new meanings overall to the city space.

1

The themes of redevelopment and transformation of entire urban areas become concrete opportunities to respond to the issues of the quality of urban space and the expectations hitherto hidden or eluded by the great urban expansions. A reflection is therefore necessary to concretely evaluate the questions of the urban form inscribed in the centrality of the architectural design.

The conformation of current cities, their urban and territorial structure, are in fact, as we know, the result of urban planning that has mainly concerned itself with managing and guiding urban growth over the years. This organizational need became essential in the attempt to manage the extraordinary urban development, faced with the immeasurable territorial development and the consequent enormous urban growth that has affected cities especially since the Second World War.

From the art of building cities we have passed, almost progressively, to tasks dictated by other disciplines, but, as Hans Schmidt observed, “The men who form a society do not only need a technique but also an urban art, the meaning of which consists in expressing all the multiplicity of social relations with the means of spatial configuration.”

In general, we can say that our current cities are the result of an idea and a planning that have replaced, over time, the natural ideal drive that every development aspiration contains, a construction praxis increasingly linked to contingencies and functional specialization (traffic, residence, services, production, greenery, the historic center, the tertiary sector, etc.) producing, in fact, a fragmentation unable to restore a general formal sense to an urban planning program.

The plans’ current structure is based above all on a descriptive abstraction of reality that relies almost exclusively on the potential of numerical calculation and on regulatory directives based on indices, ratios, and standards. In this process emerges an abstract, diagrammatic interpretation of the city that reduces and eliminates the richness of the physical and figurative materiality of the city and the territory, to the point of making it unrecognizable and inconsistent. “A diagram is abstract. Cities, however, are concrete. Cities, like individuals, have their own physiognomy” (Hilberseimer 1967, 31).

It therefore seems desirable to link the research and definition of urban places to the necessary urban framework. A link that is now more necessary than ever in order to give the city and its places back not only a material and economic meaning but also a spiritual one linked to the

shape of the city, its history, and its memory, which overcomes the abstract filter of technical-normative instruments, opening up a reflection on the destiny of the city and its architecture.

Within this general framework, the issue of defining the urban form naturally represents a possibility for the city, but it should be recalled that it defines only one aspect of a complex framework in which issues, techniques, and economic strategies converge, all concerned with governing the vital dynamics and use of the city.

Nevertheless, for those who “believe” in the architecture of the city in which to find and prefigure a system of order made up of hierarchies, fixed scenes, and recognizable configurations, the theme of urban form is an equally important and central fact of identification of the urban areas’ functional aspects.

When discussing the importance of form, I fondly recall Adolf Behne.

Nothing is more understandable than the fact that the rationalist gives particular emphasis to form: this in fact arises with the establishment of human relationships. The lonely individual, isolated in the middle of nature, has no problem of form. Man alone, even if he is alone in Nature, is free. The problem of form arises together with that of the union of several individuals, indeed form is the condition that makes co-existence possible. Form is an eminently societal fact. Whoever accepts the laws of society also accepts those of form.

(Behne 1968, 58)

It is undoubtedly a matter of favoring, through the definition of form, urban processes that are an alternative to the mere urban practice of standards, therefore capable of recalling, even if only in significant fragments or parts, the themes of urban centrality, the value and wealth of the overall form of the city, and, why not, the identity of the places.

The task of the urban project should therefore be to re-propose the reasons for the form of the city, those underlying and complementary to the re-appropriation of its value, its meanings, and its beauty, as well as its desirable and correct functioning.

Its role must be inscribed within this order of things as a search for this double soul of the city; a material one, the expression of the city structure and layout, the other cultural elements or features, visible in those forms of theoretical, artistic, or literary representation, and, more generally, in that set of representations, images, and ideas forged over time and generative of the multifaceted universe that is the city.

The need for a different attitude toward urban reality is also the result of a different way of understanding territorial resources. In the recent past, a territory was intended as an inexhaustible resource of productive, residential, and agricultural exploitation, a connotation that today, after the great phase of uncontrolled urban expansion, “could” connect to issues increasingly linked to attitudes of redevelopment, of transformations of areas considered resources to be protected in the context of a revival of expectations and constructive responses to be developed for the construction of our cities.

The humanistic core of the rebirth of the urban design and its ability to relate the needs of reality with research and the beauty of sensible forms lie in this “recovery” of an urban thinking that becomes project, “knowledge,” and the ability to interpret reality.

A thinking capable of “understanding” the different aspects of reality – political, economic, technical, and poetic – and channeling them into a constellation of similar images that reverberate from the territorial scale to that of the single part of the city.

In this way, the territory, the natural environment, and the built environment are placed and interpreted as a whole in the urban design and are no longer considered separately in their changing exchange of values and relationships together with the whole framework of urban forecasts.

2

The projects I present envisage a “rebirth” for parts of the city that are “lacking and needy.”

The projects propose the construction of places that seek to be significant and which (in going beyond the contingent problems that the areas present) aspire to become new urban centralities, points of reference, and cornerstones in the suburbs of the cities of our time in areas where the urban form is being lost.

In the city understood as an artifact, the “plan” is implemented with architecture, the only possibility for an urban project that contemplates a significant form of the city, with its own character, as a final result.

The projects are then built as pieces of analogous cities that are rooted in the built city and the imaginary to which they refer. The ability to imagine figures and spaces derives from knowledge of historical cities (from the urban facts that characterize cities). In fact, the city is a place of common values and a “theater” where human events take place; it is the custodian of a tradition of urban forms forged by time and the life of men. I therefore share the projects and ideas of cities that refer to known places that are transcribed, reinvented, and rediscovered in the project, noting with Cesare Pavese that true amazement is made of memory and not of novelty.

Through urban analysis, the reference to types and figures deriving from history also contributes to making the urban facts recognizable and identifiable. The projects establish a relationship with history to be understood as generative, not as imitation, and which is built through an analogical process.

As happens in the best architecture, it is the “precedents” and the historical references that can be glimpsed therein which feed the imagination that they themselves produce. Indeed, evocative images are necessary for the principle of recognition and identity construction of places.

The architecture of the city is the urban theater of civil life or, according to Aldo Rossi, the steady scene of human affairs; urban scenic space is therefore an essential component of the urban design and is a figure that recurs in my work as an architect. This component requires careful work on the implementation and representation of the project; in fact, if the city is the theater of public life, it is the architecture, through its facades, that makes the urban landscape intelligible in terms of culture and experience.

Duisburg

The project for Westhafen in Duisburg concerns a heterogeneous area located on the edge of a small urban center on the outskirts of the city, characterized by some of the basins of the large river port of significant disuse. The project area is a peninsula located between two port basins in search of new functions, new uses, and new formal identities. The intervention in shaping the place through architecture goes beyond the contingent problems that the area presents and proposes a fragment of civil architecture in an area where the shape of the city is being lost (Figure 12.1).



FIGURE 12.1 Gino Malacarne, Project for the Werfthafen of Duisburg, 1989/1990.

The project, which involves the construction of an articulated and complex settlement unit intended for different functions, also becomes the occasion for complex typological experimentation and involves a type of tower on a base (a type of residential building in which the residence is inextricably combined with some related services). The large base adapts to the morphology of the peninsula and alternates a sequence of towers in succession interspersed with courtyards that identify the public spaces. The base and the towers simultaneously confront the nearest urban dimension and the landscape of the industrial city, the port, and the city in general and act as a cornerstone.

The project therefore reveals its urban calling, as it is built in parts that structure different relationships with the city and at the same time presents itself as a unitary architecture, a large completed factory, and a new part of the city.

Berlin

The project for the “Königsstadt” area of Berlin includes the part of the city characterized by the crossing of the stretch of Karl Marx Alle rebuilt starting in the 1960s that goes from Alexanderplatz to Strausberger Platz. Here, the destruction from the war, then the systematic demolition of the historic city that remained standing, and the abolition of landed properties made it possible to plan the functional city, in the particular sense of the GDR experiment of a socialist city. It had to become a part of an egalitarian city that would have eliminated differences and hierarchies through the application of functional specialization criteria derived from socioeconomic disciplines: no longer city center, or suburbs, but equal living conditions for all. The unsuccessful attempt to build a new urban life is today revealed merely as a large suburb (a central area in terms of location but peripheral in form and content) even if it is “of equality.” This architecture “restricts the concept of living to living in a specialized way” (Figure 12.2).

Recognizing that the “course of history is irreversible” and that it is not possible to try to reconstruct what has been demolished, the project seeks to build a new urban identity for this part of the city through a process of densification and stratification of pieces and new parts that create new spatial configurations.

In some cases, the project strengthens, and in others invents, urban purposes; it is essentially an operation of “completing” what exists, even if in the light of a new idea of the city.

The design project took shape starting from the redefinition of the streets and their renewed urban propensity. The stretch of Karl Marx Allee crossing the area becomes the center of the intervention and the project accentuates the monumental calling of this urban axis, ideally reconnecting with the idea of a large modern urban road previously created by Henselmann. Buildings in line, arranged parallel to the existing buildings, marked by vertical elements, give a rhythm to the street together with towers that also provide views and close visual axes; they are the architectural elements that substantiate the urban design. The new buildings in line also narrow the road axis, and, with the existing buildings, form measured sequences of public pedestrian spaces parallel to this road.

Cracow

The project for the southern area of Cracow (within the general urban design: Seven Gates to Cracow) proposes a clear and recognizable shape for the southern border of the city, characterized by the urban highway leading to Zakopane, interpreting the architectural theme of the “city gate” and the urban limit and how this theme can be understood at the beginning of the third millennium (Figure 12.3).

The design project expresses the more general desire to build an urban fragment with its own autonomy and completeness, a sort of sign capable of connoting and inserting itself within a system of triangulations with other figures and architectures of the urban landscape.

The proposal is a new “standing city” immersed in nature in the countryside and includes a sequence of towers arranged on a base that delimits large open spaces, proposing an “open spatiality” and embodying the idea of a “city arranged in nature.”

The intervention is built starting from the base, an elongated parallelepiped arranged in an east-west direction and marked by a succession of open courtyards alternating with the towers. There are seven towers on the base, cut and interrupted by the highway with three

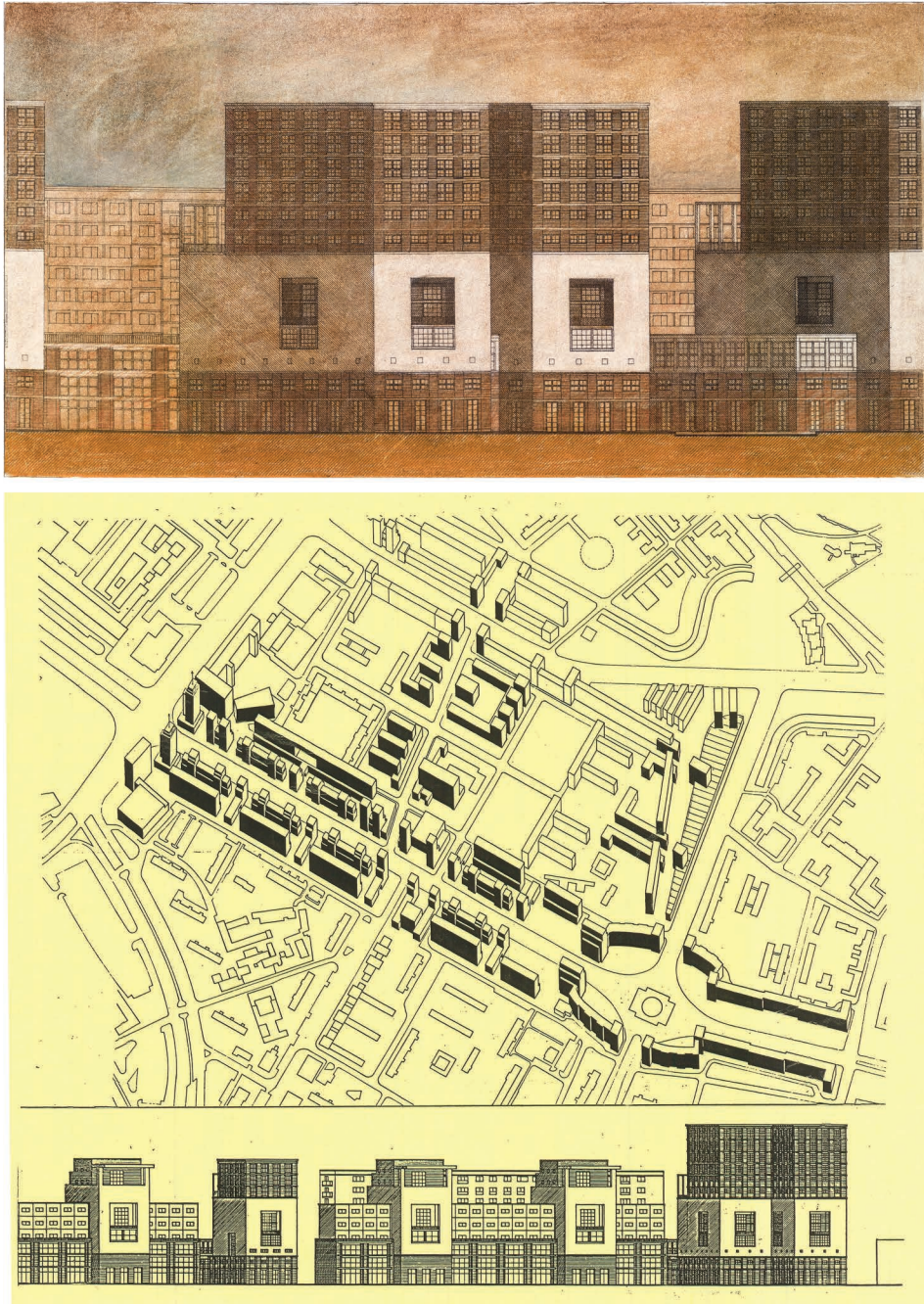


FIGURE 12.2 Gino Malacarne, Project for Berlin Königsstadt, Berlin, 1995.

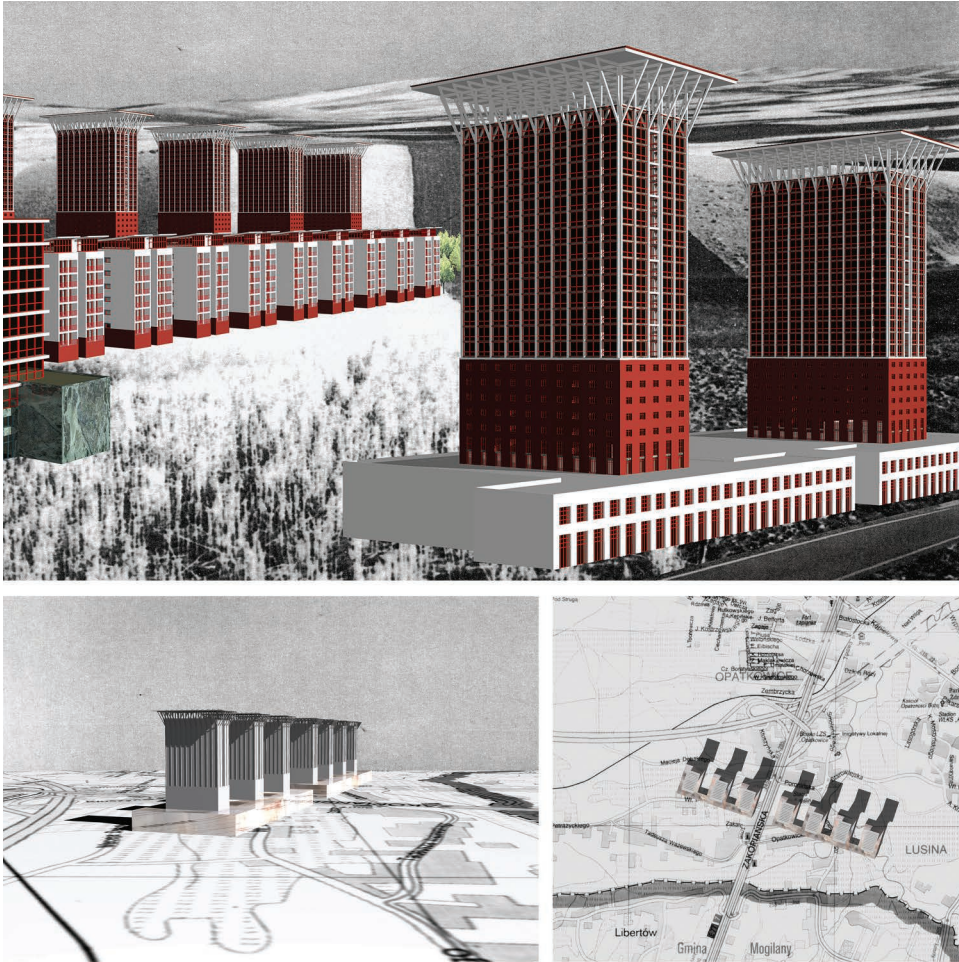


FIGURE 12.3 Gino Malacarne, Zakopane Gate, Project for the southern area of Krakow (Seven Gates to Cracow), Krakow, 2000.

to the west and four to the east, as if to underline the unfinished nature of the intervention and suggest the possibility of future urban developments.

The base and towers stand out as clear-cut volumes whose arrangement evokes the layout and clarity of a founding city. The towers accept the relationship of scale with the landscape and with the parts of the city more generally, thus favoring a wider system of relationships.

Modena

In the redevelopment project of the vast urban area of south Modena, in which urban forms are gradually disappearing, atomizing themselves in the indistinct flow of peripheral expansion, an attempt is made to demonstrate how a general framework of transformation can be prefigured without proposing any tabula rasa or attempting to unify something that clearly cannot be unitary (Figure 12.4).



FIGURE 12.4 Gino Malacarne, Urban Redevelopment Project (for the Artisan Village and the Madonnina District), Modena, 2005.

The project addresses a complex area affected by an urban transformation process triggered by the displacement of the railway line. The general configuration of the design project reveals a dialectical tension between the existing areas and design areas that highlights the intention to regenerate these areas, now separated from each other, transforming them into real urban places recognizable as such and related to the broader framework of infrastructures and centrality of the city.

The project therefore addresses the question of the city's architecture and its construction; this primarily concerns the identification of urban themes that the project articulates as parts of a more general design in which each of them plays a specific role in the aspiration to a discreet urban unit.

The intervention identifies and develops three distinct urban parts connected by a long urban axis and other road axes – whose figurative qualities are expected to be strengthened – which seek to reconnect the entire area and the city.

Three major compositional themes characterize the three parts: the “turreted citadel,” the “civic forum” (a large greenfield surrounded by new architecture), and the “memory park,” which includes the cemetery, the large greenspace, and the countryside surrounding it.

Five towers on a base constitute the hub of a wider and more complex urban reconfiguration, which is identified with the grounds of the viaduct being decommissioned. This “turreted citadel” makes the stretch of Via Emilia “forgotten” and “cut” by the construction of the old railway line, the center of the project. From the south, in particular along the axis that leads to Via Emilia, and in general from all directions, the towers will clearly define the new fixed scene of the city before the new areas affected by the project and the overall scale of the city of Modena, offering an image for the future.

Verona

The project for two residential blocks in Verona is located in an area on the southern edge of the city behind the railway yard, where the city’s industrial development was concentrated during the mid-20th century (activity now discontinued) and the Fairgrounds (Figure 12.5).



FIGURE 12.5 Gino Malacarne, Two residential blocks project, Verona, 2007.



FIGURE 12.6 Gino Malacarne, *Scena urbana con architetture ritrovate* (Urban scene with rediscovered architecture), 2020.

The redevelopment project welcomes and shares the constraints of the envisaged urban program but leads them back to a broader reasoning of architecture, seeking a system of correspondences and analogies with the ancient city. The two blocks of the project show, relative to the discontinuity and fragility of the surrounding building fabric, the strength of a unitary principle, looking to Verona and its tradition as a living example, a possible alternative.

The relationship with the street is resolved by a continuous arcade on the ground floor that surrounds both blocks and builds a system of urban hierarchies. The arcade links the building to the road network and leads to the large garden courtyards in the center of both blocks. But the arcade also becomes an opportunity to underline the different role of the streets and of their being again: not just a road axis, but a public, collective space. A collective space also characterized by an idea of an architectural ensemble that defines the face of this part of the city. Architecture thus becomes the fixed scene of the collective space.

The architecture of the building represents the compositional and distributive logic that overlaps the different functions envisaged in the building in height, showing it as a matter of architecture, transposing it into an organizational principle of the volume and the facade

through the superimposition of horizontal bands. It perhaps reflects the facades and the organizational logic of the historic buildings in Verona by orders.

In an elongated view, the buildings face the large greenspace and are entirely revealed in the organization of horizontal bands, in the ordered architecture, its belonging to the city, and its civil character, like a large urban scene that concludes the city and opens toward the park.

The projects indicate possible ways of promoting an urban process that does not exist today and a “social life which architecture can only encourage but certainly not determine” (Figure 12.6).

Notes

- 1 Some considerations are taken from the essay by Antonio Monestiroli (2009, 172–181).
- 2 Some of the themes were enunciated by Michel de Certeau (1990, 2012, 69–75).

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PART III

Mapping Natural Space

Greenspaces and Urban Design



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13

THE ROLE OF GREENSPACES IN URBAN DESIGN THEORIES IN FRANCE

Valter Balducci

Since the introduction of the concept of sustainable development (WCED 1987), there has been a wide range of different proposals, programs, and projects calling for a close relationship between the city and nature. Many of these aim to translate the notion of sustainability into urban structures and architectural types or shapes, working with nature, or more precisely, with green urban areas. These pages synthesize some of the results of research on greenspaces in the urban design theories of the modern era, particularly in France. Questioning the notion of greenspace and its role in architectural and urban theory poses some methodological difficulties. These include the inherent complexity of the definition of 'nature' in the historical context or the sheer variety of words used in architectural and urban thought (like nature, green, park, garden, countryside, etc.) or the variety of sources (theoretical texts, planning programs, urban and landscape projects) or scales (from gardens to territory). These methodological questions will be the subject of a future publication.

This chapter has three parts: first, nature considered as an urban system that is superimposed on the existing town and anticipates its development; second, natural space considered as a substratum for modernist urban shape and as a framework for urban planning; and, finally, natural spaces as ecological systems for redesigning urban areas and as a preparation for the future transformation of urban territories.

The Search for an Urban System

Green urban areas have always been essential elements in the city, but it was in the 18th century that this type of urban space was first considered as an element for the design or modification of the city. The theorist Marc-Antoine Laugier (1713–1769) developed an original theory of beautification of cities based on principles derived from nature. Laugier's nature is an idealized nature, with themes and shapes coming from picturesque gardens, rich in landscape effects, depths, points of view, plant elevations, and horizon lines. For Laugier, "You must look at a city like a forest. The streets of the former are the pathways of the latter; and they must be traced in the same way." However, this is not a forest like any other:

The plan must be drawn by Le Nôtre (...); that here we see a star-shape, a crow's foot, on this side a herringbone road, on the other, fan-shaped roads; further away, parallel lines; everywhere crossroads of different designs and shapes can be found.

(Laugier 1755, p. 222)

These planted, rectilinear paths, intersecting at roundabouts, provide the layout for public spaces during the extension of French towns, which were opened up to the surrounding countryside, after the demolition of their former military ramparts. If in Versailles there is a clear analogy between the structure of the avenues in the park and the planted boulevards in the town, in several plans for urban extension the planted avenues play a role in the orientation and structuration of the new urban fabric (Figure 13.1).

This planted boulevard constitutes the archetype of the urban axis developed in the mid-19th century during the transformations of Paris under Napoleon III. At this period, Paris underwent a significant reorganization via the introduction of new infrastructure networks, for the circulation of people and goods and connection with city services. The layout of this network was defined by greenspaces; thanks to the work of Adolphe Alphand (1817–1891), a classification of different urban greenspaces was defined: the boulevard, the wood, the park, the square, and the garden (Alphand 1867–1873). In Paris, this approach was continued by Eugène Hénard (1849–1923). In his proposals at the turn of the 20th century, Hénard planned the development of a system of natural spaces inherited from Alphand's work, through the construction of nine new, large parks covering an area of around 10 hectares on the outskirts of the city (Hénard 1903–09).

Park System

The publication of *Grandes villes et systèmes de parcs* in 1908 by Jean-Claude-Nicolas Forestier (1861–1930) disseminated in France the work of American landscape architect Fredrick Law



FIGURE 13.1 The park, the castle, and the city of Versailles, extract from the Carte de l'État Majeur, 1866 (<https://remonterletemps.ign.fr>).

Olmsted (1822–1903). Since the building of Prospect Park in Brooklyn in 1866, Olmsted had innovated with the introduction of the parkway, integrating all the city's greenspaces, from parks to peripheral or abandoned sites, into a continuous urban network, the park system. The *parkway*, then developed as the *greenway* and the *riverway*, separated the circulation of pedestrians and car traffic into parallel corridors, while also creating a planted strip that gave the city the benefits of a park. In Boston, Olmsted produced what would be nicknamed the 'Emerald Necklace', a continuous arrangement of existing parks brought together as a single large regional park (see *The Papers of Olmsted* 1997). Forestier gave the concept of the park system a regional dimension (Forestier 1908). His system of parks included a set of spaces ranging from large nature reserves protected at a territorial level, such as large urban parks, recreation grounds, small parks, neighborhood gardens, all connected by a network of avenues. Although it also included forest, rivers, valleys, or large rock formations, establishing a continuity between the city and its surrounding region. In Forestier's plans for cities like Rabat, Habana, or Paris, the interconnected greenspaces act as a structuring element. The key space of the Forestier park system is the *avenue-promenade*. This differs from the simple road infrastructure because of "the character, the pleasure, the efficiency and the capacity" it has, due to its size and to the use of natural elements, such as aligned trees and lawns (Figure 13.2).

Forestier designed a park system project for Paris in 1923. Unlike the work of Haussmann, which only dealt with the center of the city, Forestier's park system was concerned with the extended metropolis. The project gave city dwellers a group of different greenspaces where they could take a walk and at the same time promoted certain urban public health principles characteristic of the time, such as the circulation of the wind to improve the ventilation of the city, or physical activity in the open air, in order to improve the health of the citizens. The approach was three-dimensional, with the axial perspectives reinforced by the planted lines of trees and vegetation. The viewpoints onto the surrounding landscape were



FIGURE 13.2 Jean-Claude-Nicolas Forestier, housing estate at Aguedal, Rabat, Maroc, 1914 (Fonds Forestier. SIAF/Cité de l'architecture et du patrimoine/Archives d'architecture du XXe siècle).

also carefully researched along with the importance given to pedestrians or the emphasis of the natural topography. These elements are also close to the urban design principles of architects like Léon Jaussely (1875–1932) or Jacques Greber (1882–1962) and other architects from the *Société française des urbanistes* (founded in 1911).

The replacement of the fortifications that encircled Paris was an opportunity for Forestier, who proposed in 1909 that they be substituted by a sequence of parks forming a ring around the city. His proposals were part of the basis for the work of the *Commission pour l'extension de Paris*, led by Marcel Poëte and Louis Bonnier (Préfecture Département Seine 1913). The commission's report led to a competition in 1919, won by Léon Jaussely. Jaussely's plan combined the principle of decentralization of garden cities and Forestier's concentric ring model with a form of insertion of the countryside into the city of Paris. This also reflects the more radical and widely used approach adopted by Bruno Möhring (1863–1929), Rudolf Eberstadt (1856–1922), and Richard Petersen (1865–1946) in their project for Greater Berlin in 1911, where concentric urbanized rings alternate with cones, allowing the introduction in the metropolitan area of fragments of countryside, woodland or forest (Eberstadt 1920, pp. 232–233), or in following plans, like the plan for Aachen proposed in 1920 by Karl Henrici (1842–1927), Gustav Schimpff (1871–1919), and Carl Sieben (1864–1927).

The idea that natural spaces are given the role of breaks in the urban continuum had already been suggested by the urban reformer John Claudius Loudon (1783–1843), who, in 1829, put forward the idea that the city (London in particular) “may be extended in alternate mile zones of buildings, with half mile zones of country or gardens” (Loudon 1929). This idea of creating breathing spaces into the city contributed to the garden city theory by Ebenezer Howard (1850–1928) and its rapid introduction in France by Georges Benoit-Lévy (1880–1971). For Benoit-Lévy, the garden city theory offered an alternative to disorderly industrial development, allowing a regional dispersion of habitats and production activities through isolated garden cities surrounded by agricultural land (Benoit-Lévy 1904). For him,

the garden city is a model, modern city, [...] It is a city in which each dwelling is in the middle of a garden, in which each district is surrounded by a park, itself surrounded by a vast strip of fields and forests.

(Benoit-Lévy 1910, p. 157)

It corresponds to a social need, and according to Georges Risler (1853–1941),

The natural need for sun and pure air, for greenery and flowers is such an imperative for man that it was in a large garden, “the earthly paradise,” that all religions have believed that the first men should be placed.

(Risler et al. 1916, p. 375)

The garden represented the ideal of nature: providing a connection between private and public spaces and also between work and leisure, as working the soil in the gardens was considered to be an ideal leisure activity for the inhabitants. However, the transcription of the garden city model had certain differences: the French *Cité jardin* is less the self-contained city as proposed by Howard and more a developed version of the working-class town and an

element of the planned expansion of the city. The *Office public d'habitations à bon marché de la Seine*, an organization for accessible housing whose president was Henri Sellier (1883–1943), implemented a project based on this approach, building 11 *Cités jardin* around Paris, as from 1921 (Sellier s.d.).

Nature as Substratum and Framework

In the context of the debate on modern urban planning in the 20th century, the natural space assumes the role of a substrate for new urban forms and becomes a part of urban and regional planning.

Open Ground

According to the theories on health and hygiene, getting the sun and wind to come through the urban fabric was essential. In their study of Paris, which was begun in 1913 and published in *La science des plans des villes* in 1928, Adolphe-Augustin Rey (1864–1934), Justin Pidoux, and Charles Barde (Rey et al. 1928) proposed a reform of the morphology of urban fabric, in order to increase exposure to the sun and prevailing winds. The consequent separation between the roads and buildings creates an intermediate space that Rey thought of as natural. In a different way, and with many other ambitions and objectives, the numerous projects for the modern city also adopted Rey's heliothermic approach, affirming a new role for the space of the ground. This space reinforces the relationships between the shapes of the large-scale buildings, which had been transformed into architectural objects, independent from the street itself. In 1941, André Gutton (1904–2002) wrote in *La Charte de l'urbanisme* (a charter for town planning) that "landscapes must be furnished with monuments" (Gutton 1941). Liberated from its interdependence with the volumes of the buildings, the urban ground could now have its own specific project. Preferably designed as a landscaped area, the ground was considered as a space for leisure, with an important social function. Le Corbusier (1887–1965) specified its characteristics in the Athens Charter: "the new green areas must serve clearly defined purposes: accommodating kindergartens, schools, youth centres or any buildings for community use, closely connected to people's homes" (Le Corbusier 1943, n. 37), while leisure time is associated with the presence of local parks, forests, sports facilities, and existing natural sites, like rivers, mountains, valleys, and lakes (*Ibidem*, n. 38–40). This continuous landscape from the city to the territory was irrigated by a hierarchical network of roads, the Chandigarh 7V, which was a premonition of the territorial development of the following decades: a hierarchical road network superimposed on a continuous ground but delimited by large sectors of habitat or production, with the greenways reduced to the vegetated corridors along the rivers (Le Corbusier 1945, 1959, p. 49). André Gutton in 1950 specified that "it is not a question of interpreting nature, but of understanding and copying it, and especially of understanding its true scale" (Gutton 1950, p. 191). He refused the simple accumulation of trees, the profusion of paths, and the subdivision of the ground into "petty flowerbeds"; he advocated for a reduction in the fragmentation of the ground into separate elements, in order to "lay the houses on green lawns which are as large as possible" (Gutton 1950, p. 191).

On the large housing estates such as the *Grandes Terres à Marly-le-Roi* (1952–1960) by Marcel Lods (1891–1978), the ground space constitutes one of the main urban elements,

endowed with its own autonomy and its own design, but it is still thought of in terms of its visual, landscaped aspects and as a space for leisure activities. These areas are designed as urban amenities, without any ecological or environmental functions. However, even if their definition is restricted to their social role, these greenspaces are nonetheless places that contribute to the construction of a unique urban landscape. Xavier Arsène-Henry (1919–2009) analyzed the morphology of large housing complexes as being composed of three elements: open ground, sculpture-like buildings, and transitional spaces (Arsène-Henry 1961). Topological relationships are established between these three elements. Public space has a key role: it can be “shaped,” with compositions of buildings more or less closely or distantly placed together, creating points of intensity, compression of the space, or alternating between closed or open viewpoints (Taupin 1964; Figure 13.3).

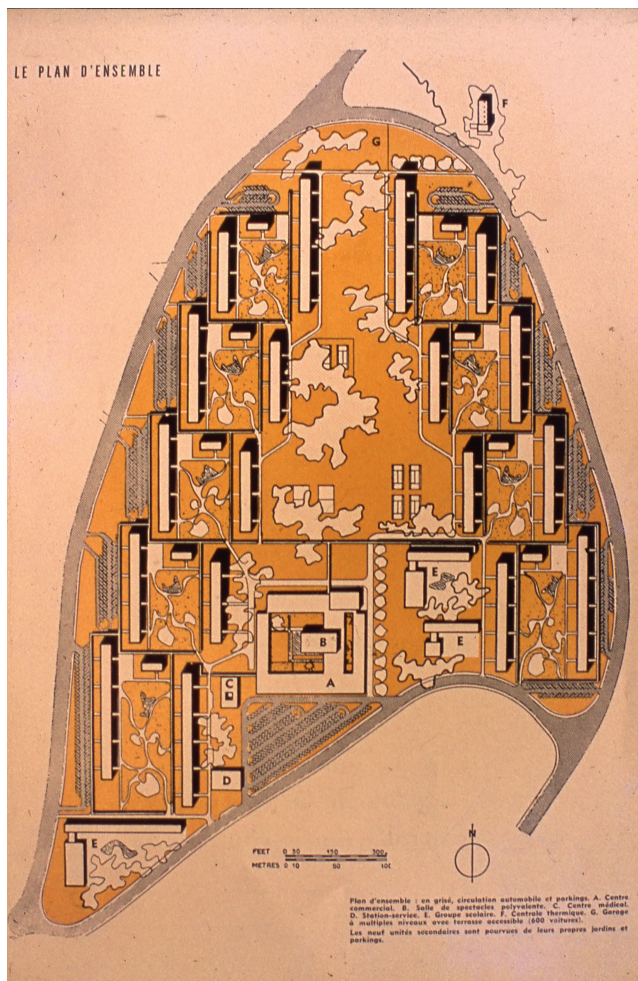


FIGURE 13.3 Marcel Lods, view of the overall plan of the housing estate “Grandes-Terres,” Marly-le-Roi, 1952–1960 (Fonds Lods. Académie d’architecture/Cité de l’architecture et du patrimoine/Archives d’architecture du XXe siècle).

However, the relationship between the town planning project and the actual site is rarely considered. The site is often reduced to an abstract notion of open land, and the vegetation is just a generic element of the design. Some examples are different, however. On the housing estate at Beaulieu-Le Rond-Point in Saint Etienne, the project of the landscaper Jean Marc (1964) involves the careful layout of hedges and opposing hedges and shrubs and trees, which are intended to establish continuities with the surrounding countryside. In Bron-Parilly, Michel and Ingrid Bourne do not use hedges but instead favor large masses of trees (1957), in reference to some of Le Corbusier's work, and at *les Minguettes* in Vénissieux (1966) they use a central, empty space, introducing lines to separate the different parts of the neighborhood and using hedges to give structure to the surroundings of the buildings. For the *Unité de voisinage* in La Maurelette (1962), Jacques Sgard integrated elements of the local landscape and used them in a set of tree-lined walkways, paths, and small public squares, creating views toward the nearby bastide and a row of plane trees. However, it is at the ZUP (priority development zone) de Châtillon, near Reims, that the landscape of the project is as powerfully expressive as the buildings. On this site, the landscaper Jacques Simon "reinvents an independent, playful and sensual landscape where man creates the rhythm" (Blanchon-Caillet 2007, p. 16). The open ground then becomes the support for a newly invented geography, intended to cover an abstract state.

The Urban Framework

It was in the 1960s that the notion of 'green' space appeared, both in regulatory texts and in the landscaping profession. Natural spaces, now recognized as an important subject for urban and regional planning, were given an essential role in developing the large-scale structure of different territories. The landscape designer Théodore Leveau (1896–1971) advocated in 1964 the "necessary introduction of green spaces into the city" corresponding to "a system of green spaces inside the town which are continually integrated as part of the structure of the future city," formed by "a series of green corridors and wooded areas (...) among the housing units" (Laveau 1964, cit. in Toubanc and Bonin 2012, p. 4). In 1964, Jacques Simon considered greenspaces as suitable for hosting games, sports, and leisure activities and that the development of these spaces must be articulated with planning on a regional level (Simon 1964). In the background, there was still the idea of preserving a ring of open space around cities, which would remain free from construction, so as to avoid the creation of a dense and continuous conurbation. At the same time, green corridors would help break up the urban continuum.

The town planning approach that developed in France in the 1970s showed a notable difference when compared to the functionalist approach to urban design. The 1976 masterplan for development and town planning in the Ile-de-France region (*Schéma directeur de l'aménagement et de l'urbanisme de la région d'Ile-de-France* or SDAURIF), introduced two types of natural spaces – the greenbelt and the green grid (*la trame verte*). The general function of the greenbelt is to spatially limit urbanization, by reserving land for recreational, landscaping, or ecological functions. The new designation of certain areas as *Zones Naturelles d'Equilibre* (areas of natural equilibrium) corresponded to this idea. The *trame verte* refers to the work of Forestier, who integrated agricultural land and forests into his park system. In this masterplan, the *trame verte* is described as underpinned by emerging environmental and landscape principles: it designates a system of interconnected natural spaces. Even so, ecological concerns were still absent, even though flood-prone areas were recognized as

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Charpente paysagère

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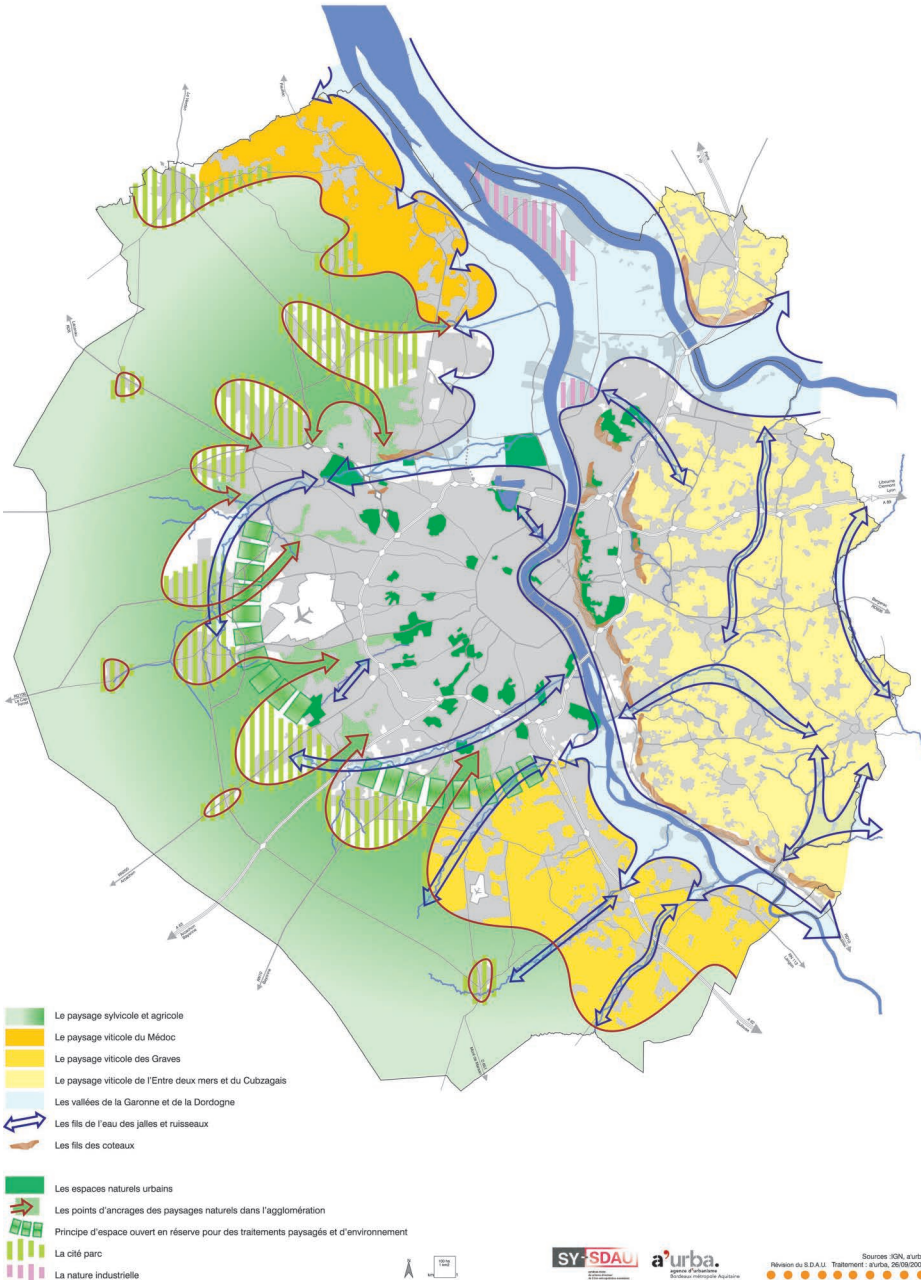


FIGURE 13.4 a'urba, plan 2010–2020, development master plan, landscape framework charter, Bordeaux, 2011 (a'urba, agence d'urbanisme Bordeaux Aquitaine).

important for waterfowl and migratory birds. Natural spaces were still considered either as landscape to be protected, destined to become a recreational area, or as an agricultural space, destined to be transformed by intensive agriculture. In both cases, the idea was to create reserves but not yet spaces that could determine the organization and morphology of the city. Due to its ability to respond to environmental concerns and to the need for the protection of natural landscapes, from the 1980s, the notion of the *trame verte* became a tool for thinking about urban development.

It was the *Grenelle de l'Environnement* in 2007 that established the obligation to include a green framework (*trame verte*), complemented by a blue framework (*trame bleue*), in all planning documents, as a contribution to fighting against the loss of biodiversity. In the masterplan for the Bordeaux Metropolitan Area (2011), the framework of greenspaces included the idea of continuity, encouraging connections within the metropolitan area and in the city center. Every open space is considered to have a specific ecological value, and this ecological value is amplified by the fact that the spaces are connected in a system. They included both major elements (parks, land reserves, rivers, lakes, etc.) or more minor connections (boulevards, linear green areas, watercourses, etc.). It is therefore the idea of a green framework that connects urban design with planning on the regional scale and which defines the spaces between town and country as places of creativity and innovation (Figure 13.4).

The Architecture of the Territory

Critical reflections on the contemporary city open up a new role for natural spaces, which are seen as a means of redesigning urban areas and of preparing the city for future transformation. The conditions of urban growth at the end of the 20th century and the pressure on natural ecosystems brought about by growing cities and metropolises have fueled research on the renewal of urban development processes. The notion of sustainable development legitimized the ecological and environmental questions that had been present in France since the 1990s. A kind of reversal of meaning has taken place in terms of the design of unbuilt urban spaces: artificial green islands such as parks and gardens, fragments of the town plan that remain unfinished, or expanses of land on the outskirts of cities invaded by a certain wildness today constitute essential spaces. These areas can become the framework for contemporary urban design approaches, allowing them to open up to ecological and environmental considerations.

Recomposing the Territories

In the contemporary city, natural spaces can be part of strategies for territorial recomposition. This is a need that dates back to the 1970s, with the beginning of a period of reforms for large housing estates and new thinking on the status and morphology of public spaces. In the following projects for urban renovation of social housing neighborhoods, greenspace is a tool for giving them a new urban structure. For example, in the renovation of the housing complex *Les Minguettes* in Vénissieux (1994–2009) by Antoine Grumbach, the attention given to the site, “a unique place in the geography of Greater Lyon,” led to the development of a green framework, composed of a green belt that surrounded the housing complex. Planted avenues were introduced, crossing through the renewed urban fabric, and a continuity of green spaces was developed, within the urban area.

In metropolitan areas where transformation is happening, natural spaces can be used as a tool for reforming and bringing together fragmented and contradictory urban fabrics. In the key urban area between Paris and Aubervilliers (2003), where there is a concentration of communication infrastructures, residential blocks, tertiary sector buildings, and industrial wastelands, the project by *Agence TER* is centered around a core ‘greening’ principal. A shared garden fits into a gap between the buildings, and an ‘urban forest’ surrounds the infrastructure of the motorway. Nature is here seen as a shared story, making it possible to connect together elements that had until then been in conflict (Figure 13.5).

This is also an idea that is present in the transformation of the *Ile de Nantes*, an island of 337 hectares once occupied by shipyards, whose transformation makes it possible to imagine a new urban centrality. In 2000, Alexandre Chemetoff, in charge of the project until 2012, proposed an innovative methodology, replacing the traditional masterplan with a ‘guide plan’. This is a system of public and green spaces that forms a background structure allowing the development of different future projects, setting in motion a process that can



FIGURE 13.5 Agence TER, project for Paris nord-est, 2003 (Agence TER, Paris).

take place gradually over a long period of time and adjust according to the evolution of the island's identity. After first recognizing the existing heritage of the place and the need to make the area part of the new metropolis, the project proceeded by reclaiming the banks of the Loire, opening up the island to the view of the river, then identifying areas for possible development. The projects for greenspaces in the 'guide plan' form the backdrop for urban transformation. These ideas were continued in 2017 by Jacqueline Osty, who also identified this connection between projects for town planning and green public spaces, as a means of creating a dialogue between large-scale and small-scale approaches. In Nantes, from east to west, a network of public spaces weaves a link between the different districts of the island and creates a continuous walkway between the parks in the west and the urban amenities to the east. This longitudinal green zone is completed by a network running north-south, formed by small paths that create links with the riverbanks on the island. Along the same lines is the Ecoquartier Flaubert project in Rouen, designed by Jacqueline Osty (2009–2030). In this project, greenspaces are laid out and intersect with transport infrastructure and with fragments of preexisting urban projects, all of which guide the design of the urban fabric. Greenspaces are a central element in the design of the neighborhood, not only because of the transformation of the banks of the Seine into a continuous promenade but also by the intersection of a vertical axis formed by a canal turned into a public park and a horizontal line of public squares and parks (Figure 13.6).

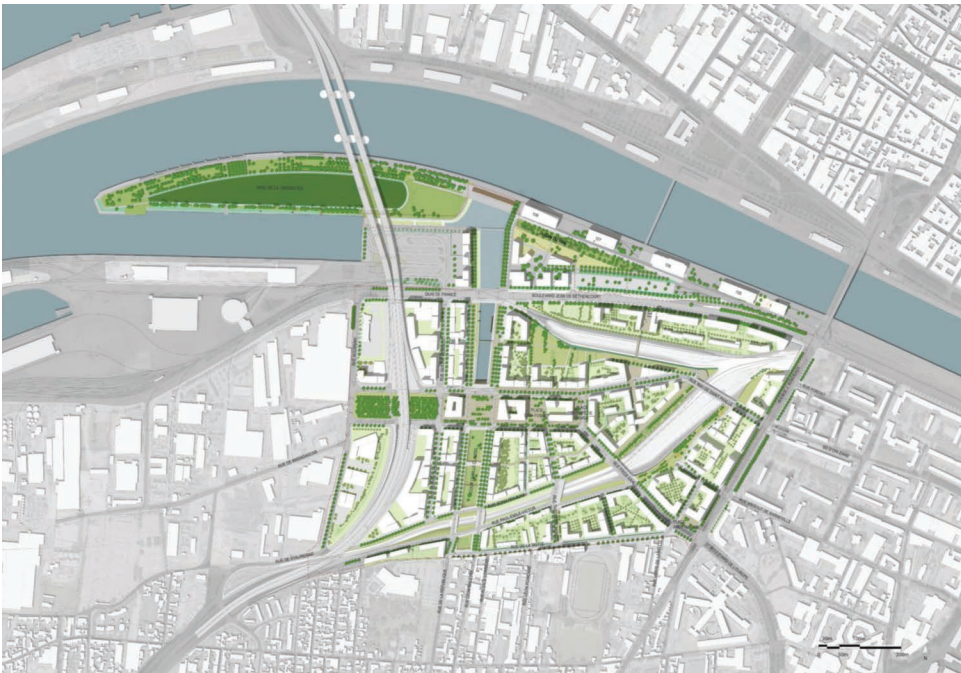


FIGURE 13.6 Jacqueline Osty, plan of the éco quartier Flaubert, Rouen, 2009 (*Atelier Jacqueline Osty et Associés, Paris*).

Preparing Territories for Future Uses

From another perspective, green space acts as a regulating element for built-up areas: it sets the rules for the sites where construction can happen, defines the relationships with the other components of the region, and responds to environmental questions. In the project of Dominique Perrault for the site of the former Unimetal factory in Caen (1994–1997), greenspaces have the capacity to give structure to urban projects, to constitute a kind of substratum, which guides the successive choices for architectural creations. This implies that the development of the urban project lasts for much longer than the architectural work. The urban framework formed by the greenspaces gives the site an immediate structure and, in this way, prepares it for future uses. It is this structuring role of the natural spaces that the surrounding region and town plan legitimize at the architectural level.

At the confluence of the Rhône with the Saône in Lyon, in a site devastated by deindustrialization, the project (1995–ongoing) by François Grether and Michel Desvigne aims to rebuild the urban fabric. A grid formed by the remains of large-scale landscape structures – rivers, parks, canals, boulevards – constitutes the basis for drawing up a general framework of natural spaces, in order to organize the new urban fabric. The project follows the gradual mutations of the area, starting from the banks of the Saône and continuing with ramifications perpendicular to the bank on the Rhône. With the framework of natural spaces as a guideline, a two-layer urban landscape develops, in which the two dimensions of the ephemeral and the perennial coexist. From a practical point of view, the strategy is that of an evolving and flexible process, reorganizing the peninsula with greenspace as a core element. The project, which is much more than just a master plan, is a process using different strategies over a 30-year period and can be adapted or challenged by the unpredictable future life of the neighborhood.

In the changing landscape on the right bank of the Garonne, facing the historic city of Bordeaux, Michel Desvignes' project (2001–ongoing) also considers the site through the lens of a long timescale: first through the connection of existing landscape spaces, such as geographic elements along the Garonne, then through the recognition of the remains of old routes and new wastelands (the traces of old plots of land – agricultural and then industrial – in strips) that are part of the district, and, finally, maintaining the size of this complex network, which can be looked at on different scales, as a prerequisite for defining construction regulations in the area. The project is unified through a complex grid of greenspaces, where blocks of trees, clearings, and lawns alternate, differentiated by alternate ways of cutting and mowing them and where the addition of concrete platforms allow a variety of uses. The result is a grid made of green corridors, hubs, or parks, which follows the orientation of the river, transforming the disused industrial sites and recreating spaces for biodiversity. This is a network that can adapt to the complexity of contemporary housing principles.

For almost three centuries, natural space in its various forms has been present as an element of urban design. After being considered, first, as an urban system superimposed on the city and determining its development; later, as a substratum for modernist urban design and as a framework for planning; and, finally, as an ecological system for redesigning urban areas and preparing for their future transformation, greenspace has ultimately provided an opportunity to criticize the contemporary city and has become a powerful ingredient for the imagination of new urban forms.

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14

GREENSPACE AS AN ELEMENT FOR A NEW URBAN DYNAMIC

Fabienne Fendrich

Within the framework of the ArchéA Project in the Erasmus + KA² Program, the approach is to focus on public space, with a particular question: how can greenspace become a constituent element in urban projects, creating a new urban and regional dynamic, beyond that of simply being a visual aspect of the project?

Analyzing the dynamics throughout France, over a long period of time, we can see that the country has been marked by three very different periods: until the end of the 18th century, France was predominantly rural; in the late 19th to early 20th centuries, France became urbanized and populations grew in medium-sized towns; today, the population of medium-sized cities is tending to decrease, while increasingly concentrating and developing in the metropolises. However, the pandemic we are currently experiencing has encouraged the exodus of the metropolitan populations toward large open spaces such as the countryside or the seaside, and greenspaces are seen as something of a new Eden. Our connection with spaces for nature, the way we perceive and use them, and how we consider our relationship to other living things are changing. It is clear that the current issues linked to the survival of man in his environment are obliging us to reinvent town planning projects and landscape design, reintroducing greenspaces into the city, as close as possible to its inhabitants. Reclaiming greenspaces, in order to live better in urban areas, has become an urgent matter.

Introducing nature back into the city is not just a testimony to the current situation. Greenspaces have always been present. This is linked to the survival of man. The first pastures and cultivated fields were developed as humans became sedentary. Along with large clearings, fences were introduced, in the form of hedges with thorny branches, in order to separate cultivated from non-cultivated areas. In the Middle Ages, life developed around the castle and inside the enclosure of the walls, and communities were pastoral. Nature was to be found inside the enclosure. This space looked empty but was in fact productive. Men lived alongside pigs, oxen, and poultry. Looking at the illuminations produced by le Maître de la Bible de Jean de Sy, as illustrations for the poetic works of Guillaume de Machaut, or the representations of spaces for nature in the *Ruralium commodorum opus* by Pierre de Crescent, one can easily see the close connections between humans and nonhumans, between

what is considered as ‘the city’ and what is a space for ‘nature’. Nature in the heart of the city is a means of subsistence. The city is not yet a place for show; rather, it is a place of contact between its inhabitants. Greenspaces were, in a way, one of the amenities that the city had to offer its inhabitants, urban resources that city dwellers had a right to expect.

The ideal of the Classical period was to consider the city as a theatre where one could witness the show of ‘order’. Nature was moved away from the center, and the city’s public square filled the space left. This was no longer a place for production but a place of prestige, the design of the facades in the square becoming a priority. A split between the city and the countryside took place. Nature began moving away from cities. Greenspace was returned to its place outside of the city and considered as a reserve of land available to meet the need for future expansion. Continuous pressure was exerted on this land due to its position in the urban landscape. It tended to be eaten into and to disappear. Greenspace no longer had a place in the city. The advent of the automobile and the shift from organic forms of energy to fossil fuels made the divide even more radical. However, the idea of nature was resisted as a kind of secular regression, and cities had parks and gardens almost as an artefact; thus, a certain concept of nature and natural spaces was developed. Parks were created in Paris out of a concern for health, as the inhabitants no longer had gardens. Nature in the city was nature brought in from elsewhere, closed in, artificial, and exotic. The parks were an expression of the demand for a certain quality of life. They were designed and planned to counteract urban development and densification, to meet the social demand for open, greenspaces. These spaces were above all for recreation and for access to an experience of nature and the social representation of such ideas. Parks and gardens were a little like the islands of an archipelago, lost in the middle of an ocean of buildings. The legacy of the Haussmann period in large cities was established according to a theoretical model, categorizing different spaces: public space was ‘mineral’ with aligned trees, gardens were protected, and isolated spaces, enclosed behind gates, and spaces for nature were to be found outside the city limits. The layout of urban spaces of the 19th century and at the beginning of the 20th century suggested nature as a framework, where gardens, parks, and forests would be interconnected (via walkways or greenbelts). From an educational and health point of view, trees became important: they renewed the air in the city and contributed to a healthy and pleasant environment. The presence of plants in urban spaces was seen as a decorative – albeit important – element. Greenspaces were considered as “islands” of nature.

In search of a more natural aesthetic for the layout of plants, a way of managing these spaces and how they functioned were then taken into consideration. Considering living things as a fundamental basis means imagining the process at different scales. Living organisms cannot be contained in simple geometric figures or in straight lines. It is more a question of fractal geometry than Euclidean geometry. In which case, our role is less about the preservation of a particular state and more about allowing certain processes to happen, creating a constructive interaction between greenspaces and urban spaces.

Gilles Clément was undoubtedly the precursor of this theory which aims to redefine the role of man in nature. Thanks to his observations and practical experiments in his own garden *La Vallée* in the French département of la Creuse, Gilles Clément applied the concept of the *Jardin en Mouvement* (the “Garden in Motion”) to public spaces, an example being the Parc André Citroën inaugurated in 1999. For Gilles Clément, the “Garden in Motion” is a way of managing and, therefore, of designing a garden: plant species can grow and develop freely. This approach is about fostering cooperation with nature, giving observation

an important role. The project develops through time and space. The protection of nature is dynamic and not static and is focused on finding the best possible adaptation to the site (“Do as much as possible ‘with’, and as little as possible ‘against’”; Figure 14.1).

In a similar way, *Le Champ Libre*, formerly the *Parc des Bruyères*, located in Rouen, testifies to this approach, where the management of greenspaces generated new uses. The landscape design office *Mutabilis* has been working on the transformation of this former racecourse since 2018. *Le Champ Libre* (meaning ‘open field’ and also ‘open, free space’) includes two main parts: one on the *avenue des Canadiens*, and the other on the *rue du Madrillet*. This wide-open space includes a large grassy area of 25,000 m², with small wooded areas or copses, which can be used for picnicking, playing games, or for large public events. To the east, the second area, now called the “edible forest,” has more trees. A sustainable urban agriculture project is being developed, focusing on respect for the environment and including a preservation orchard and a “grazed forest” with sheep and horses. The Metropolis of Rouen Normandie also wanted to include a 2.5-hectare permaculture farm. As project leader, they are both owner and manager of the land. The Metropolis also invested in some of the farm facilities. Besides its economic function, the permaculture farm is also a showcase for how this approach is being developed locally elsewhere. Certified as an organic farm, the project organizes and develops outreach activities to raise awareness of urban agriculture, as well as offering training for farmers, in particular for permaculture and organic farming techniques.

This space given to nature should be considered as part of a new dynamic for urban planning. It is not only an ecological corridor that cuts into the heart of the city but also an extraordinary reservoir of biodiversity, an area giving protection to both humans and nonhumans. Here it is a question of reclaiming greenspace as an element giving structure to the city’s development: a solution providing continuity and a complementarity of uses and social connections, between the different components of nature present in the urban fabric.

Another exemplary, experimental area is the *Transformateur* site located at Saint-Nicolas-de-Redon in the Loire-Atlantique, along the valley of the Vilaine river. On the border of three neighboring French départements – Loire-Atlantique, Ille-et-Vilaine, and Morbihan – the site is at the heart of an urban center with nearly 20,000 inhabitants. Historically, this



FIGURE 14.1 Jardin Javel Citroën. Concepteur Gilles Clément. Photo © Fabienne Fendrich, 2016.

wetland had been used by industry (the Sébilleau factory, and the gradual extension of other industrial zones, the SEMES factory, then the LECOQ company, a supplier of agricultural equipment). In 2000, the site was abandoned due to repeated flooding. From 2005, the site was taken over by the *Conseil Général* of the Loire-Atlantique. The creation of practical educational workshops on site by the *École Nationale du Paysage de Versailles* (a national landscape school) has made it possible to gradually build a landscape of hope, based on cultural development. At the *Transformateur* site, the rule is simple: do it together, using everything there is available on site. The rule is also to not remove anything from the site or import anything and, therefore, to use only what is available on site, with a real economy of means. Anything can be a raw material: it is simply a matter of tidying up, organizing, and prioritizing activities on site. This is a reversal of the system. It is nature reconquering the site, acting as a magical driving force for the project and guiding its development. Non-recyclable waste can be stored and becomes a revitalized gabion wall, an old metal tank becomes a stork's nest, and a pile of old tree stumps becomes a rabbit warren, creating a "jard'andain" or "windrow garden." Places previously marked by time and industry are conquered in a reasoned and original natural process, where urban developments can be gradually added (Figure 14.2).

Admittedly from the smaller scale of parks and gardens, these experiments can be developed on a larger scale, initiating a new paradigm for the creation of a city. The idea is to allow the city to integrate a natural flow or progression. The city should no longer try to stop constant exchange. The city must allow for mobility. What matters is no longer what the city encloses but rather its capacity to be influenced by that which moves through it. This is the case in Caen for the site *La Prairie*. *La Prairie* is a green landmark, of great historical and natural interest: covering 90 hectares and located in the city center, it is a place for recreation, jogging, or taking a stroll, but it also acts as a spillway in case of flooding. The city of Caen developed in a marshy valley, crossed by the Orne river and its tributaries, *les Odon*, as well as by a Roman road. Urbanization occurred between this Roman road and the Odon rivers. As early as 1027, *La Prairie* is mentioned in a text that qualifies it as "belonging to the Duke." Through a series of acquisitions and donations, a part of these



FIGURE 14.2 Transformateur de Redon. Photo ©Fabienne Fendrich, 2006.

meadows, known as *La Prairie de l'Abbé*, came under the control of the *Abbaye-aux-Hommes*. This did not prevent the inhabitants from grazing their animals there during periods of regrowth of the grass. This tradition was passed on by Norman law up until contemporary times. In 1837, the first trotters' horse race was organized in *La Prairie*. The site was later listed in the inventory of 1932, as a protected area, liable to flooding. *La Prairie* is a natural wetland, a site for rural observation and a place for discovering the local flora and fauna. It plays an essential role in the flood management of the Orne. Special protection measures have been introduced, aimed at preserving its character and reinforcing its recreational uses. It is defined as a protected natural zone (*zone Nda* in the French land-use plan) as it is particularly exposed to the risks of flooding from the Orne. Improvements include clearing work for botany and entomology studies, re-profiling the ditches to create gentle slopes, and reworking parts of the banks of the pond, to allow for better interactions (between plants, insects, amphibians, birds), without disturbing the natural state of these places. *La Prairie* is thus a place not only for the social life of the people of Caen but also for herons, cormorants, moorhens, and black-headed gulls or snipes, rarely found in such proximity to a city. There is thus the idea of a shared, dynamic ecosystem, which welcomes a choreography with several participants, human and nonhuman, revealing shared rhythms and fragile, ephemeral trajectories (Figure 14.3).

Greenspaces existed before urbanization. Being rooted in these spaces allows the city to continue to develop, placing it in a natural flowing process that goes beyond the initial design. The combined notions of urban development and protection of nature, which are a priori contradictory, can in fact help to reverse this paradox, creating a constructive interaction between natural spaces and the urban spaces where they are integrated, the latter contributing to the protection of urban nature. This was the case with the development of the beach in Le Havre, designed by Alexandre Chemetoff in 1994, and carried out together with the Landscape Office and with the technical services of the city of Le Havre. The idea was to enhance the seafront of the city, at the time much more focused on the estuary and its port activities. The development project reorganized the passage from the sea to that of the



FIGURE 14.3 La Prairie de Caen. Photo libre de droits.

city. The two elements – natural space and urban space – were no longer simply juxtaposed but instead intimately linked, through different transitional spaces. Different horizons, uses, and timescales all came into consideration. Alexandre Chemetoff did not want to focus on the decorative aspects of the project; instead, he relied on local geography and history in the creation of the transitions from one element to another. The permanent landscape was gradually reorganized: from the horizon of the sea to the city, from the alluvial plains to the hills and vice versa, the artificial and natural elements were stratified, forming parallel lines down to the sea, creating a wide-open landscape. The elements used – containers for seasonal activities, meadows and grass as a continuation of the hill, and white railings along the boulevard – reflected the heritage of the city and fully involved the sea in the renewal of the urban identity of Le Havre. This project was an important initial driving force helping to transform the perception of greenspaces in the city. This is illustrated by the 2020 *Equerre d'Argent* prize, awarded to landscape designer Michel Desvigne for his work on the renewal of the quai de Southampton in Le Havre, between 2017 and 2019. On the city's southern seafront, the redevelopment of the historic quayside, known as the *Grand-Quai*, has enabled the greenspaces developed by Alexandre Chemetoff to be fully appreciated by the city, with nearly 10 hectares of public space (Figure 14.4).

Today's important issues, such as biodiversity, landscape, pollution, transport, water resources, and flora and fauna, are no longer restrained within frameworks, or models, with a fixed or limited scale. There is therefore no longer one single way of creating the city, nor one single model. This is especially true in this time of climate change, because movement will be one of the only ways of surviving for both humans and nonhumans. To allow for this, cities must not block these movements.

These different considerations – be they social (the potential for recreational activities) or ecological (the qualities of the ecosystem) – reflect a change in the way we identify and outline natural spaces and the associated ways of protecting them. A shift is taking place, moving away from a strict protection of biodiversity in cities to a broader protection of



FIGURE 14.4 Aménagement du littoral le Havre. Concepteur Alexandre Chemetoff. Photo © Fabienne Fendrich, 2020.

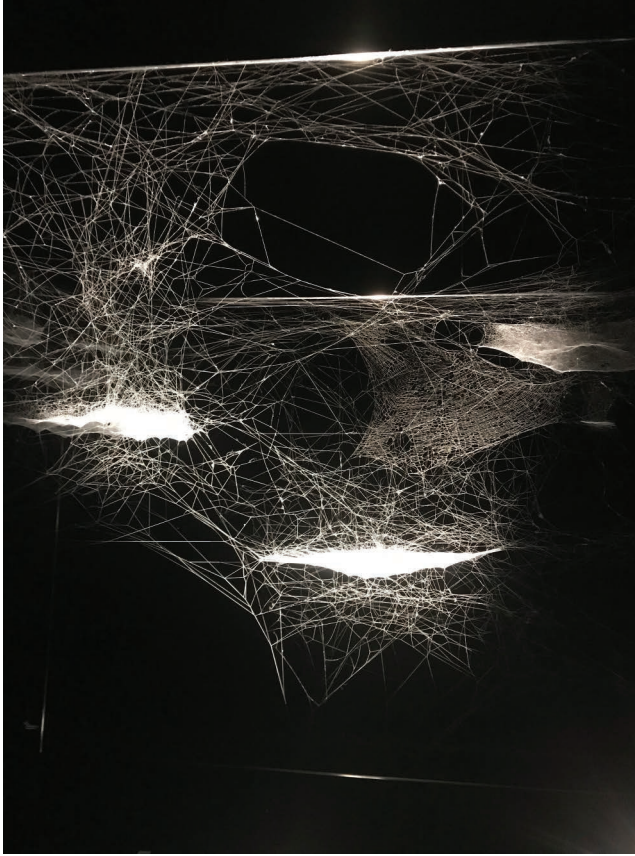


FIGURE 14.5 Exposition “ON AIR.” Tomás Saraceno. Palais de Tokyo. 2018. Photo © Fabienne Fendrich, 2018.

urban nature. Identifying and protecting greenspaces contributes greatly to the attractiveness and development of a city. There are various, more or less direct impacts linked to the presence of numerous protected greenspaces in the city. It is possible to observe and quantify the economic benefits, the impacts on the health and well-being of the inhabitants, the feeling of belonging and being connected to the city, increased knowledge of nature, or the development of more civic behavior. The resulting benefits in terms of the possible different uses (walking, playing sports in a natural setting) or the ecological value (providing continuity with peri-urban greenspaces) are the reasons for this success. An analysis of the new trends that are emerging shows how the function of nature in the city is becoming more complex. With urban development going beyond aesthetics and no longer considered a simple response to a social demand and having become more than a question of regional economic development or a consideration for environmental impact, a need for balance is appearing as an essential factor in urban development plans and strategies. The objective is not to ‘stage’ nature but rather to co-create a shared project, starting with the city’s inhabitants (human and nonhuman) and getting them to participate in a shared design for the future. The exhibition “ON AIR,” a ‘carte blanche’ invitation given to Tomás Saraceno at

the Palais de Tokyo in 2018, was an artistic symbol, heralding the shift about to occur. Indeed, the exhibition showcased the work of living spiders and presented itself as a fragile and poetic changing ecosystem. There is a multitude of these animate and inanimate presences that coexist, creating works of art and allowing us to perceive new fundamental patterns and topics such as contextuality, frugality, bioclimatic design, or simply everyday life and the desire to inhabit the world (Figure 14.5).

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15

USES OF MAPPING

Methods of Investigation and Ways of Narrating Territory in Architectural Practice and Teaching

Anne Portnoi

Mapping, understood here in the sense of a set of documents (maps, plans, diagrams, sections, models, photographs, sketches, accompanied by texts and captions, etc.), reflects the residential value of a territory's geography or reflects potential preexisting rules. These are all elements that need to be orchestrated in urban projects or interventions on a territorial level.^{1,2} Cartography's mission is also to narrate the story of the territory. This chapter attempts to distinguish several forms of storytelling that often overlap.

Using a case study from architectural practice and also examples from the educational framework, the author presents here a methodological distinction of three different uses of mapping by architects who are keen to connect architecture with territory and urbanization with greenspaces. This also corresponds to the three different reasons an architect wishes to create maps: to investigate, to transform, to be evocative. Examining these examples also gives us information about the possible sequencing of these investigation techniques and about the ways in which they can be used in context. Here, the author presents a first case study that describes a cartographic survey of the territory of Al Hoceima bay in Morocco carried out by landscape designers from the *Agence Ter* office. The author then analyzes several examples from her teaching experience at the *Ecole Nationale Supérieure d'Architecture* in Normandy and at the *Ecole d'Architecture de la Ville et des Territoires* in Paris-Est.

The first approach involves investigating and reconstructing. The story is used to uncover a series of events or actions with the aim of revealing a truth. Using these tools, the architect is able to illustrate and document the situation. An example is the work of *Forensic Architecture*,³ a British research group composed mostly of architects. The group uses tools normally used for the reconstruction of the urban environment to produce evidence in legal proceedings related to cases where human rights have been violated.

More commonly, architects use mapping with the aim of transforming a territory. The urban project unfolds over a period of time which is counted in decades and involves many different actors. Storytelling creates a shared interpretation of the territory. Establishing a common point of view of the territory is a way of guaranteeing its transformation. The production of a set of maps serves to give a single point of view and to gather the different

actors of the project around a strong image, making a development strategy possible. This was the case with the map “Les Propriétés de Lucifer” (a map of “places belonging to Lucifer” identifying unpleasant areas) or the maps illustrating the concept of the “porous city,” both developed in 2008 by Bernardo Secchi and Paola Viganò of Studio 08 & 09, for their study of Greater Paris.

Finally, mapping may also have the sole purpose of touching the imagination, being evocative and creating an emotion, that is to say, representing a story in itself. The descriptive surveys of landscapes by James Corner and Alex Mac Lean⁴ stem from a desire for narrative. James Corner describes cartography as a creative activity and as a cultural project. These drawings or collages are produced with the aim of reformulating what is already established: cartography renews things again and again.⁵

A Case Study: The Office Agence Ter at the Bay of Al Hoceima

The study of Al Hoceima Bay by the *Agence Ter* office dates back to 2008, well before the 2016 protests that erupted in the Al Hoceima region. A French developer of medium size had the opportunity to acquire land along the coast that belonged to a member of the Moroccan royal family. Before putting the plots up for sale, the owner had a project for a large marina drawn up on this site. The French developer, who had long been developing projects while also taking environmental issues into account, wanted to cultivate ‘sustainable tourism’ in the area. He then turned to the *Agence Ter* to establish a diagnosis of the landscape, assessing the potential for building on the site, with regard to the environmental qualities of the land.

The developer did not give any documents to the *Agence Ter* to enable them to carry out this study. It was also impossible to obtain more information from the town planning authorities in the city of Al Hoceima. The study was thus based initially on the collection of data available on the Internet (climate, geology and geomorphology, human activities, hydrology of the *Wadi* or ‘*Oued*’ valleys, etc.). This first phase of the study revealed, on the one hand, the importance of the constraints linked to water and the risk of local overflows in the *Wadi* valleys and, on the other hand, the richness of the ecosystem, both on land and in the marine environment. Controlling water is a key issue in the region, which in 1981 led to the construction of a dam to help control and store run-off water, as well as a hydraulic network to distribute the water downstream.

The second phase of the study corresponded to a graphic transcription of the observations made of the geography on site, giving a more sensory appraisal and including details on the character of the different environments. The graphic renderings of these observations show in particular the visual perception of the horizons of the bay, as seen from the roads that go across it. The graphic interpretations distinguish the different environments created by landforms, hydrology, or human occupation. The hydraulic system is identified as being made up of two types: a network of pipes to irrigate the land and the canalization of the *Wadi* to control the riverbeds and flooding. Data collection and *in situ* observations were used to evaluate the program and allow the *Agence Ter* to assess the relevance of sustainable tourism. The quality of the unspoiled landscape of Al Hoceima Bay represents an asset, both for the development of agritourism and for that of the bay’s horticultural economy (Figure 15.1).

The third phase involved a graphic survey that made it possible to establish an initial landscape diagnosis of the territory of the bay, including topography, water, plantations,

Détail du parcellaire

Parcellaire en lames de parquet

grandes parcelles très géométriques et orthogonales



Détail du parcellaire à proximité d'un douar

Parcellaire en mosaïque

de petite taille, assez géométriques mais de formes irrégulières parfois accompagnées d'arbres

Culture en terrasses sur les reliefs (photo 2)



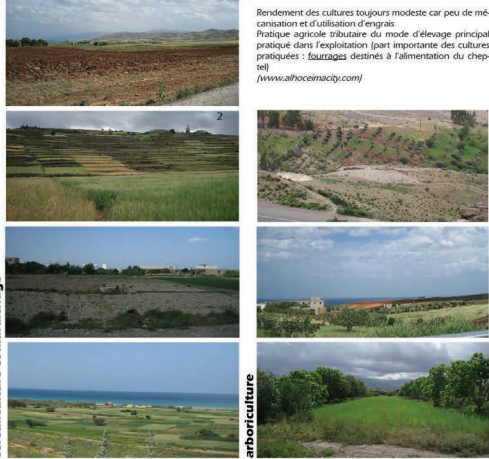
céréaliculture et maraîchage

Agriculture et parcellaire

Agriculture : principal secteur de l'économie régionale, regroupe 60% des actifs

- céréaliculture (principalement agriculture en bouri) : orge et blé
- arboriculture : amandier, figuier, olivier...
- maraîchage/primeur (petites exploitations <1 ha parfois irriguées)
- élevage (bovins, ovins, caprins)
- apiculture

Rendement des cultures toujours modeste car peu de mécanisation et d'utilisation d'engrais
Pratique agricole tributaire du mode d'élevage principal pratiqué dans l'exploitation (part importante des cultures pratiques : fourrages destinés à l'alimentation du cheptel)
(www.athoimacity.com)



arboriculture

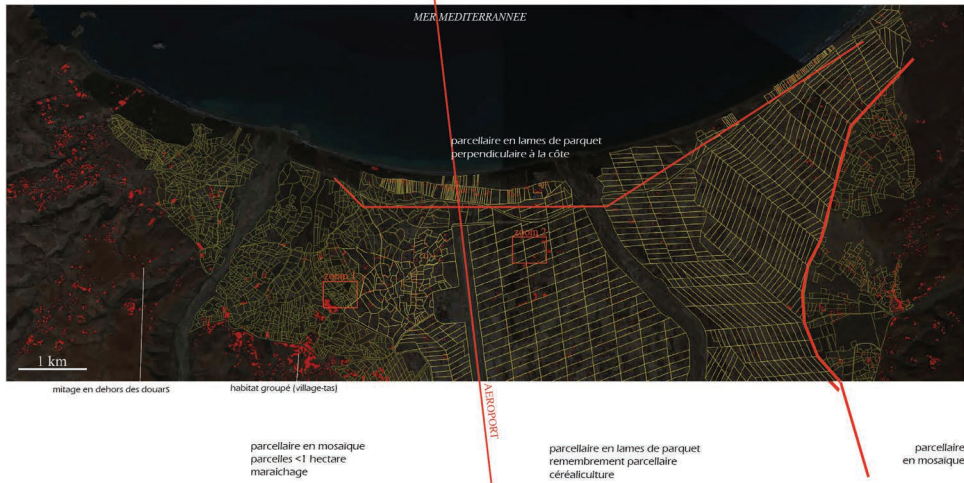


FIGURE 15.1 The graphic interpretations distinguish the different environments created by land-forms, hydrology, or human occupation – Agence Ter 2008.

infrastructures, as well as the location of the buildings. The graphic survey then compared two different states of the bay: that described in a 1967 map from the archives of the *Institut de géographie* in Paris, which represents the area before the construction of the *Abdelkrim al Khattabi* dam, and the current situation as it appeared on the aerial photo at the time of the study. The purpose of this comparison was to take into account the changes in the area, by comparing the elements of the landscape (water, plantations, sand dunes, buildings, land consolidation). A cartographic analysis highlights the qualities of this landscape as well as its fragility and the fragility of the systems installed there. The most obvious signs of this

instability are the retreat of the dune ridge, due to the canalization works on the *Oued Nekôr* as well as the significant increase in the number of dwellings built in an unplanned way along the main road. The hydraulic structures allow for the very rapid evacuation of rainwater toward the sea, resulting in a retreat of the coastline of up to 170 meters at the mouth of the *Oued*, where most of the land which was put up for sale is located. Taking this into account, it could therefore be said that, on a large part of this land, along the ridge of the dunes, building was not recommended. The study also revealed that coastal erosion was a known problem. The coast had also been partially wooded in order to stabilize the dune. The research using maps thus not only revealed that the line of the coast was retreating but also that the process was a known problem and that this had been concealed from the buyer. In the context of the project, these first steps of the cartographic study clearly form part of an investigation process, a search for truth, an intrigue (Figure 15.2).

The fourth phase of the study was no longer part of an investigation but became an element of urban design, through an interpretation of the landscape. The study carried out by *Agence Ter*, which was firstly an analysis of the land in search of the truth, then led to the creation of a set of recommendations, allowing the development of the landscape as an idea.

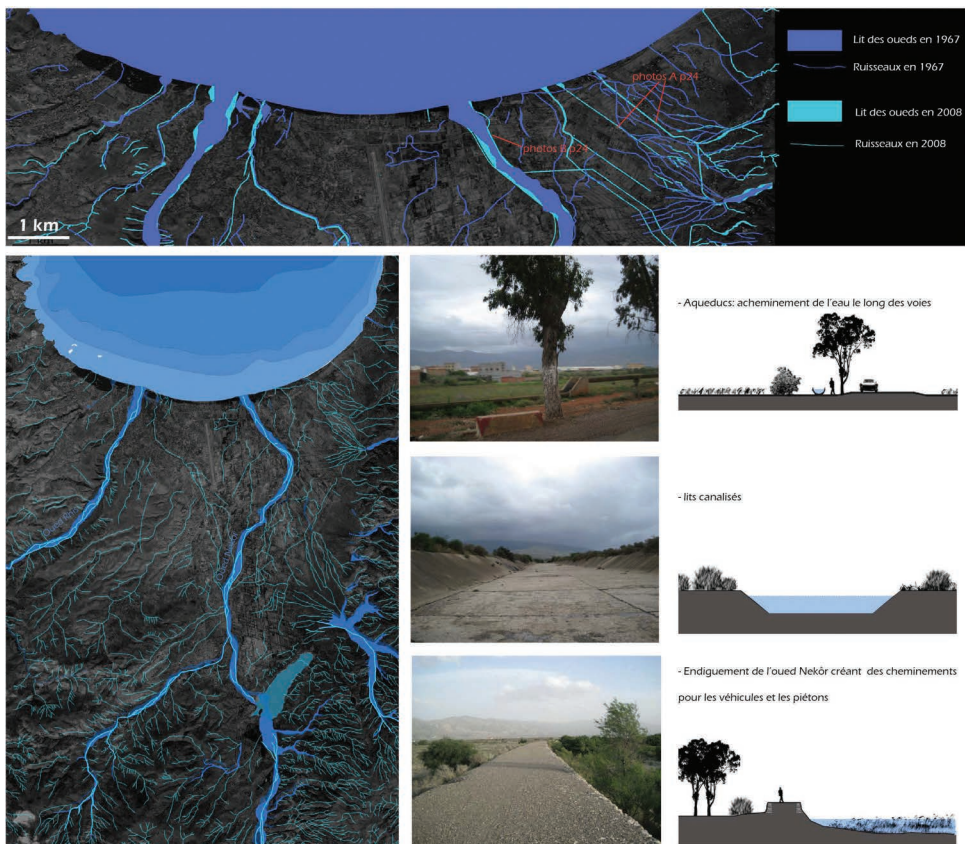


FIGURE 15.2 A cartographic analysis of the hydraulic structures and comparison of two different states of the Al Hoceima Bay – Agence Ter 2008.

The way in which the territory was considered made it possible to make proposals for the use of different spaces and to design its transformation.

The complementary analysis carried out during the first steps showed that the elements that give structure to the landscape were not sufficiently established to allow for a development that would not threaten the balance and the coherence of the landscape of the bay. These elements needed to be reinforced in order to allow for an intelligent form of development, through the idea of the landscape itself. The aim was to define guidelines for the sustainable development of the bay. Following their diagnosis, *Agence Ter* was able to make recommendations and to define the main principles for intervening in the territory, at different scales. This was by no means a feasibility study, but rather a hypothesis for the possible reforestation of the coast, planting a 400 m wide strip along the dune ridge, and including the diversification of the tree species present. This wooded zone has several functions: stabilizing the dune, providing shelter from the wind, and creating a horizon. The scenery of the coastline is laid out in relation to the main road which acts as a viewpoint. The buildings are constructed in the wood behind, and the first 100 m of woodland are left free of construction. At the back of the dune, in the forest, the developed area is protected from the winds, is better oriented and shaded, and takes advantage of the coolness of the humid zones where part of the wastewater is treated, allowing for the overflow of the Wadi and enriching biodiversity. Finally, these main principles allow an appropriate building perimeter to be calculated for the available land. These recommendations are also based on a more comprehensive vision of the future of the bay and its possible economic development. The study suggests the creation of an agricultural park and the development of a horticultural economy, and a plant nursery as a response to the demand created by large urban projects around the Mediterranean, in Morocco and in Europe. The possible narrative for this territory was thus developed from both a spatial and economic perspective.

Storytelling in the Teaching of Architecture

In the case of teaching exercises, the different survey methods and cartography registers used as an approach by *Agence Ter* need to be simplified in order to facilitate the acquisition of knowledge by the students. The three different storytelling formats that can be applied when mapping a territory – investigating, transforming, being evocative – are used differently depending on the class year and the framework in which they are being taught. The objectives and expected results are not the same for a project workshop or for a tutorial on urban or territorial analysis.

At the ENSA Normandie architecture school, as part of the ‘project’ workshop, there is a tutorial in urban analysis that introduces first-year students to various tools for representing space and the urban landscape. Students map a neighborhood before working on a plot. The way in which the different elements are represented are not dictated to the students; on the other hand, the application of a certain number of tools (perspectives in sequence, surveys of urban fragments and situations, close-ups, sections at different scales) introduces the students to the notion of what is ‘already there’. This allows them to use their observations when defining the themes for the projects that they will subsequently develop (Figure 15.3).

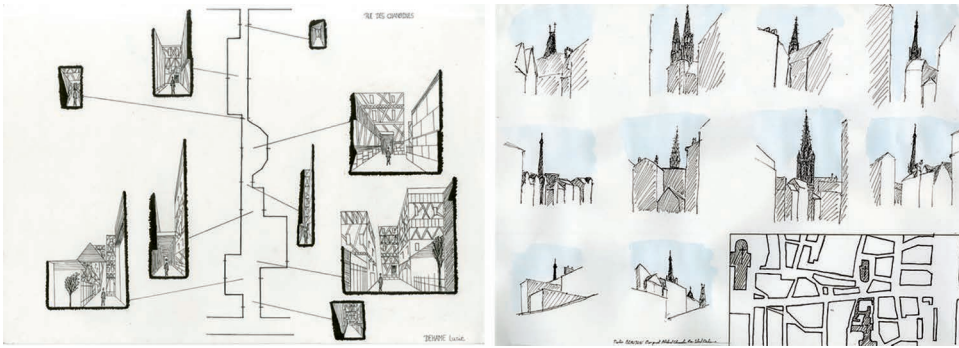


FIGURE 15.3 ENSAN, first-year design studio (2017–2018). L. Engrand and A. Portnoï are associate professors, and the students who participated in the design project include C. Abelard, M. Beaujon, K. Ben Tabet, A. Bocquet, E. Chasselín, and L. Dehame.

The work given in the third year of the undergraduate degree course combines two types of spatial register. The student learns to ‘read’ a territory, to understand its economic and social issues and to develop exploratory work on the design of public space and residential fabrics. Over a period of 5 weeks, the students develop a cartographic survey of the territory, with the aim of raising questions that will be answered by the project. This is to introduce students to the idea of making a diagnosis of a territory and the use of mapping a site in order to define a set of questions. The students have to use a set type of analysis grid. This grid is established in such a way as to highlight the structure of the territory and the landscape as well as the residential value of the geography, that is to say the relationships between these geographical characteristics and the urban history, major routes, location of important facilities, use values, qualities in terms of space and landscape of public spaces, distant views and perceptions, and different urban forms of the territory. Vacant or undervalued spaces, margins, and fractures in morphology are also highlighted. This cartographic work is used secondly to help identify issues and a corresponding development strategy as well as to define the most relevant sites for projects with regard to these questions. To exemplify the different possibilities, different scenarios for transformation are verified across the architectural scale. The last weeks of the semester are devoted to reformulating these ideas and looking at the ways in which the subject can be most suitably represented (Figure 15.4).

In the case of the undergraduate degree course, the different rules of visual representation and the use of a ‘grid’ for the interpretation of a territory are at the heart of what the students learn. The diagnosis approach introduces students to the use of inquiry – both as a means of searching for truth and as a means of transformation. While the undergraduate students study mapping in order to be capable of giving a coherent and personal reading of a territory, this method is mainly developed in the postgraduate/master’s course, where students are required to identify issues and relate the story of a town or city. In the master’s course at the ENSA Normandie School, the workshop that belongs to the module “architecture, towns and territories” focuses on the Seine valley and the medium-sized towns and urbanized countryside in the Normandy region. Following the example of the *Agence Ter* approach, the project workshop aims to design projects that will be ‘in equilibrium’ with their

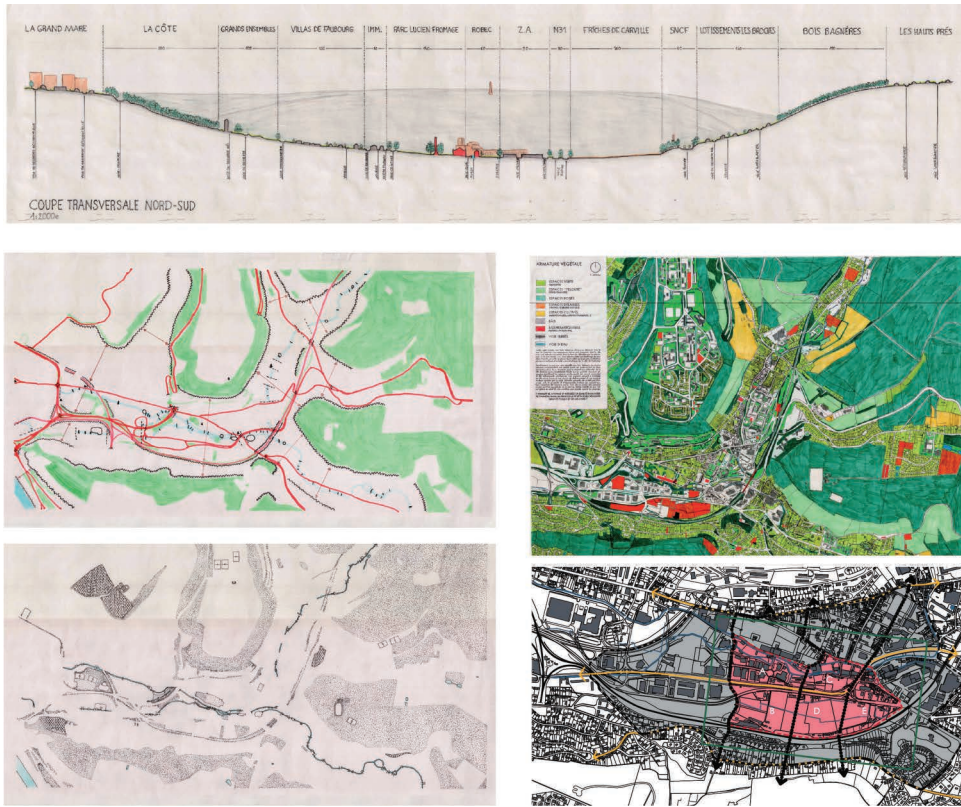


FIGURE 15.4 ENSAN, third-year design studio (2016–2017). J. M. Bichat and A. Portnoi are associate professors, and the students who participated in the project include Ch. Arzur, L. Daunora, A. Salaün, J. Simonnet, and M. Yahi.

context, using the specific constraints or potentials of these spaces. The questions raised relate not only to how growth occurs in the urban situations studied but also to changing modes of inhabiting spaces, mobility, and services provided in these territories (Figure 15.5).

Particular attention is paid to preserving and enhancing the exceptional geography of the sites studied, in terms of natural resources and heritage, in a territory that is in parts affected by climate change. The exercise takes into account environmental issues and the contemporary importance of risk, focusing in particular on the renewal of non-urbanized spaces, and on questions relating to public spaces that are in part shaped by water management.

The semester is organized in four steps: surveying and understanding the territory together with creating a synthesis of existing studies and documents; analysis considered as knowledge and definition of a transformation problem; proposing a scenario and different tests at the architectural scale; and the formalization and representation of a story. Thus, teaching centers on the analytical description (drawings, interviews, governance, and history) of the territory being studied. Cartographic tools are used for ‘reading’, describing, and conceptualizing a contemporary territory. These tools also constitute a body of knowledge enabling the students to forge an individual opinion on architecture and the organization of space. Students are asked to combine analytical knowledge with historical and

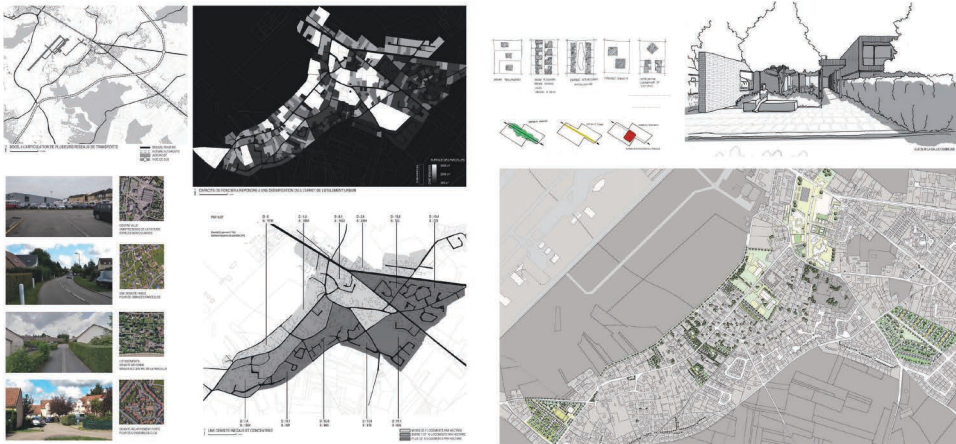


FIGURE 15.5 ENSAN, fourth-year design studio (2018–2019). J. M. Bichat and A. Portnoi are associate professors, and the students who participated in the project include M. Couchaux, B. Bouchez, C. Sarrazin, and V. Lefevre.

theoretical knowledge in order to develop spatialized projects that relate to the questions asked. Although in the third year the teaching is based on the study of densification and residential projects in different forms, in the master's degree, the course content is not defined by the professors but instead by the territory itself. The work is completed by the creation of a scenario and the building up of a story.

Apart from allowing students to learn in a progressive way about the tools for territorial diagnosis, the format of the exercise also changes the method of narration. When studying 'projects', students are required to investigate, transform, and be evocative. However, in the "architecture, towns and territories" module, in the case of the tutorial for second-year students called "telling the story of the territory" devoted to mapping,⁶ it is a question of exploring this tool in its narrative form. This analytical exercise is disconnected and dissociated from the issue of site transformation. The students are encouraged to understand a certain number of tools and to tell a story about the territory with no other objective than that of giving a certain perception of it or of stating their individual point of view regarding the territory in question. The story told is thus clearly associated with an evocatory function, a means of developing the imagination. The organization of the course in two-week phases corresponds to the themes used: understanding the site, mapping elements of the landscape, structure and perception, mapping public space, mapping the urban fabric and making an inventory of urban forms, and finally mapping in order to illustrate a point of view, a story. Each group of students are free to choose and amplify a particular point of view of the territory. The question of nature in the city is a recurring theme, whether, for example, through the relationship between built and natural elements in different urban forms or the role of infrastructure as a limit or a vector for biodiversity (Figure 15.6).

Whether it is linked to a development strategy or not, the story told for the territory is thus destined to be shared with a set of different actors in the long term. The workshop from the master's course allows for partnerships with local authorities and other stakeholders from the territory. From a pedagogical point of view, placing students in the position where they

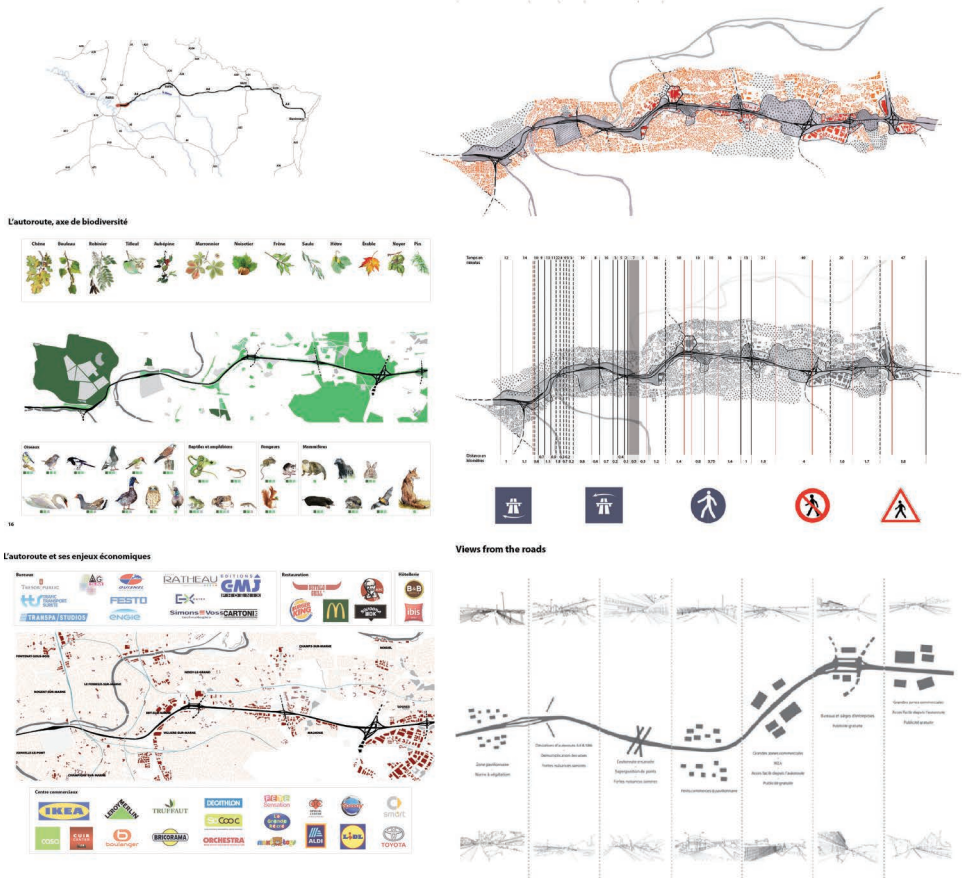


FIGURE 15.6 EAVT-Paris-Est, second-year tutorial class (2018–2019). A. Delchet and A. Portnoi are associate professors, and the students who participated in the project include C. Felix, L. Hamon, A. Salaün, and A. Michel.

can bring together various different interlocutors, visions, and dimensions is an essential teaching approach, giving them a better understanding of a territory and how it is managed. Conversely, the educational framework also transforms the actors' relationships with their territory (different especially from the relationship the contracting authority has) and thus their frame of mind and their receptivity to a territorial narrative. The resilience of the territories is enriched by the fact that these actors are confronted with other perspectives, enriching their vision beyond that of actions and responsibilities. The educational framework allows for the development of many differentiated and varied interpretations, that can often be unexpected, thus increasing the physical knowledge of a territory. The educational system, in its own way, thus acts positively, as a means of increasing the resilience of the territories.

Notes

- 1 This article is an extract from a conference given as part of the Erasmus+ Programme, ArchéA “Spaces of the City. City of Spaces.” Rheinisch-Westfälische Technische Hochschule, Aachen. September 19, 2019.
- 2 Lootsma, B. 2003. *Synthetic Regionalization: The Dutch Landscape toward a Second Modernity*. In J. Corner, *Recovering Landscape*. New York: Princeton Architectural Press.
- 3 <https://forensic-architecture.org>
- 4 Corner, J. and A. S. MacLean. 2000. *Taking Measures across the American Landscape*. New Haven, CT: Yale University Press.
- 5 Cosgrove, D. E. 2002. *Mappings*. London: Reaktion.
- 6 Second-year students from the undergraduate degree coursework 6 hours per week in a group of 25 students with two professors, an architect, and a graphic designer.

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Corner, J. and A. S. MacLean. 2000. *Taking Measures across the American Landscape*. New Haven, CT: Yale University Press.

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16

TOWARDS A MORE “NATURAL” CITY?

Jean-Marc Bichat and Philippe Chavanes

The progressive transformation of “inherited” urban planning models, based on the duality of city and “nature,” is affected by climatic and environmental issues, by the transition from an extensive development model toward an intensive one, by territorial crises, and by citizen’s current aspirations. Although we have neither the means nor the scientific skills for a precise examination of this question, we nevertheless propose a description of some of the most notable milestones:

- The razing of fortifications, boulevard walkways, and “embellishments”: from a “closed” city to an “open” city, the city opens up and is turned toward the countryside.
- French formal gardens and aristocratic territory: from the staging of spaces such as parks, using the ideal of geometric regularity, to the ordering of rural spaces, the territory is covered with aristocratic spaces for hunting, royal routes, parks, and castles.
- The bourgeois city: from the dualism of the city (urbs) versus nature, to the city as a park, the unity of cities through a network of openings, parks, and walkways inherited from gardening as an art form.
- The American grid: geometric abstraction as a means of controlling all the spaces in the city. Manhattan and Central Park: nature encompassed in a city with space crossing through it.
- The garden city: from the critique of the industrial town to the rural ideal of the town in the countryside.
- The “radiant city”: from the reform of the city to its dilution in an idealized nature, an Arcadia without substance, like the abstract background of a painting, an essentialist approach, with nature paradoxically becoming more present due to the space given to cars. Nothing is left between buildings and the landscape.
- Contemporary, neoliberal space: the transition from spaces to networks, where there is neither city nor countryside, where there is nothing more than flux, connections, and nodes, a space that can be consumed, crossed through, a space without territory.
- And today: from space as a place to space as an environment or “milieu” (a semi-space?).

Should we seek to change these “models” giving nature “civitas”?

“Nature”¹ would now seem to be the essential, primary matrix of any transformation, both in terms of heritage with the aim of protecting each natural reality and expression of nature, or on the contrary as a form of renewal, restoring and strengthening nature’s presence, considerably degraded over the past century.² After the modern city, a more natural city would thus emerge.

For contemporary town planning and its application, this natural city seeks to define “empty” spaces differently: no longer as a space for representation and appropriation to be used in the design – mainly a question of subtracting from “full” space – but rather as a “milieu,” or environment where life has its source. Taking on the role of a foundation for the city project and its design, the *raison d’être* and meaning of this space is therefore to be found outside humanized space.

We are therefore faced with a contradiction in thinking about the city: it is the primary manifestation of civilization, and we here consider it as what it is fundamentally not.

The old demons of anti-urban thought then reappear, the dialectic of city versus nature and its accompanying demagogic speeches, simplistic oppositions, functionalism, and ways of thinking that are limited to different sectors. Those who support sustainable methods of transport are in fact the road engineers’ best allies, as Christian Devillers observed 26 years ago.³

As the anxiety of the climate emergency seems to push us further toward amnesia, we need, on the contrary, to adopt a position of greater historical awareness.

If we are convinced that the “anti-urban” doctrines that have been at work for more than a century have not helped (far from it) the condition or the situation of natural or rural spaces.

If we are convinced that there is no future for civilization without a future for the city, that the contemporary climate situation and the associated anxiety mean that we must no longer think by positioning ourselves one against the other.

then . . . we must think of the unification of this duality.

This means we must commit to the difficult and exciting mission of bringing different aspects of our knowledge together, without neglecting any them:

- Knowledge of landscaped spaces: layout, geometry, levelling, divisions and subdivisions, construction;
- Knowledge of networks which are both tangible and intangible;
- Knowledge of plant and animal life, of earth, water, sun, and wind.

This forces us to fit together several different time scales: the sedimented time of inhabited, organized space, the accelerated time of flux, instantaneous digital time, the biological time of living organisms and the cyclical time of the seasons, and the time we still have left.

The work presented below attempts to address this question – either within the framework of projects developed by the *germe & JAM* collective or within the framework of educational work.

We consider this question in two ways – on the one hand, that of otherness, and on the other hand, that of integration – seeking to test, and sometimes build, the means of finding an answer.

The work is based on a tradition: European urban culture, as it is inscribed in a history of ideas, cities, and projects and also on a discipline: architecture – as the knowledge and design of spaces located in particular places, built upon and inhabited.

The work proposes a combination of different approaches:

- Geography and territory in the context of a city that has become “territorialized” or rooted in a particular place, in which green spaces, infrastructure, public spaces, and urban fabrics fit together, and where urban areas and open spaces are in a reciprocal relationship of opposition, of equivalence, the continuity of which must now be considered. The way in which the territorialized city will find unity must now be established, and its public spaces, its roads, its infrastructures, its landscape, and its residential areas must be questioned. The limits of the city must also be decided upon; its integrity, and also that of non-urbanized spaces, depends on it.
- The anthropological aspect of space, considering that the recognition and articulation of public and private spaces is still the principal question concerning inhabited space. This question must be reexamined from the perspective of three different points of view: the integration of modern paradigms into the space’s urban dimension, contemporary aspirations (current “new practices”), and ecological issues.
- Public space has to be continuous, to be accessible to all, and also to act as an institution, carrying a shared history combining the past and the present. The current aspiration for these spaces is that of leisure activities and the new tendency of a move toward landscape and nature. With this tendency, one of the explicit values of contemporary public space is that of opening up to geography and landscape – therefore situating ourselves – to consider public space as a milieu – a vector of ecological continuities – and as infrastructure – an architecture of networks.
- Urban fabric,⁴ largely forgotten by French town planning, in a context where planning based on a master plan is both criticized and hegemonic, and where the “*macrolot*”⁵ or large plot grouping smaller plots together,⁶ presented as the magic answer, is anything but sustainable. Questioning the make-up of contemporary urban fabric and asserting the possibility of a project nevertheless constitute a fertile way of thinking about not only the relationship between architecture and the city but also the development of the city as a dynamic process. Today, it is also a question of integrating natural dynamics into the very substance of the city. At the heart of the long-standing relationships between roads, building plots, and buildings we must think about this dialectic: its forms, its spaces, its approach to energy, its landscape, its uses, its different types and their futures.
- Last, the typology and the typological project of the town, which is by nature generic and systematic, aims to present the distributive and constructive characteristics of building types. This in a way constitutes the “text” of the city, whose “natural surfaces” question the adequacy of the typological expressions of residential forms, public spaces, greenspaces, and landscapes (Figure 16.1).

The Territory’s Geography and Landscape

Geography and landscape create a structural and fundamental “system” of historical integration for the development of a territory. They question the nature and the framework of the “perimeters” that effectively compartmentalize urban design, particularly during the



FIGURE 16.1 “Nature” in the heart of the town. Matthäus Mérian, “S. Peters Platz in Basel,” in Zeiller M. 1642. *Topographia Helvetiae, Rhaetiae et Valesiae, Franckfurt am Main: Merianischen Erben.*

operational phase of a project. The new objective in France of *Zéro Artificialisation Nette* (or “zero net artificialization” of the ground) draws attention to the limits between what is urbanized and developed, in the sense of being a built environment, and so-called natural spaces. It questions the articulation between the “inside” and the “outside” of the city.

Toward a “Natural” City: The Descartes Neighborhood in Champs-sur-Marne, 2017⁷

In Champs-sur-Marne, as part of a competition concerning the Descartes district and the area reserved by the state to be used for the motorway, now the N370 (with the new Noisy-Champs station in Grand Paris, driving a new phase of urbanization), we explored the hypothesis of completing the original project of the New Town Marne la Vallée, within the framework of its founding principles (that of being a “green town” in particular). This original vision turned out to be a failure (the “green” parts of the town are in fact isolated, and the town turns its back on its inaccessible natural spaces, which are abandoned, neglected fringes, “green” spaces without any particular status). With the aim of creating a more natural city, we proposed to open up the perimeters of the project:

- The grid of the landscape constitutes the framework for the natural city. It unites the city and its territory together.
- Integrating the so-called natural or green spaces into the project involves reexamining the notion of protecting natural spaces. This development depends on the strict maintenance of the balance between (quantities of) natural spaces and artificial spaces. It also encourages another way of thinking, planning, and managing public space.

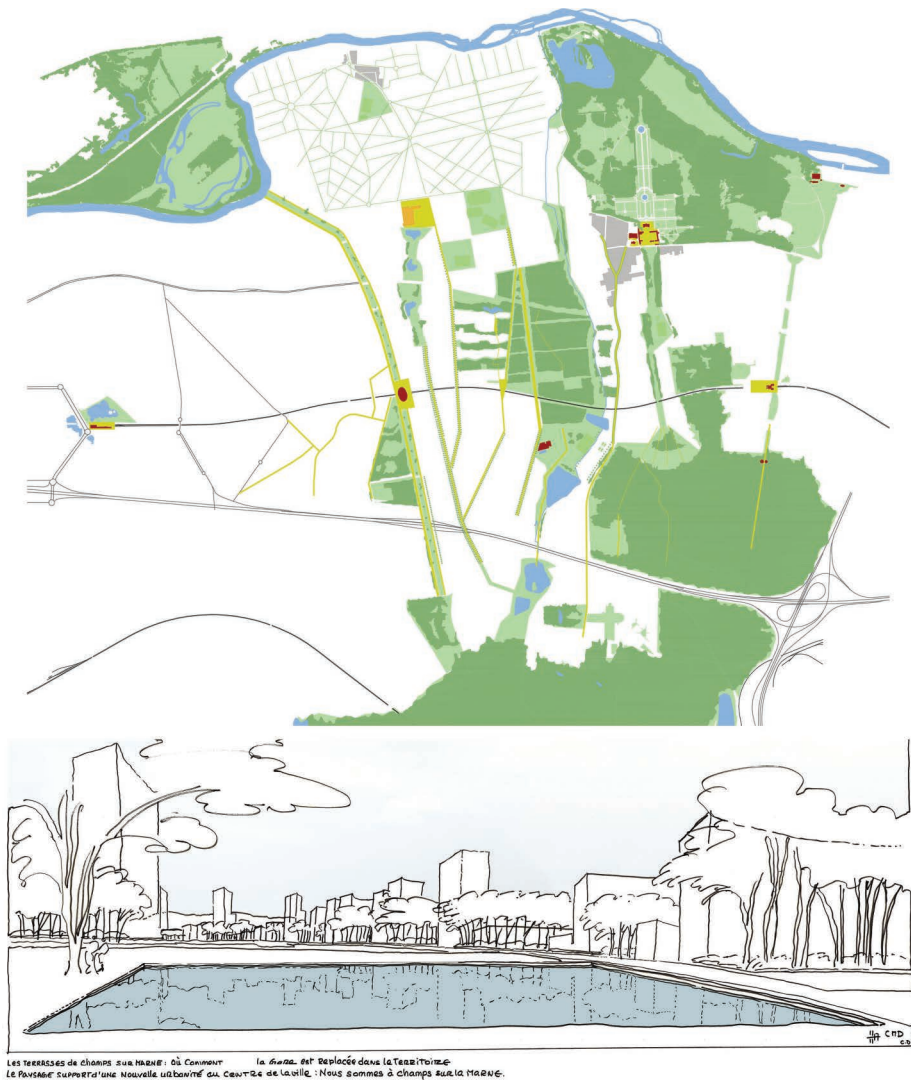


FIGURE 16.2 *In Champs sur Marne, the grid of the landscape forms a framework for the natural city, conveying density.* © germe&JAM and © Bruel Delmar.

- Natural spaces at the heart of the city constitute the substance of the urban fabric, giving structure to a renewed public space, a landscaped urban center. These spaces give an outline to “landscaped interiors.” Natural spaces can become urban centers, on the scale of the city and the neighborhood.
- The density of construction is at least equivalent or even greater compared to an urban planning approach that isolates natural spaces from urbanized spaces but offers new forms of density, which are quite considerable.
- The natural city is also the art of building differently: constructions based on the organic and the living, positive energy buildings, durability of mineral or organic materials, city of stone, city of wood – this is the art of building a sustainable city (Figure 16.2).

Inheritance and Palimpsest

Transforming a territory calls for the creation of representations and for knowledge, an important part of which is (or should be) concerned with archeology. The objective is an understanding of the consistency and “natural functioning” of the site, studied during its evolution. The 20th century was a period of often radical transformation (installation of culverts to channel water, evolution of the layout and plots of land, etc.). Retracing the thread of history, restoring the natural and landscaped systems erased by modern urban planning can contribute both to the “genius of the place” and to ecological ambition, designing a new form of integration into the city and its territory (“geographic resettlement”).⁸

Urban Restructuring of the Southern Districts of Les Mureaux – 2003/in Progress

The project in the southern districts of Mureaux⁹ relates to the development of a vast housing project of around 4,000 housing units which were built in a fragmented way from 1955 to 1970, and where urban and social problems emerged in the 1990s.¹⁰ Selected as a “priority neighborhood” as part of the first session of public policies steered by the ANRU (*Agence nationale pour la rénovation urbaine*, a public organization for urban renovation),¹¹ this “town within a town” stretches for almost 2 km and has been redesigned around a large linear park, developed in the thalweg along the watercourse of Orgeval, formerly a culvert, which is being restored out in the open.

Even if the urban design of the housing estate ignored the thalweg and the watercourse, it did not change the qualities of the landscape of the hillside and the valley, which were preserved as part of the “park city” during its construction. The application of modern town planning, based on a master plan, in Les Mureaux is relatively consistent with the ambitions of the theoretical principles on which this type of planning is based. The systematic, sometimes sophisticated repetition¹² of its “isolated” buildings, has “sedimented” and “incorporated” the “nature” of the hillside and paradoxically leads to a homogeneous “urban” landscape that is not connected to a specific place.

Apart from significantly improving the water management in the valley, the creation of the linear park and the watercourse in the heart of the large housing complex provides the “park city” with a new horizon in terms of geography. This scheme of the GPRU (the *grand projet de renouvellement urbain* or urban renovation project begun in Paris in 2001)¹³ combines both remembrance (reopening of the watercourse and restoration of the thalweg to the natural state it had before the construction of the housing estate), with landscape and ecology, and also with the typology of the associated urban fabric as well as providing public facilities for the neighborhoods where the park is present.

This attention paid to the site’s geographical history has also given rise to a new image for the town, previously widely stigmatized. The natural, linear park creates a line for the municipality on a territorial scale, cancelling the perimeter of the large housing complex and connecting it to the town (Figure 16.3).

Place, Milieu, Living Things, and Biodiversity

Widely neglected in contemporary urban planning, the natural aspect of the city is now an urgent matter in the face of the collapse of biodiversity in the Anthropocene.¹⁴ Today, every



FIGURE 16.3 *Les Mureaux*. Image on the left. To the south of the village of Les Mureaux, the watercourse of Orgeval (highlighted in blue) which used to meander in the “open air” at the foot of the slopes of the Bois de Bécheville was made into a culvert during the construction of the large housing complex, “erasing” the geography of the site – extract from the map of the Etat Major, 1866 (<https://remonterletemps.ign.fr>). At the foot of the hill, extending out from the parc du Sautour, the watercourse was opened up again, creating a linear park that connects the districts and their facilities. On the slope of the hillside, the “garden avenues” connect the Bois de Bécheville to the linear park, supporting gardening and leisure activities in the neighborhood. Image on the right. The linear park and the Bécheville garden avenue. © germe&JAM.

project includes an ecological diagnosis taking into account biodiversity just as socioeconomic, urban, landscape, and architectural diagnoses are carried out.¹⁵ Ecological corridors form an essential framework that is often consistent with that of geography; biodiversity coefficients are used in the design of the urban fabric. The protection of planted spaces and in particular of trees and the tree canopy is a sensitive subject that can block a new design, even when other considerations would nonetheless push for change.¹⁶

Between "Garden City" and "Park City," the Peripheral City Finds Its "Milieu." The Clause Bois Badeau District in Brétigny-sur-Orge (91)

The Clause Bois Badeau project¹⁷ is a project for the urban redevelopment of a town center that was emptied of its substance by peri-urban extensions, due to the road infrastructure of the *Francilienne* (a partial ring road around Paris); an industrial wasteland of 42 hectares close to the town center, the railway line, and the *vallée de l'Orge* were all transformed, providing the opportunity for a mixed, large-scale development (with 2,800 housing units, shops, facilities, activities, and services), refocusing on the train station of the first-rate Paris region public transport network (the RER). The station is the new heart of the town (a train town).

A large park makes up the territorial and landscape project framework, restoring the strong relationship between the town, its station, and the *vallée de l'Orge*. With the added extensions of the "transversal gardens," the planted public spaces represent more than 10 hectares on which an ambitious project to extend the wooded landscape of the valley and to reclaim biodiversity will create density in the town center (and vice versa). On-site land management gives structure to the project, levelling the land and allowing for open-air rainwater management and diversification of the environment (dry and cool). The wasteland "exhausted" by 70 years of intensive soil cultivation (seed production) once again becomes a living, complex environment that can be inhabited.

The design of planted areas experiments with different "ways of doing things": pre-greening, differentiated land management, making the landscape productive, imagining a forest within an urban environment. The woodlands that were planted young and densely so they could be adapted over time will gradually establish themselves, their presence balancing the density of the constructed elements. This time scale was sometimes misunderstood by the inhabitants who were impatient to enjoy a wooded environment. The urban fabric creates "landscaped areas" that echo the urban spaces and the diversity of existing built forms. The approach is that of a synthesis between "park city" (freestanding buildings in an "open" space) and "garden city," a designed space divided up with houses and ordered by alleyways. Thus, the *Faubourg du Bois* district is based on an interweaving of the wooded valley and habitats. Each plot has a large garden with trees around which the buildings are organized. The landscape as objective means organizing the built forms according to two different types:

- Small buildings with panoramic views of the valley designed to have a minimum impact on the ground;
- Rows of "houses" of different forms (terraced or superimposed houses, or arranged horizontally) that define the limits of the large gardens and give the orientation of the residential spaces of the large plots.

Clause bois badeau à Brétigny. Opposite. Planted areas in the Clause Bois Badeau district in Brétigny sur Orge. Image on the right. Composed of a large public park in the heart of the district between the vallée de l'Orge and the station in the center of town, and long transversal gardens



FIGURE 16.4 *Clause bois badeau à Brétigny. Opposite. Planted areas in the Clause Bois Badeau district in Brétigny sur Orge. Image on the right. Composed of a large public park in the heart of the district between the vallée de l'Orge and the station in the center of town, and long transversal gardens that spread out into the residential complexes, the large public framework (in sepia) extends into the urban fabric, structured by large garden courtyards with trees and private gardens. Image on the left. View from the park toward the open landscape of the valley and the hills of Montlhéry Trees on the more inorganic and “mineral” square of the station. A “porous” street into the urban fabric. Study model for the design of the urban fabric as a combination of “park city” and “garden city.” © germe&JAM.*

that spread out into the residential complexes, the large public framework (in sepia) extends into the urban fabric, structured by large garden courtyards with trees and private gardens. Image on the left. View from the park towards the open landscape of the valley and the hills of Monilhéry Trees on the more inorganic and ‘mineral’ square of the station. A ‘porous’ street into the urban fabric. Study model for the design of the urban fabric as a combination of “park city” and “garden city”. © germe&JAM (Figure 16.4).

Resource

From the perspective of a project that focuses on using shorter distances, the territory constitutes a resource that is inherently ‘local’, with the associated environmental, economic, social, and health implications. An architectural renewal emerges that is more artisanal, framed by local know-how and resources and based on materials and constructive concerns. For contemporary urban planning, there is in particular the question of the ground that is increasingly impervious and polluted, overburdened by successive phases of urban development.

From the “Green” Space of the “Park City” to the Productive and Fertile Soils of the “Natural” City: The Southern Districts of Les Mureaux

In Les Mureaux, already described above,¹⁸ the vast “free” spaces of the housing development are used as a lever for rebuilding a stigmatized territory, residentially and socially. The urban renewal project uses the heritage of the “park city.”

- The built elements are brought together to make the empty areas bigger. They make up an urban fabric where the buildings of the housing estate are associated with new buildings and are assembled around relatively compact garden courtyards,
- Often targeted as being a vector of insecurity, car parks and large planted spaces without any clear status or use now form a large framework of public spaces. They are given a location and ordered by the large linear park. Allotment gardens have been developed and create a unique fertile “texture,” incorporated into the past urban fabric of the housing estate. The poorly defined, insubstantial “green” areas thus become useful and respected, belonging to the inhabitants, and part of society.

La Crau: Resource for the Territory, Backbone of the Project, and Prerequisite for Inhabiting the New “Oasis” District in Miramas (2015–ongoing)¹⁹

An irrigated framework, connected to the waterways and canals of the plain of the Crau region, is at the basis of the urban plan and landscape strategy, involving the renewal of a large disused railway activity wasteland, located close to the town center and the station. Climatic comfort is an objective, making the area attractive from a residential point of view, but the project also reactivates an old tradition of water management and, in terms of typology, constitutes the backdrop of the future “Oasis” district, a strategic site of the large urban project in the heart of Miramas (Figure 16.5).



FIGURE 16.5 Miramas: analogy of the town and countryside. The urban project of Miramas, a Mediterranean town located between the agricultural plain of the Crau region and the hills of the Alpilles, questions integrating into the town the legacies of a secular landscape – irrigation canals, cypress groves, the division of fields versus the urban grid, Mediterranean woodlands – which become the support for a new urban ecology. The town is like the countryside; they share the same substance and the same form. © germe&JAM.

Climatic Phenomenon

Global warming requires a more general consideration of the orientation and make-up of the ground (albedo, heat islands, etc.) – the shapes and relationships between the territories affected by modifications (e.g., the evolution of the coastline) and also the orientation and composition of building envelopes, whose morphology and architecture can be transformed (insulation, low carbon, etc.).

This long-term development is punctuated by exceptional events that can lead to high-risk situations for the urban areas and/or the activities concerned. Dramatic examples are multiplying, particularly with regard to the risk of flooding. The development of science and techniques, and the belief in their capacity to regulate or even “domesticate” nature, has often led to the neglect of natural phenomena. Reconciling this element of risk and the

project design²⁰ means reviewing the software used to plan urban development in flood-prone areas, thus allowing a serene presentation of the issue to the inhabitants, without opposing, as is too often the case, on the one hand, the need for development and, on the other, the need to take risks into account. It is also a question of being able to speak freely about the vulnerability of a place and the potentially positive impact of resilient projects that contribute to reducing the territory’s vulnerability (networks, accessibility, reduction of the number of people to be evacuated, maintaining economic activities, etc.).²¹

The Risk of Flooding at the Heart of the Construction of a Metropolitan Project: The Development of the Ardoines Industrial Zone in Vitry-sur-Seine

The Ardoines project,²² located in the heart of the flood-prone area of the Seine, upstream of Paris, is an example of the inevitable change to industrial land. The project is located close to inner Paris and is served by an efficient public transport infrastructure. This particularly favorable urban situation coupled with the development needs of Greater Paris led the French state to permit the development of the site, despite the known natural risk of flooding. This was on the condition, however, of not increasing the vulnerability of either properties or people.

Water and the “management” of risk are the structuring elements for making a resilient metropolitan project, with the creation of a public framework that during times of flood allows the inhabitants to be kept on site, out of the water, in acceptable conditions. Flood-prone areas are at the least linked to non-flooded sectors with operational networks, or, at best, are part of a functional urban complex. Accessibility and habitability, combined in parallel, are the condition for the site’s densification. “Secondary” levees, oriented in the direction of the river, offer a pedestrian and recreational connection outside of the flooded areas and can be precisely levelled to give access to the floors of the buildings used as dwellings, creating a large “out-of-water” territorial structure. These levees have footbridges that cross over the public spaces liable to flooding, creating support networks. They have an average width of 9 meters and are accessible both to people with reduced mobility and also to medium-sized maintenance and emergency vehicles.

The obligation to provide services during flooding is a fundamental element in the design of buildings and residential projects.

- It is therefore recommended to define an “out-of-water” path from each building to the resilience levee. The service is either direct in the case where the plots are directly connected to the levees, or indirect, via private terraces, in the case of a second-row location.
- This arrangement encourages residential spaces with several entrances: a main entrance on a flood-prone street, a secondary entrance via the garden, and an entrance on the resilience levee.
- The two ground levels of reference are represented architecturally by a double entry, a low entry that is liable to flooding, and a higher entry, not liable to flooding, connected to the levee.

The obligation not to exceed a building footprint of more than 50% of the surface of the plot (according to the PPRI, the *Plan de prévention du risque inondation*, or flood management



FIGURE 16.6 Vitry. *Image on the left.* Modeling of the centennial flood (1910) on the ZAC Seine Gare Vitry project: public lanes, the “levees” (highlighted in orange), connect to the housing blocks and are at a level out of reach of flooding, as an extension of non-floodable urban ground. The blocks of flats have private “out-of-water” passageways and/or residential “paths” (highlighted in red) arranged as private terraces that cannot be linked together. *Image on the right.* The “gardens of the Seine”: a series of floodable gardens perpendicular to the Seine bring the river landscape and its ecosystem deep into the urban fabric. The flooding of the site, and how it is used in times of flood, gives structure to the town on two levels, qualifying the entry at the lower ground floor that is susceptible to flooding, and the higher ground floor, connected to the “levees.” © germe&JAM.

plan) leads to developing the urban fabric with courtyards for circulation and other uses as much as possible using plain earth.

The major challenges of reclaiming nature in the city – taking risks, the presence of water, and the reintroduction of nature to replace a monofunctional zone of activity – highlight the need to change the current situation, with totally sealed urban surfaces and no open soil. Towns with a risk of flooding embrace the “invention” of architectural types specific to these exceptional situations. Their exemplarity is only made possible in the context of a well-equipped metropolitan center and can therefore only be developed under economic conditions that allow the creation of resilient infrastructure (Figure 16.6).

Notes

- 1 Concerning the word “nature”: It is considered here as the white areas in Colin Rowe’s drawings, space which is not built on. Rowe, C., and F. Koetter. 1984. *Collage City*. Cambridge, MA/London: The MIT Press.
- 2 See Gemenne, F., A. Rankovic, T. Ansart, B. Martin, P. Mitrano, and A. Rio. 2019. *Atlas de l’Antropocène*. Paris: Presses de Sciences Po.
- 3 Devillers, C. 1994. *Le Projet Urbain. Conférences Paris d’Architectes au Pavillon de l’Arsenal*. Paris: Ed. du Pavillon de l’Arsenal.
- 4 The urban fabric is here considered as a ‘category’ of the historical and morphological analysis developed in France by the Ecole d’Architecture de Versailles and university professors such as Philippe Panerai and Jean Castex, who popularized the Italian research. This ‘category’ was never really accepted in France as an operative question for urban design (overall plan, projects for public).
- 5 See Lucan, J. 2012. *Où va la ville aujourd’hui, formes urbaines et mixité*. Paris: Editions de la Villette.
- 6 Ibid.
- 7 Urban planning consultation for the ZACs Haute Maison and Hauts de Nesle for EPAMARNE and the town of Champs-sur-Marne in 2017, germe&JAM project leader with Bruel Delmar landscape designer, Alphaville urban development, Mageo, infrastructure and environment, Oasiis, sustainable development.
- 8 See Marot, S. 1996. *L’Alternative du paysage*. Le Visiteur 1.
- 9 Designed for the town of les Mureaux, the urban redevelopment project for the districts to the south of the town grouped together germe&JAM, Alphaville (urban design) and InfraserVICES (infrastructure and environment). Winner of the CAUE 78 award “Politique urbaine et architecturale” in 2014 – certification Eco-quartier 2014 – the redevelopment project for les Mureaux was presented at the research seminar PUCA: programme de recherche Biodiversité Aménagement Urbain et Morphologie (BAUM). It has been published in Tallant C., and L. Bertrand 2010. *Mettre en œuvre la qualité urbaine: l’exemple des Mureaux*. In *Quand les quartiers réinventent la ville*, Paris: Autrement. JAM Architectures et Territoires, Bichat, J. M., M. Hervier, and V. Perez. 2010. *L’évolution des formes urbaines dans les grands ensembles HLM*. In *Qualité urbaine des quartiers HLM en renouvellement*, ed. J. Werlen. Paris: USH. Bichat, J. M., F. Garay, J. L. Bossavit, S. Hénot, and J. Palisson. 2012. *Du grand ensemble à la ville en commun. Les cahiers des conférences des acteurs de la rénovation urbaine*. Les Mureaux: IFMO.
- 10 The districts to the south of the town les Mureaux was considered by the French state at the beginning of the 2000s as one of the most complicated areas in the département of the Yvelines along with le Val Fourré in Mantes and Les Merisiers in Trappes.
- 11 ANRU – Agence Nationale de Rénovation Urbaine – state organization for urban redevelopment/GPRU Grand Projet de Rénovation Urbaine – large urban redevelopment project.
- 12 Fortin, J. P. (2001). *Grands ensembles. L’espace et ses raisons*. Pantin: Service du patrimoine culturel de la Seine-Saint-Denis.
- 13 GPRU: Grand Projet de Renouvellement Urbain – a large urban redevelopment project.
- 14 Gemenne, F., A. Rankovic, T. Ansart, B. Martin, P. Mitrano, and A. Rio. 2019. *Atlas de l’Antropocène*. Paris: Presses de Sciences Po.

- 15 Directed by Clergeau, S. L. 2020. *Urbanisme et biodiversité, vers un paysage structurant le projet urbain*. Rennes: Edition Apogée, coll. Espace Des Sciences.
- 16 In many French metropolitan cities, ecological anxiety means that public policies are now tending to sanctify any natural elements. The “park city” of large housing estates, where renewed attractiveness must be correlated with social diversification and transformation of the urban fabric, remains static and ghettoization is doubled.
- 17 Designed for the SORGEM (SEM de l’agglomération du Val d’Orge désormais Coeur d’Essonne agglomération) and the town of Brétigny-sur-l’Orge, the urban project Clause Bois Badeau grouped together germe&JAM, Mageo, BET VRD et environnement, Lattitude Nord (landscape design), and 818 (light design). The project Clause Bois Badeau is awarded in 2016 the label “Eco-quartier” from the French Ministère du Logement et de l’Habitat durable, winner in 2009 of the award “Nouveaux Quartiers Urbain” from the Région Ile-de-France.
- 18 See note 9.
- 19 Developed in 2015 for the Aix Marseille metropolitan area and the town of Miramas, the Miramas train station project grouped together germe&JAM, ILEX (landscape design), Verdi, BET (infrastructure), Alphaville (urban design), and Oasiis (sustainable development).
- 20 Bonnet, F. 2016. *Atout risques. Des territoires exposés se réinventent*. Marseille: Ed. Parenthèses.
- 21 Bichat, J. M., and J. F. Morel. 2020. Seine en ville et villes en Seine. In *Aménager la ville avec l’eau, pour une meilleure résilience face aux changements globaux*, ed. M. Siedl. Paris: Ed. Presse des Ponts.
- 22 Developed for the EPAORSA (today known as Grand Paris Aménagement) and the town of Vitry-sur-Seine, the Seine gare Vitry project grouped together germe&JAM, Mageo, BET (infrastructure and environment), Philippe Hilaire (landscape design), Ecologue and Flore Siesling (light design). Winner of the national award “Grand Prix d’aménagement 2015 – Comment mieux bâtir en terrains inondables constructibles” from the French Ministère de l’Écologie, du Développement Durable et de l’Énergie, this project has been published in *Les Ardoines dans le Grand Paris*. 2013. Exposition au Pavillon de l’Arsenal, Paris. Eeckhout, L. van. 2016. A Vitry-sur-Seine, vivre le risque de crue. *Le Monde* March 24. Yatov, M. C. 2011. Vitry-sur-Seine: un projet résilient d’emblée. *Traits urbains* Mars-Avril.

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PART IV

Mapping Centralities

Urban Regeneration toward a
Polycentric City



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17

THE LONG-TERM METHOD OF THE URBAN PROJECT IN ITALY AND THE PARMA SCHOOL

Carlo Quintelli

If, as incurable users of historical categories, we were to adopt the period of the Italian Renaissance between the 15th and 16th centuries as a moment in which the culture of the modern project began to define its own interpretative theoretical status, and also its explicit subjectivity, we should immediately recognize the peculiar characterization in the dialectic between architecture and city. An Italian city understood as a material body that is no less than formal, symbolic, but also political and cultural, as its construction accompanies the processes of evolution of the society inhabiting it. And this gives rise to the aptitude for an architectural project that we define urban not so much or just because its field of application is the city but because it thinks and acts in an urban sense, making the city its own instrumental laboratory between interpretation and proposition. There is no need to cite the theoretical elaborations of Leon Battista Alberti which bring us back to the principles of a treatise that investigates architectural form in reciprocal analogy with urban construction in the concrete aspects of *De Re Aedificatoria* or the purely urban dialectic of the project between “principles, cities, architects” following Tafuri’s historical introspection on the Renaissance (Tafuri 1992), with Filarete’s visions that overcome ideality in favor of an experimentation of architecture as a typological urban mechanism, rather than the strategies of Leonardo’s settlement design for a Metropolitan Milan with a territorial role.¹ Raphael was concerned with the architecture of the ancient city not only in terms of forms but even as a material conservator ante litteram in his letter to Leone X, while in Venice a politically mediated contrast arose between the technical pragmatism of the Gothic city and the representative, as well as typological, innovation of a city with the modernity of classical expression, between the adaptive manner of Sansovino and the proto-modern radicality of Palladio. On the other hand, even when the architectural invention seems to focus entirely on itself as a monumental icon, as in Brunelleschi’s dome, the entire city is reflected therein, starting from a cultural debate that involves it in the theater of the great vertical construction site up to the historical epilogue of a Vasarian corridor which, on the contrary, horizontally unravels in the body of the urban morphology in the synthesis of scale between architecture and city. And so in hundreds, if not thousands, of cases, this is in fact the reality of the urban tradition in the Italian context, made up more than by villages, as

Braudel would say for France, of medium, small, and very small *stone cities* of precise garrison shapes of a territoriality with a high designed rate of anthropization, starting with the Roman matrix of the division of lands. Compared to the Europe beyond the Alps with a still predominantly wooden city formed through opportunistic logics of the *whole*, the Italian one is more enunciated through an architecture increasingly structured on the planes of the constructed material as well as the design of ideal forms in a *systemic* key. Matter and form simultaneously obtainable from the archaeological quarries and from the relief of the ancient, where the responsibility of the project, between the figure of the building and the urban landscape, acquires extraordinary degrees of responsibility and, in direct proportion, of disciplinary knowledge. A modernity that is therefore inevitably linked to the protagonist role of the city and its architecture in history, according to a dialectic that in some ways has slowed down its most dynamic and transformative expression in the last two centuries; for example, that which originated from the production processes of industrialization and its related sociocultural phenomena. In this sense, it appears exemplary that the rhetoric of the classicist modernism of fascism in Italy has applied to cities or pieces of cities rather than single architectures or that the idealized memory of the city is filigree to the abstract rationalism of Terragni or evocative thought of Moretti and, even after the postwar period, that the founding program of a factory is not limited to its own productive enclosure but becomes a city itself, alongside the historical one, as in Olivetti's Ivrea.

Community, in the case of the political and social thought of Adriano Olivetti, and *continuity* in the case of *Casabella*, the magazine directed by Rogers, constitute two assonant and in some respects complementary terms in the research of role in the architectural and urban design of postwar Italy. The first when experimenting with the evolution of the paternalistic form of the industrial settlement through the logics of collectivist organization in the community sense of the city. The second when critiquing internationalist modernism starting from the role of memory and environmental preexistences in the identity construction of the city to which the architectural project contributes. Starting points and paths for developing a modern view of an interpretative, phenomenological, non-dogmatic, and modeling nature. The humanistic and historical data, the analysis of phenomena, and an idea of the city and architecture for a renewed but conscious society are intertwined.

Admitting even a minimal validity to this interpretation and wanting to judge the role of the project on the threshold of the Third Millennium with an eye to the 20th century, the Italian one could in some respects appear to be a rearguard architecture in that it has continued to look at the historical experience of the city, certainly stimulated by its dynamics but at the same time also held back by the connections with the urbanity of inertia, procedural customs, up to the identity legacy of tradition (including its falsifications). But if from the same threshold one instead focuses on the perspective of the current century, then the denoted urban dialectic that still affects a substantial part of the Italian architectural project seems to take on a new meaning with respect to emerging and highly relevant issues in the future scenario. Those that require leaving the objective, self-referencing dimension of architecture, with all the narcissistic and simulacral drifts that denote it, to offer alternatives to the transformation processes of the city in a neoliberal sense and to the technological dynamics functional thereto, increasingly developing the critical role of the project with respect to the collective needs of the inhabited contexts. A conscious planning, of a cognitive nature and with purposes of general interest, provided with interpretative tools before being assertive, and with a sensitivity suitable to compare itself with the physiology (functions and

relational dynamics of urban life) as well as with the structure of the urban organism (that of form and figure no less than the material of the built city). A project urbanity understood above all in a cultural sense, without which it will be more difficult to properly orient the transformation of the city, including its conservation, before the scenarios of climate change, biological environmental criticalities, economic instability, an increasingly difficult dialectic of social balance, and the need for identity that continues to come from individuals and the communities to which they belong. A renewed dimension of the problems, unfortunately increasingly dragged into becoming emergencies up to the dystopian datum, that a project methodology created within the relationship with the city is certainly better able to deal with the right degree of design control, that which comes from historical experience and from the understanding of the complex nature of the processes in progress in regulating innovation, rational structures, and prospects for civil and, above all, general growth.

It goes without saying that the dialectic between architecture and city according to the urban material denoting the project, not only in a dimensional and phenomenological sense but also in an epistemic sense, implies a different degree of codification of the principles and models that guide the project technique a priori. In fact, it is in urban and territorial realities that we find a significant, even if not absolute, part of the contents and characteristics to be invested in the project's economy. Hence the consequence of a non-univocal technical device, which comes about between disciplinary deduction and phenomenological induction, outlined in the differences among cities, which in the Italian cultural and geographical context are as relevant as they are close together. The experience of the urban project defines more a method than a project methodology in these terms that, while maintaining the denotation of its contemporaneity, is able to actively involve the field of preexisting buildings, rediscovering meanings, reinforcing values, and introducing functionality and signs as innovative as they are congenial to the city in which they are located in the choral urban counterpoint. It is not a question of regional ideology or of local relativism or of eclectic drifts linked to contingency, but it is a question of *design temperance* that examines things themselves in their consistency, which defines categories that are not absolute, avoiding ideological, or worse still, stylistic dogmas, perhaps better to say communicational today, of an architecture that is always tempted to be fashionable.

The small and relatively new Faculty of Architecture of the University of Parma, founded in 1998² starting from two main academic lines of reference, also fits into the urban prerogative that characterizes the long course of the culture of Italian architectural design. The first, that of Milan, represented by Ernesto Nathan Rogers since the 1950s through the magazine *Casabella* and some of his followers such as, in particular, Aldo Rossi and Guido Canella, but also, in general, by a cultural and professional Milanese context characterized by figures such as BBPR, Gardella, and Albini, to limit ourselves to the main ones in a panorama full of extraordinary personalities.

The second, even more articulated one in Venice is represented by Giuseppe Samonà and his school, the IUAV (Istituto Universitario di Architettura di Venezia), which since the postwar period has been an original case of a heteronomous school where Samonà's culturalist and humanistic conception has summoned different personalities of project culture. From Zevi, understood as a historian focused on operational criticism and therefore strongly committed to orienting design culture also in an international sense, to Scarpa, to the same Gardella and Albini themselves here in an academic capacity, not to mention Saverio Muratori, in an articulated but unitary application between the reasons of the architectural language and those of the city and the territory at least on a regional scale (Veneto and

Friuli Venezia Giulia). A school experience that will see the figures of Luciano Semerani and Gianugo Polesello, Costantino Dardi and, through other paths, of Carlo Aymonino as animator of the Architecture Group as followers of Samonà. Last, also included in this vast field of school but in other ways autonomous, is Aldo Rossi. Well-identifiable personalities recognized also at an international level until the 1980s when, with the birth at the IUAV of the first Doctorate in Architectural Composition in Italy, the conditions of continuity but also of renewal of that school tradition were established.³ Similarly, in the last two decades of a contemporaneity closest to us, other figures and research lines animate those academic laboratories of experimental tradition, strengthening or in other ways ignoring their legacy.

Overall, it is a heritage of cognitive advances marked by a production of original and research-oriented nonfiction with urban architectures of extraordinary experimental quality, where the theoretical contribution often arises a posteriori from the built outcome or from high-level demonstrative competition projects according to that “utopia of reality” in which architecture and city put each other to the test of historical becoming.⁴ The panorama of reference points is vast and articulated by typological genres. Merely by way of example, for those belonging to the younger generation or to contexts far from the Italian one, I would mention the Velasca Tower of BBPR in Milan (1950–1958) as regards the relationship between architectural figuration and urban identity, to which they act as a choral counterpoint not only in the allusive relationship with the historic city, the Venetian Casa alle Zattere by Gardella (1958–1960) or the INA Palace by Albini in Parma (1950–1954). A relationship with history that is not rhetorical but of extraordinary interpretative (i.e., inventive) radicality on urban nature emerges in the “Novissime” project by Samonà created for the competition for the Sacca del Tronchetto in Venice (1964), in whose water square the “Teatro del Mondo” by Aldo Rossi (1980) would find a congenial home, and then descending along the Grand Canal to the “Ponte dell’Accademia” by Gianugo Polesello (1985) for the Architecture Biennale. And among the many competitions I would also mention the one closest to me for the reconstruction of the Paganini Theater in the urban space Pilotta in Parma (1964) where, between the autonomy of the monument’s architecture and the search for its completed form from preexistence, Aldo Rossi and Carlo Aymonino face each other in a complementary way. Of no lesser scientific impact are the essayistic returns of relevant epistemological innovation, from Rossi’s “The architecture of the city” (1966) to the research carried out on the typology–morphology relationship in project interpretation that emerges from the Venetian volume “The city of Padua” (1970) curated by Aymonino and written by many contributors. In other respects, the idea of the project as a strategic instrument capable of affecting the city structure in its metropolitan relations is concretized in that “great theater of the Milanese hinterland” created by the architectures of the public services of Guido Canella,⁵ among which the Civic Center of Pieve Emanuele emerges and in which the residential architecture understood as a piece of the city in the Gallaratese (1967–1970) built by Aymonino is also indirectly inserted. But the list would be too long and the exemplarity far more extensive in a cultural geographic as well as a generational sense than what this opportunity allows.

Starting from the school reference lines that I have briefly mentioned, the didactic and research nucleus of the University of Parma dedicated to the culture and practice of the compositional project – involving in particular myself as well as Enrico Prandi and, more recently, Marco Maretto, Carlo Gandolfi, and other younger graduate students, postdocs and students, the latter called to an education that recalls the experience of research – has been applying its own original path of experimentation for 20 years, articulated over time

through the focus of some thematic nuclei and the development of disciplinary advancement tools based on the relationship between architecture and city.

The attention to the context of Parma first of all, as a place where the Faculty of Architecture belongs, understood as a research field in terms of analysis and applied architectural and urban project. A context immediately interpreted in its territorial dimension that is even more susceptible in this case, since it was formed through the marks of Via Emilia and a division of lands that geometrized a vast territory from Piacenza to Bologna in a matrix key, making Emilia architectural but with transversal ties toward the Ligurian-Tuscan and Lombard-Veneto sides. A territory where the consular road carries out its poleogenetic function, determining the current polycentric urban system. A linear city in fact, with an intermittent character between settled nuclei and the countryside, to which the project research for a renewed functionality and new architectural components could restore a peculiar notion of city and landscape: the one that we have called Cittaemilia with a new toponym.⁶

Within this *theater* of both territorial and urban applied research since 1987, there have been several occasions to test the architectural project as a contribution to the problems and potential of the Emilian settlement system. Through typological themes of a historical identity and civil nature such as for the *theater* in Parma, or on architectural types intended to interpret new role potentials of certain urban places starting from the motorway junctions, to the railway stations and the central areas in the contexts of Piacenza, Parma, Reggio Emilia, and Modena, aimed at configuring a synergistic systematicity between the cities. A project focus whose premise is the theme of the centric *linearity* of the ancient consular road, to be rediscovered as still being a factor of relationship and settlement identity today, on which to develop the redesign of the intermediate settlements between the capital cities in contrast to the growth of a speculative conurbation that tends to cancel the alternating character between the city and countryside of Via Emilia.⁷

Starting from a concept of environmental sustainability that envisages the principle of zeroing land consumption for settlement purposes and the enhancement of the compact city, according to a policy of *building in the built area* that entrusts the city with a primary civil task aimed at combating the disaggregating phenomena of social *sprawl* as well as a settlement one, specific school project research re-elaborates the theory of the city by parts through a methodology of both morphological and functional structuring of the city. A strategy of reconfiguration of the urban composite according to the logic of morphology hierarchization that involves the resources already present in the city: through condensers of public and private functions with collective value and relevant architectural and urban typologies, to be re-aggregated through the strengthening or creation of nuclei of *centrality* capable of catalyzing urban and social functionality in terms of critical mass, starting with the public and in any case collective functions. In this process of identification and characterization of urban centralities through targeted design interventions, the resource of the *urban void* plays a fundamental role, understood as an often inert resource and to be reevaluated in the economy of a compact city both in terms of built and open space for aggregation and public relations. A methodological path that takes the name *Spinner 2013*, within an action of the European research funding of the Emilia Romagna Region,⁸ which will also develop thanks to the contribution of doctoral research up to a more advanced configuration entitled: *Urban regeneration technique through the structured densification of the system of centralities* (TDSC).

An analytical design path that starts from the interpretation of the parts of the whole city to come to define, through different levels in a trans-scalar key (compact city – areas – fields – centrality), the individual centralities to which to entrust functional, identity, and

urban life roles on the scale of the neighborhood rather than the urban, metropolitan one, and also of a vast system in a polycentric key. In this process, the dimension of urban design is continuously related to that of architectural typology where the problem of forms, in addition to the aspects of continuous functional and fruitive innovation, is addressed on the level of the characters of the context, of an identity strengthening derived from the landscape and from the peculiarities through which the structure of the city's historical layout was created. In continuity with the *Spinner* research, the project research is currently focusing on those substantial arts of the urban fabric, interposed between the central nuclei, called in any case to collaborate in the redesign and widespread livability of the compact city. Always in the logic of the urban parts and according to the assumption of verifying the potential of city living in an aggregate and inclusive form, the experimentation adopts the urban block, or by merging the *macro-block*, as a morphologically circumscribed and identifiable particle to which to entrust the meaning of an urbanity strictly related to the conditions of residence in terms of services, spaces, mutation logic, and the social relationship of community value.

In many ways as a complement to the research on urban regeneration mentioned above, the University of Parma itself is involved as an area of project application, highlighting the potential of its own settlement, in this case articulated between the historic center, the hospital complex, and the suburban campus of sciences, as a system that questions itself and is capable of experimenting with the themes of the future city. The project involves a community



FIGURE 17.1 Above: Festival dell'Architettura 1 – Eteroarchitettura. Parma, September 20–26, 2004. Below: Festival dell'Architettura 2 – architecture, richness, and poverty. Parma, September 20–26, 2005. (©Archicittà – Festival dell'Architettura).

understood as *self-reflective*, the university community composed of teachers, researchers, and students, since it is able to consider itself in the interdisciplinary key of scientific applications destined to fall within the experimental processes of the camp's urban transformation: from new types of buildings for collective purposes, services, and accommodations, to technologies aimed at energy containment and the use of renewables, public-private laboratories for innovative process and product research (starting from the agri-food calling of Parma within the context of the *Food Valley*), up to digital networks, environmental monitoring experiments, the theme of waste, and the qualification of urban green areas with a scientific approach regarding biodiversity. This also applies to other university sites of the historic city, focusing on the issues of management and enhancement of cultural heritage (including the project archive at the CSAC – Centro Studi e Archivio della Comunicazione) and on the redesign of the hospital typology in a more integrated logic between research and clinical activity, in a context



FIGURE 17.2 Left: Festival dell'Architettura 3 – Architettura di rara bellezza. Parma, Reggio Emilia, Modena, October 23–29, 2006. Right: Festival dell'Architettura 4, 2007–2008, public landscape. Parma, Reggio Emilia, Modena, November 29 to December 14, 2007 and October 18 to November 9, 2008. (©Archicittà – Festival dell'Architettura).



FIGURE 17.3 Left: Festival dell'Architettura 5, 2009–2010, community/architecture. Parma, Reggio Emilia, Modena, October/November 2009 and November 26 to December 12, 2010. Right: Festival dell'Architettura 6, 2011, European city architecture. Project, structure, image. Parma, Reggio Emilia, Modena, October 19–22, 2011. (©Archicittà – Festival dell'Architettura).

of urban livability of the space for prevention as well as for cure. This is an articulated project of strategic value, called *Mastercampus*, on a city scale but with different intervention focuses in different places or university buildings, some also built, capable of defining an advanced settlement model and above all integrated with the reality of the host city.⁹

In the context of the School of Parma, attention has always been placed on the comparison and dissemination of university research on the themes of architectural and urban design, thus giving rise to numerous initiatives of international importance. A first phase



FIGURE 17.4 Above: Festival dell'Architettura 7, 2012, economy of the urban form. Parma, Reggio Emilia, Modena, Forli, November 20–23, 2012. Below: Festival dell'Architettura 8, 2013, stage set of the urban project. Parma, Reggio Emilia, Modena, Bologna, September to December 2013. (©Archicittà – Festival dell'Architettura).

was the so-called summer architectural project seminars entitled “The City of the Theater” (1987, 1990, 1994) and to follow “Cittaemilia” (1998, 2000). Opportunities for discussion on the applied project with the participation of Italian architecture schools aimed at favoring a direct generational exchange between masters and also very young students. But it is with the organization of the Festival of Architecture, from 2004 to 2014, that a structure was created capable of promoting a cognitive activity and enhancing research on the architectural and urban project on an international scale, involving various universities of original research, enhancing professional studios and individual architects of still unknown quality, taking up themes of a historical nature and disciplinary tradition to be updated, exploring the most promising settlement and architectural expression phenomena in emerging countries and not least the critical issues in the so-called advanced countries, above all seeking to understand and ask questions about the effects of globalization on architecture and the city. Hundreds of exhibitions, conferences, workshops, seminars and also competitions, introductory courses to the discipline, and *calls* for research specifically solicited with respect



FIGURE 17.5 Festival dell'Architettura 2004–2014, ten years of the Festival of the Architecture. Parma, October 25 to November 16, 2014. (©Archicittà–Festival dell'Architettura).

to the theme that each edition of the festival focused on through problematically eloquent titles including “Architecture, richness and poverty,” “Architecture of rare beauty,” “Public landscape,” “Community – Architecture,” and “Economy of the urban form.”¹⁰

The sixth edition of the festival in 2011 was entitled “The architecture of the European city: project, structure, image” (Amistadi and Prandi 2011) as if to foretell the development of a research that in recent years, also through the workshops of the Erasmus IP “The Europe Effect – An urban gate for the University Campus in Parma’s Oltretorrente District” and “Compact City Architecture. Designing Centrality, Regenerating Suburbs”¹¹ up to

today with the “ArchéA” project, has seen growing interest in a project culture oriented to the European dimension of architecture and in particular through the typology of the average city, the one that has always distinguished the characterization of the most authentic territorial relations in a Europe of cities rather than nations (Figures 17.1–17.5).

Notes

- 1 Guido Canella and his school in particular cultivated a perspective of urban interpretation of architecture starting from the structural and exchange dynamics of the city in history. See Canella (1981).
- 2 The new Faculty of Architecture, promoted by Carlo Quintelli with the decisive scientific contribution of Guido Canella, saw the approval of the then-Academic Senate and the Magnificent Rector Nicola Occhicupo of the University of Parma, as ratified by the Rector’s Decree of September 22, 1998.
- 3 The Research Doctorate in Architectural Composition of IUAV, in consortium with the Polytechnic Institute of Milan and the University of Naples, had a Board of Professors composed of Emilio Battisti, Guido Canella, Alfredo (Fredì) Drugman, Giorgio Grassi, Gianugo Polesello, Aldo Rossi, Alberto Samonà, Luciano Semerani, Uberto Siola and with Francesco Tentori as coordinator. An area of confrontation between schools, with a prevalence of Venetian orientation, whose first cycle covered the three-year period 1983–1986. In the first setting of the doctorate, the theme of the transmissibility of the teaching of the Italian 20th-century masters assumed particular importance, giving rise to a series of lessons later collected in the book “Lezioni di progettazione. 10 maestri dell’architettura Italiana” (Montuori 1988).
- 4 In the mid-1960s, the climate of theoretical elaboration that characterized the Milanese and Venetian schools in the syncretism between teaching and research, through young teachers often involved in both academic fields, is clearly detectable through two exemplary publications: “L’utopia della realtà” (Rogers 1965) and “Teoria della progettazione architettonica” (Samonà 1968).
- 5 The quotation refers to the essay by A. Christofellis, 1976. Canella’s attention to the Milanese context as a laboratory for experimenting a project epistemology based on the cognitive principle of typological and figurative characters as well as on the physiology of the city in its historical evolution in relation to the territory is quite demonstrative. In this regard, see, among others, the nonfiction production of the magazine *Hinterland* (1977–1985) and in a more general key of the magazine *Zodiac* (1989–2000), both directed by him.
- 6 The new toponym *Cittaemilia* was used for the first time in a summer seminar on architectural design held in Parma in 1998 and included in the book “CITTAEMILIA. Sperimentazioni architettoniche per un’idea di città” (Quintelli 2000). Among others, Quintelli (2002, 2012). In a context of extensive comparison on the type of linear city, see also Prandi (2016).
- 7 Several essays by C. Quintelli and collaborators on interpretative work and design research in the context of Emilia crossed by Via Emilia, including Quintelli (2001, 2005, 2006, 2014).
- 8 Research project presented in 2011 for the competitive call of the Emilia-Romagna Region within the European Social Fund with the title “Spinner 2013 – Progettare il costruito, nuovi modelli a qualità integrata per la città compatta. Politiche di rigenerazione e struttura delle centralità urbane nel contesto delle città dell’Emilia-Romagna” [Spinner 2013 – Designing the built, new integrated quality models for the compact city. Policies of regeneration and structure of urban centralities in the context of the cities of Emilia-Romagna]. For a more detailed illustration of the research methodology, see the essay by E. Prandi present in this volume.
- 9 A restitution of the scientific but also programming approach by C. Quintelli as pro-Rector of the Building, Infrastructure, and Urban Development Area of the University of Parma (2013–2017) can be found in the following publications: Quintelli (2011, 2017, 2018).
- 10 The originality of the *festival* formula for the architectural field was indicated on the levels characterizing the university culture and the polycentric location of the event (based first in Parma and then also in Reggio Emilia and Modena) through the research of Guido Guerzoni of Bocconi University of Milan (Guerzoni 2008). Among the editorial spinoffs of the festival, the scientific open access e-journal *FAMagazine*. Research and Projects on Architecture and the City (ISSN 2039–0491) directed by Enrico Prandi is particularly active.

- 11 Erasmus workshop held in Parma as part of the LLP (Lifelong Learning Program), respectively in 2012 with the participation of the architecture schools, as well as Parma, of Aachen, San Sebastian, Barcelona, Krakow, and in 2013 of those of Prague, Istanbul, Hamburg, and Nantes. See Prandi (2012, 2013).

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18

DESIGNING THE EUROPEAN MEDIUM-SIZED CITY

Urban Regeneration Technique through the Structured Densification of the Centrality System

Enrico Prandi

Introduction

This chapter deals with illustrating the *Urban regeneration technique through the structured densification of the centrality system* (TDSC): a method of designing the architecture of the city experimented at the School of Architecture of the University of Parma by the research group UAL – Urban and Architectural Laboratory with which – in addition to Carlo Quintelli, the scientific manager – the undersigned (as the coordinator) and Professors Marco Maretto and Carlo Gandolfi are associated.

The research began in 2010 with funding obtained through a competitive tender from the Emilia-Romagna Region within the European Social Fund called *Spinner 2013 – Designing buildings, new integrated quality models for the compact city. Policies of regeneration and structure of urban centralities in the context of the cities of Emilia-Romagna* and involved three PhD students¹ in the three-year period 2011–2014.

The research topic conceived and proposed by Carlo Quintelli as the scientific director of a research group that included scholars from the four regional universities² attained first place in the ranking out of over 70 projects presented.

The TDSC technique was subsequently presented, discussed, tested, applied, and verified on various occasions (conferences, seminars, architecture festivals), including didactic projects (workshops and laboratories) and progressively revised and refined until the application in the ArchéA project.³

Field Definition: The Medium-Sized European City

From the Italian tradition of urban studies of which Carlo Quintelli writes in this book,⁴ the research of the school of Parma that defined the characteristics of the TDSC has a significant field definition concerning the nature of the cities of possible application⁵: in other words, the methodological reflection does not deal with the city in general, which, as has been known, has many differences both from a geographical point of view and from a dimensional point of view and is also of physical structure. It deals with a particular type of city

defined as a “medium-sized European city” (such is the city between 100,000 and 500,000 inhabitants) that has certain common historical-architectural characteristics and that the research of the European Community, known as ESPON – European Spatial Planning Observatory Network (ESPON 2006) – defined as the most widespread type of city and in which there is a high quality of life and urban space.

Compact City versus Diffuse City: Evaluation of the Expansive Model of the Contemporary City

There is no doubt that the contemporary city presents an expansive development perpetrated by urban policies that up to now have favored, in a sometimes irreversible way, the so-called phenomenon of land consumption. In addition, the extreme peripheralization of the city has had negative repercussions on the quality of the space so as to create urban and social margins.

In an attempt to remedy these problems through a sustainable approach, the TDSC assumes the compact city⁶ (and in particular the density and articulation of its spaces) as the design principle of new urban spaces.

The Technique: Introduction

In line with the sustainability principle that imposes a “zero land consumption,” the project technique proposes *urban regeneration* as *densification* (according to the logic of “building within the building”), through the use of the available void according to an identification of the functions and role of the project derived from the concept of *centrality*. Different types of centralities have been identified (metropolitan, neighborhood, etc.), each of which applies to the project site through the analysis and subsequent identification of the specific role.

We could argue that it is an inter-scalar technique that links together the different scales of the project (from the territorial one to the neighborhood one via the urban scale) to obtain an architecture that fits fully into the structure of the city.

From the architectural point of view, a system of formal and functional archetypes derived from the history of the city participate in the construction of the new architecture.

It is a technique that, far from being modeling, starts from the characters of the city and from their analyses intended as the first stage of the design.

Definition of Urban Centrality

Centrality describes the action of a central element in its periphery and has been defined as a hierarchical concept between service and attraction (Christaller 1933). The attractiveness and diffusion of this element is based on the effectiveness of the central area and its accessibility. The element can be an urban center or a more specialized polarizing element (commercial, cultural, financial, administrative center; Choay and Merlin 1986).

The TDSC technique assumes as its main objective the urban regeneration of the indistinct urban fabric through the inclusion of architectures-centralities with a strong level of representativeness (figurative and formal) able to catalyze the sociality of the community that inhabits the urban parts. The new urban centralities operate on a structure and super-structure that the city possesses and that the research tends to bring out in the search for spatialities suitable for hosting these new capacitors (Canella 1995).

All the spatial components of the settlement context contribute to the project of the new urban centrality in a delivery between new and preexisting. In fact, the built-up and non-built-up spatialities involved in the urban transformation represent elements that strengthen the design of the new centrality which, focusing mainly on densification through composite settlement systems, is also implemented through the recovery of existing urban fragments to be included in the regenerative action.

The central space deriving from the aggregative system of the new urban centrality is a regulatory element with respect to its own boundary, the neighboring context, and the urban reality it creates.

Centrality, as a typological device and place of identity, has been shaped in the city through two types: the first is summarized in the *Forum* in which the directional function of society and the territory is concentrated as well as representing the place of exchange: a model in which the shape of the void defined through the composition of plastic objects that make up its boundary prevails. The second is represented by the great unitary architectural organisms condensing functions, activities, uses, and meanings similar to the same idea of cities such as basilicas or Roman baths or, more recently, service centers such as theatres, schools, museums, and so on.

This new architectural typology becomes the protagonist of the urban scene, acting at the territorial or simply neighborhood scale, able to regenerate the urban and social fabric, consolidate or requalify the shape of the city, and restore the physical continuity between the contextual morphological and typological components by activating a given system of variable relationships case by case.

First Phase: The Shaped City (Redefine the Shape of the City)

The technique takes the contemporary city as its starting point, within which it is possible to identify a form of the *shaped city* in which there is still a density such as to ensure formal and functional continuity between urban realities. The re-perimeterization of this city excludes the so-called diffuse city composed of scattered, more or less nuclearized urban areas contaminating the surrounding area.

The diffuse city is the effect of excessive land consumption that is now unsustainable for the entire ecosystem. The urban development pursued by research interrupts this trend by inverting the paradigm, replacing the model of expansive development with a model of compact urban development (internal expansion).

Full Space and Empty Space

The TDSC technique analyzes the urban space by mapping it according to two macro categories: full space and empty space, respectively represented with black and white. Derived from the studies of Rowe-Koetter, the “figure-ground” analysis is taken as a pretext for the sole purpose of an economy of urban space made, in this way, perceptually explicit. For the purposes of the method for both types of space (full and empty), the unit of measurement is the building understood as an existing visible and physically usable asset as a product of the regulations that design the city and which requires human intervention to modify the nature of the space. This is divided into different components: built-up space, that is, a full space; unbuilt-up space, that is, the empty artificial but unnatural space (squares, parking

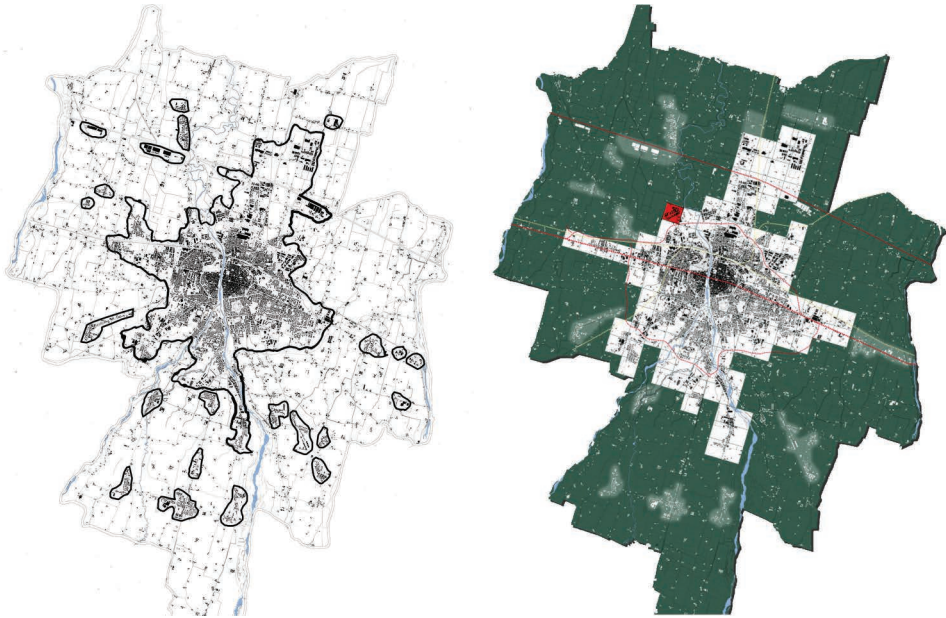


FIGURE 18.1 Parma. Left: mapping of the building. The shaped city and suburban or peri-urban settlements. Right: transformation of the shaped city into centurial pixels for the purpose of measuring the full and empty spaces (drawing by P. Strina).

lots, equipped green areas, level sports facilities, paved areas, etc.); this last type of space generally understood as that empty space uncontaminated by the human action of urbanization.

The method, in this first phase, can be summarized in a few key steps:

- a The identification of the shaped city and its rationalization in order to measure the spatial components within it. The identification of the shaped city derives from a first empirical profiling of the densest, most continuous and compact body of the city.
- b The subsequent measurement of full and empty spaces leads to the final data⁷: the pre-eminent amount of empty space compared to full space, within the shaped city part, in which there is a certain overall economy that can be used with a regeneration that aims at further compacting the shape in contrast to the expansive method adopted up to now⁸ (Figure 18.1).

Second Phase: The Analysis of the City and the Search for Spaces That Interpret Centrality

Identification of Areas

Starting from the analysis of the urban evolution that caused the explosion of the historic center and the spread of the construction, as a first step, *urban units* must be identified in the *shaped city* in which persist the formal and functional phenomena (signs) that have generated the aforementioned *urban realities* called, in the sense of the research, *areas of prevalent characterization*.

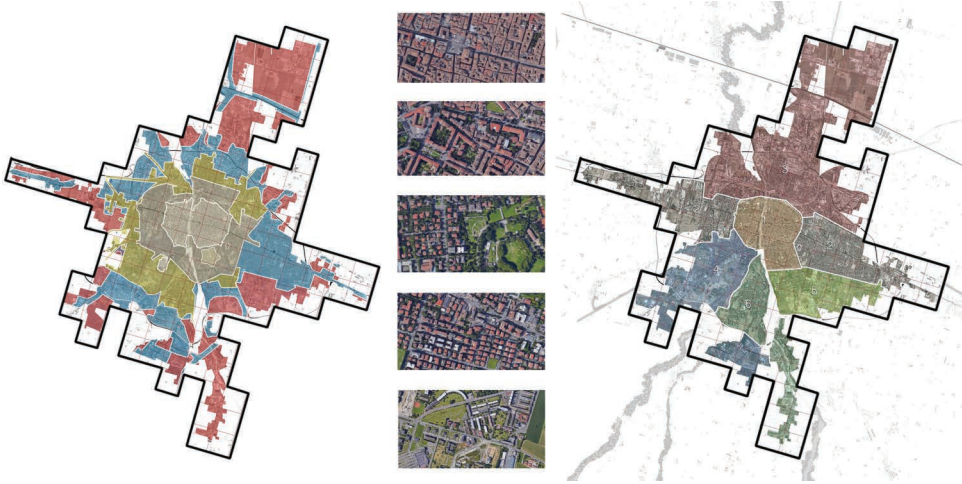


FIGURE 18.2 Parma. Left: urban development according to historical thresholds identified according to density types (in the middle). Right: identification of areas through territorial signs (drawing by P. Strina).

The medium-sized European city presents similar dynamics of expansion so as to be able to take the compact Renaissance city or walled city as an initial historical threshold for the purposes of our research. Hence, the 19th-century urbanization resulting from the industrial revolution led to the explosion of the *forma urbis extra moenia*. The research analyzes urban development through five historical thresholds⁹ generating as many urban realities or *areas of prevalent characterization*, each of them characterized by type-morphological particularities and by a correlated settlement density that can be measured through a relationship between full and empty spaces.

These characteristics derive from aspects related to the geographical location, the nature of the public and private space within the *area*, the infrastructural consistency that satisfies the accessibility requirement and, first and foremost, its endowment in terms of equipment and collective services for public use (Figure 18.2).

From the Area to the Definition of the Centrality Field

The identified *areas* that make up the *urban unit* are characterized by their own structure consisting of full and empty spaces, public and private, polarity and connectivity fabric. In order to identify the *space that interprets centrality*, the so-called *centrality factors* are identified within the areas, that is, components that are relevant due to a formal and functional nature in the urban fabric. These can be single buildings, urban portions, full and empty spaces, but these are mainly for public use with their own degree of attractiveness and usefulness for collective life.

They represent the first parametric index for evaluating the potential of the *area* itself to host, within its structure, *centrality fields* susceptible to transformation through the establishment of a new urban centrality.

The *centrality factors* establish a relational behavior between them according to a principle of physical proximity expressed through the entity of *relational clusters* characterized by their own structures.

Depending on the geometry-dependent structure of the relationship between the *centrality factors*, we will therefore have the following types of *clusters*:

- a *Linear*, characterized by a sequence of in-line centrality factors;
- b *Articulated*, in which the centrality factors relate, giving rise to polygonal figures;
- c *Articulated composite*, derived from an arrangement of centrality factors that shape a tetrahedral relational geometry.

Within an urban dimension that can be used in a cycle-pedestrian manner, contained within a radius of no more than 1,000 meters, multiple *relational clusters* can coexist that, in turn, interface in a system that can be defined as a *poly-cluster*.

This latter entity is activated when optimal spatial conditions persist, detectable within the neighboring urban fabric, such as to facilitate a connective cycle-pedestrian network between the individual component *clusters*.

The concentration, albeit widespread, of *centrality factors* in a narrow sector of area in which particular favorable conditions of infrastructural, spatial, and road conditions coexist, guides the definition of the *centrality field* formally definable through the urban signs called *perimeter edge components*.

The *centrality fields* are interspersed with each other by an intermediate fabric within which it is possible to operate regenerative strategies oriented to its full ability to mediate between one field and another.

The *centrality factors* differ in role and importance in relation to the *area* and the entire *urban unit*.

The *centrality factors*: depending on the catchment area they attract and the inter-scalar relationships triggered between the *centrality field*, *area*, *urban unit*, and vast metropolitan area, we will have centrality factors of metropolitan/urban areas and field relevance.

The prevalence of certain *centrality factors* within the *field* establishes the nature of the *field* itself and guides the choice of the most compatible type of *urban centrality* to be installed there.

The game of selection and identification of the *space that interprets centrality* will be played within the *centrality field* (Figure 18.3).

From the Field to the Identification of the Space That Interprets Centrality

The morphological structure of the *centrality field* represents the body within which to identify the *space that interprets centrality*.

The methodological procedure continues with the morphological analysis of the fabric making up the *centrality field* and allows us to describe the functional nature of the settlement density. This analysis is completed by surveying the aggregative typologies of the building space. Compared to the generic empty space of variable consistency, the spatialities emerge from which to select the *space that interprets the centrality* through factors of accessibility, usability, and visibility.



FIGURE 18.3 Parma. From the area to the definition of the centrality field. The centrality factors (in red) are mapped with the subsequent identification of the clusters (yellow line; drawing by P. Strina).

The void sought will have to be denoted by a useful dimension to accommodate the complex device of the new centrality as well as by infrastructural boundary conditions such as to guarantee maximum ease of access and use of the new project.

The *accessibility* requirement is satisfied when the chosen space is served by road arteries on which public and private public transport routes, of a fast or slow nature, coexist, corroborated by the presence of cycle and pedestrian paths.

The requirement of *usability*, on the other hand, is guaranteed by the presence of public and relationship spaces.

The *visibility* requirement is formalized through the presence of recognizable and fully perceptible *landmarks* during the experience of travel and usability of the *centrality field* that will dictate lines of force for the new project (Figure 18.4).

Third Phase: Toward the Project

The Historical Experience of Centralities

From the project point of view, the TDSC technique aims to identify not only the places of potential urban regeneration and densification through the use of the centrality strategy but also the type of centrality to be established so that the overall system of centralities can

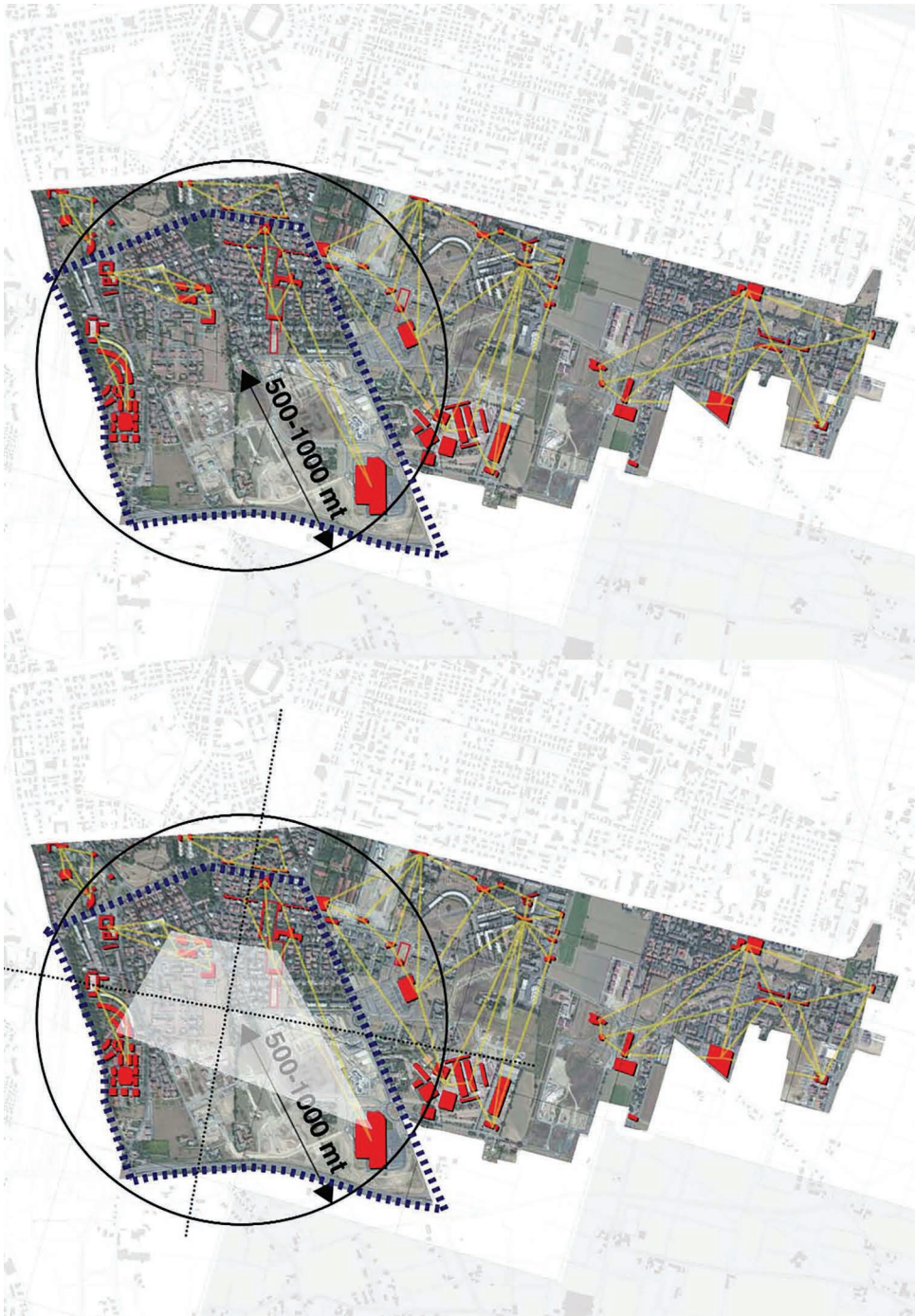


FIGURE 18.4 Parma. From the area to the definition of the centrality field. Above, the relationships between clusters are mapped that are activated according to a cycle-pedestrian type of usability and accessibility (highlighted by the radius of 500–1,000 meters) and the identification of the periphery component (blue dotted line). Below, the identification of the area of inactivity (white trapezoid; drawing by P. Strina).

function as a whole. The technique, therefore, links the components together at different levels (territorial, urban, neighborhood), transforming them into a centrality project (public spaces and related architecture). In the entirely interpretative passage from space and type of centrality to the actual project, some historical constants (archetypes) linked to the urban planning of the European medium-sized city come to our aid.

The analysis of the models in reference to their key role in significant chronological passages for urban evolution has revealed typological invariants that return. In the collective imagination, these typological elements lead back to the idea of *centrality* or *centrality factor*: among these we find the market, the basilica, the portico, the temple, the palace, the Gothic lot, the tower, the linear body, the central plan, the amphitheater, the courtyard, and the pavilion. These, comprised together, generate settlement typologies characterized by spatiality often of a centripetal or centrifugal nature in which the center plays a dominant role, with compositional focus and often in public space. All the settlement typologies exhibited experience density, the last essential factor in the urban project on which forms, distances, spatial perceptions, and consistency of the urban structure depend (Figure 18.5).

The Typological Declination of Centralities

The role types of the new centrality within the city and the territory are the first determinant of the project.

The previously illustrated parts have contributed to the definition of a generic profile of the new urban centrality as a pivotal tool for a precise densification technique.

Urban centrality is conceived as:

- an urban project capable of regenerating and densifying large parts of ordered/disordered construction;
- an urban regeneration tool focused on the redevelopment of public space in the collective life setting;
- a transmitter of identity and community places that acts as a social catalyst within the shaped city and in the logic of a polycentric geography;
- a composite architectural device in which the type of its plastic components takes on the role of vehicle of the identity and traditional image of the context with which the project relates in continuity;
- an architecture with a strong degree of representativeness that stands as an exceptionality within the urban blur, meeting the requirements of maximum visibility while respecting the project context;
- an architectural composition that mainly insists on consistent public spaces, identified through the prefigured method; their reduction is compensated by the quality of the project and the polyfunctionality of the space itself that derives from it;
- a multifunctional composite capable of serving various roles in order to maximize the liveliness of the planned urban place;
- an urban complex in which the distinction between public and private space, internal and adjacent to the project, is strongly mitigated thanks to design choices aimed at maximum usability of the entire configured space.



FIGURE 18.5 Parma. From the area to the definition of the centrality field. The centrality space is identified (below, yellow) among the available space resources (above, yellow; drawing by P. Strina).

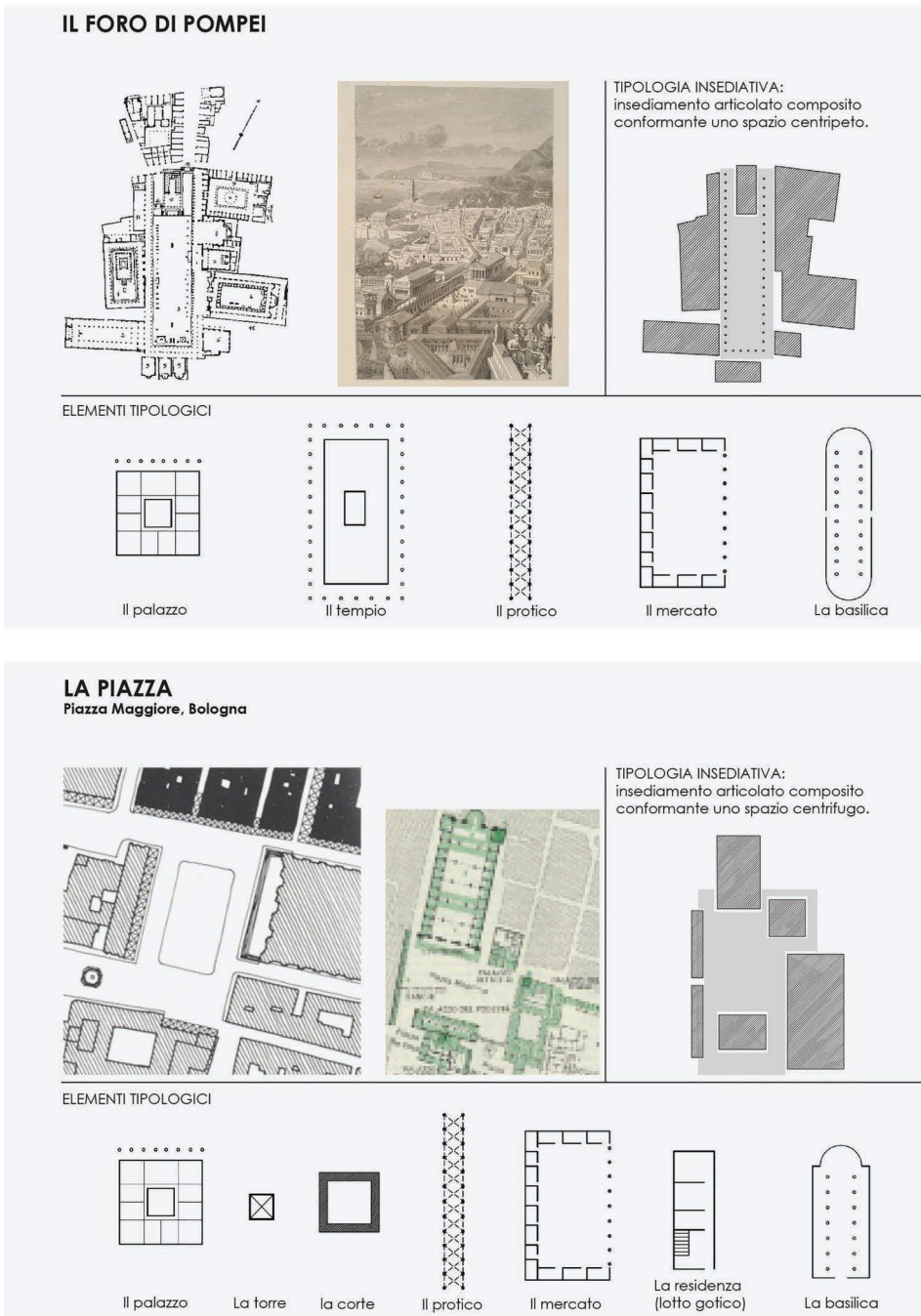


FIGURE 18.6 The historical experience of centralities: the Foro di Pompei and Piazza Maggiore in Bologna as settlement typologies that contain recurring typological elements such as the palace, the temple, the portico, the market, the tower, the basilica, and so on. Compared to the nature of the project, the typological elements help to direct the new design (drawing by P. Strina).

The generic centrality thus characterized reacts with the *urban unit* and with the aptitude of the parts that compose it. Depending on the transcalar relational capability between the project and parts of the city, urban unit, and the vast metropolitan area and territory, three different types of urban centrality are outlined, the difference between which is expressed in terms of form and function as well as in terms of relationships.

These are:

- a *Urban centrality centered on a polycentric relationship system* investigates the inter-scalar relationship between the infrastructural network and its intermodal exchange nodes that act as a hinge both at the territory scale – exchanging with the dynamic flow of the infrastructure that crosses them – and at the urban scale, as a suture between parts separated by the rail tracks. Similar to the archetype of the Porta Urbis, it fulfils the representative functions as a threshold and showcase before restoring the image of the city;
- b *Metropolitan type urban centrality* capable of triggering transcalar relationships and definable link between city and hinterland, entities making up the metropolitan landscape. It acts as an architectural garrison over the vast area that is responsible for its governance. The new metropolitan-type urban centrality becomes the place of directionality whose compositional forms must be able to represent their dominant role and communicate it within the vast area. In the city, it assumes the role of a founding fragment, a strategy of widespread regeneration that systematizes the preexisting contextual directional functions;
- c *Urban centrality of parts of the city* that is a catalyst for a particular collective neighborhood life. It is capable of triggering relationships between areas that participate in the configuration of a polycentric geography of community places ideally defined as urban squares.

Each type of centrality will be characterized, in addition to its size, by a complex functional program within which a special expressive function of the aptitude of the individual types will emerge.

During the ArchéA project, the Parma unit adopted the TDSC technique in the two cases of the Architectural Design Workshop of Bologna (November 23–30, 2019)¹⁰ and of Aachen (November 21–30, 2020).¹¹ Both project sites – the area of the former fruit and vegetable market adjacent to the “Bolognina” district in Bologna and the Drieter Hof district in Aachen – led to the experimentation of type B Metropolitan-type urban centrality (Figure 18.6).

Notes

- 1 The doctoral research envisaged a common methodological introduction and practical application on different types of centrality by the doctoral students: Annapaola Nolli, *Densification technique through the strategy of urban centralities in a polycentric relationship system* (applied to the city of Modena); Paolo Strina, *Densification technique through the strategy of metropolitan urban centralities* (applied to the city of Bologna); Nicola Montini, *Densification technique through the strategy of urban centralities of parts of the city* (applied to the city of Forlì). The theses had Prof. Carlo Quintelli as supervisor while the undersigned participated in the ongoing reviews/discussions.
- 2 The research group that presented the project included, in addition to Prof. Carlo Quintelli (scientific manager), Prof. Enrico Prandi (Department of Civil, Territorial, Environmental Engineering and Architecture – University of Parma), Prof. Giovanni Pieretti (Department of

- Sociology – University of Bologna), Prof. Vanni Codeluppi (Department of Communication and Economics – University of Modena and Reggio Emilia) and Profs. Nicola Marzot, Laura Gabrielli, and Pietromaria Davoli (Department of Architecture – University of Ferrara).
- 3 A monograph dedicated entirely to the TDSC methodology is currently being published by Paolo Strina and with an introduction by Carlo Quintelli, and a critical postface by Enrico Prandi (Il Poligrafo editore).
 - 4 See the essay by Carlo Quintelli, *The long-term method of the urban project in Italy and the Parma School*, and the essay by Lamberto Amistadi, *Drawing the city: form and meaning*, contained in this book.
 - 5 Already in that period, the group originating from research on cities in the Western Emilia territory (CittaEmilia), the idea that a European city existed took shape, meaning a particular type of city with some prevailing historical, morphological, and cultural characteristics. See Amistadi and Prandi (2011).
 - 6 The principle of the compact city was the model that, starting from 2011, was tested in the projects for Parma within the two European Workshops IP Erasmus CCA – *Compact City Architecture. Historical City Centre Design in Europe* (Parma 2012) and *Compact City Architecture. Designing Centrality, regenerating the suburbs* (Parma 2013). See Prandi (2012, 2013).
 - 7 The measurement of space is omitted in the application on Aachen.
 - 8 A few years after the start of the research, the trend of an expansive model regardless of land consumption issues is about to be abandoned in favor of more sustainable models. To date (2020), there are many urban planning tools that have reversed the trend and can be defined as “zero land consumption.”
 - 9 The urban facts deriving from the relative historical thresholds are historical center, historical suburbs, suburbs of the 1930s–1960s, suburbs of the 70s–80s, suburbs of the 90s to today’s suburbs.
 - 10 For a description of the project with respect to the technique, see the essay by Paolo Strina in this book and Balducci (2020).
 - 11 For a description of the project with respect to the technique, see the essay by Giuseppe Verterame in this book.

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19

THE PROJECT OF A METROPOLITAN URBAN CENTRALITY

The Case of the Former Fruit and Vegetable Market of Bologna

Paolo Strina

The analyses of the state of affairs of the entity-city, through the appraisal of urban phenomena dating back to the 1980s that have consolidated over the last 20 years, judges the failure of an urban planning model based on the expansion of the form that is still in use today, despite the first signs of a countertrend. A consequence of this urban planning practice, based on obsolete zoning concepts, now superseded by the equalization mentality, is the emergence of peripheral “non-places.”

To date, the city therefore presents itself as an organism composed of two macro-entities: the periphery and the opposing historic center, an emblem of a compact city that has been the subject of intense debate since the 1960s focused on possible dedicated regeneration policies. A city no longer attributable to a clear and legible formal model but which remains more similar to a gradient the fabric density of which noticeably fades as one moves away from the center and enters the dimension of addition, of conurbation, responding only to infrastructural logic.

The research program “*Spinner 2013. Designing the built. New integrated quality models for the compact city*,”¹ carried out by the group coordinated by Prof. Carlo Quintelli of the University of Parma and subsequently led to the *Urban regeneration technique through the structured densification of the centrality system (TDSC)*,² represents its evolution.

The objective is the formulation of a regeneration method of the contemporary city according to a polycentric logic centered on public space. The result of the research is an “analysis-metaproject-urban project” process technique that exploits the presence of a vast resource of empty but already built space (urbanized voids) inside the shaped city, potentially densifiable through the settlement of complex architectural typologies with a prevalently public character, defined as urban centralities (Figure 19.1).

The transcalar analysis of the shaped city, built upstream of the research work, brings to light an anatomy of the urban body composed of areas of a prevalent functional character, centrality factors coinciding with public or private amenities and equipment for public use, and centrality fields³ intended as polarizing basins.

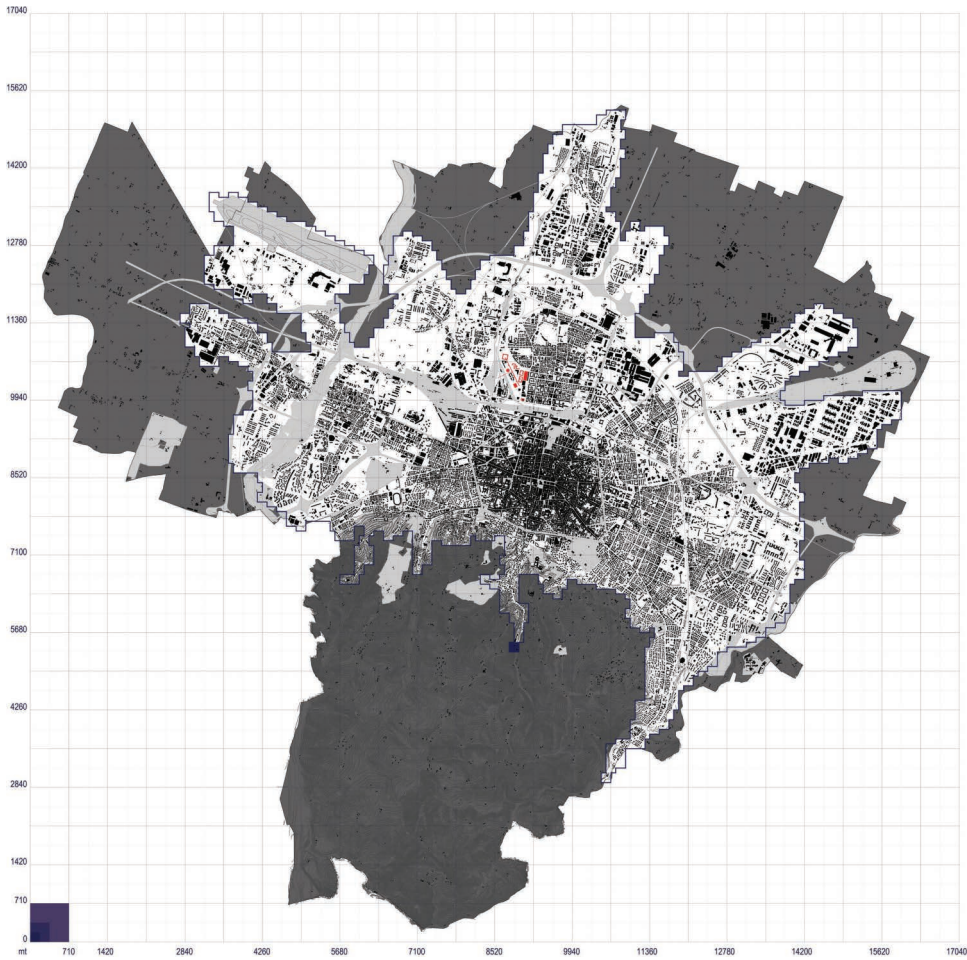


FIGURE 19.1 The shaped city of Bologna with (in red) the project masterplan of the new metropolitan-type urban centrality (scale 1:20000).

The so-called spaces for the urban centrality of the project are selected within the fields of centrality, according to the morpho-typological conditions filtered according to accessibility, visibility, and usability factors.

The space, based on the nature of the context in which it is established and the types of urban relations it triggers or enhances, takes on three different roles:

- A. Urban centrality in a polycentric relationship system;
- B. Metropolitan urban centrality;
- C. Urban centrality of parts of the city;

During the research and in subsequent didactic experiments, all the three different central roles were studied in depth.

The ArchéA research program provided the opportunity to verify and refine the TDSC technique, through the regeneration project of the former fruit and vegetable market of Bologna developed during the Architectural Design Workshop held at the Faculty of Architecture Bologna-Cesena from November 23 to November 30, 2019.

The application of the TDSC technique to the project context, gradually from the large territorial scale to the more restricted one of the project, has suggested the application of the metropolitan-type urban centrality intended as a link between hinterland and city, between the metropolitan and urban landscape, having a predominantly directional function able to “govern” the vast area of reference. It is therefore evident that urban centrality of a metropolitan type is established within a city, an area and a field of centrality with a high intrinsic metropolitan vocation, a condition that is certainly detectable both in the city of Bologna,

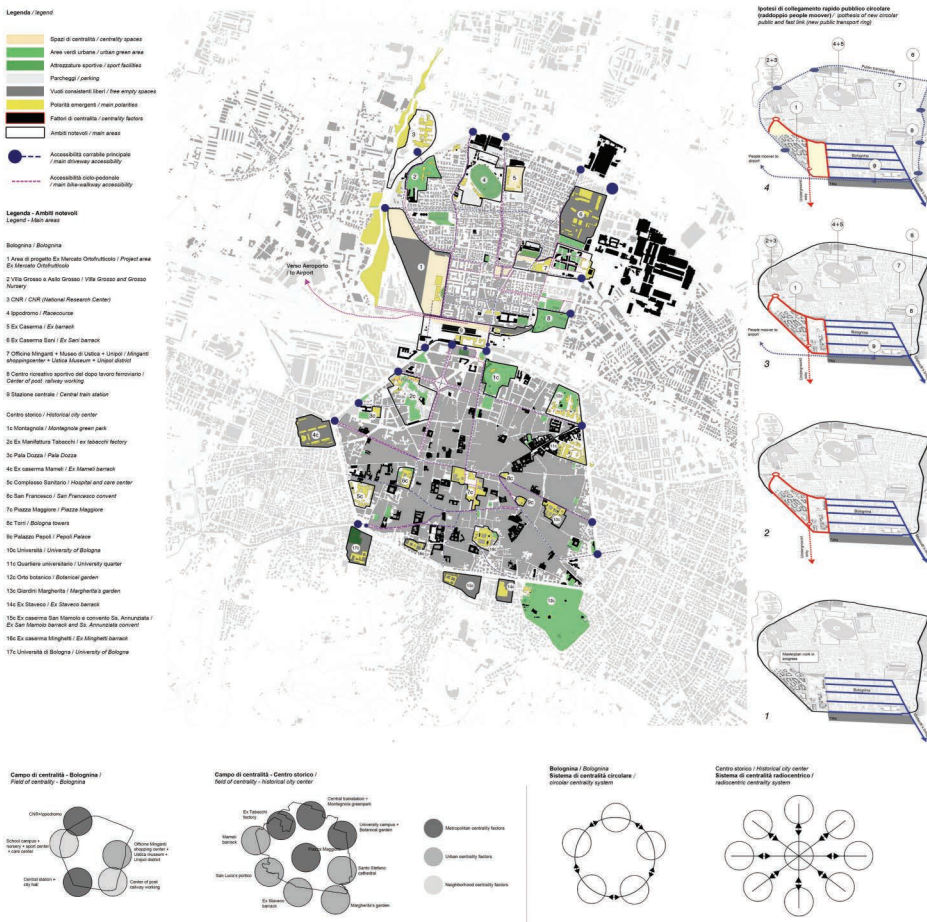


FIGURE 19.2 Relational analysis of the “Bolognina” and Historic Center fields of centrality, in which the factors of centrality emerge. On the right shoulder and in the space below the table, the layouts of the project’s circular metropolitan centrality supported by an ideal system of annular mobility (scale 1:10000).

which became a Metropolitan City in 2014,⁴ and in the “Bolognina” district, where the chosen project area continues.

The application of the TDSC technique to the objective of the workshop led to assume the “Bolognina” district itself as a dominant central area within a highly infrastructured area, in close contact with the hinterland thanks to the presence of the motorway exit tollbooth toward the fair district and endowed with centrality factors of metropolitan character such as the railway station, the axis of via Stalingrado, the motorway belt, the fair district itself, the headquarters of the National Research Centre, the Hippodrome, and the new headquarters of the Town Hall. The urban value of the Bolognina centrality field is strengthened by the close proximity to the historic center to which it is connected by the Central Station system and the Matteotti Bridge (Figure 19.2).



FIGURE 19.3 The structure of the “Bolognina” centrality field, highlighting the annular mobility layout with respect to which the new metropolitan-type urban centrality project is established (scale 1:5000).

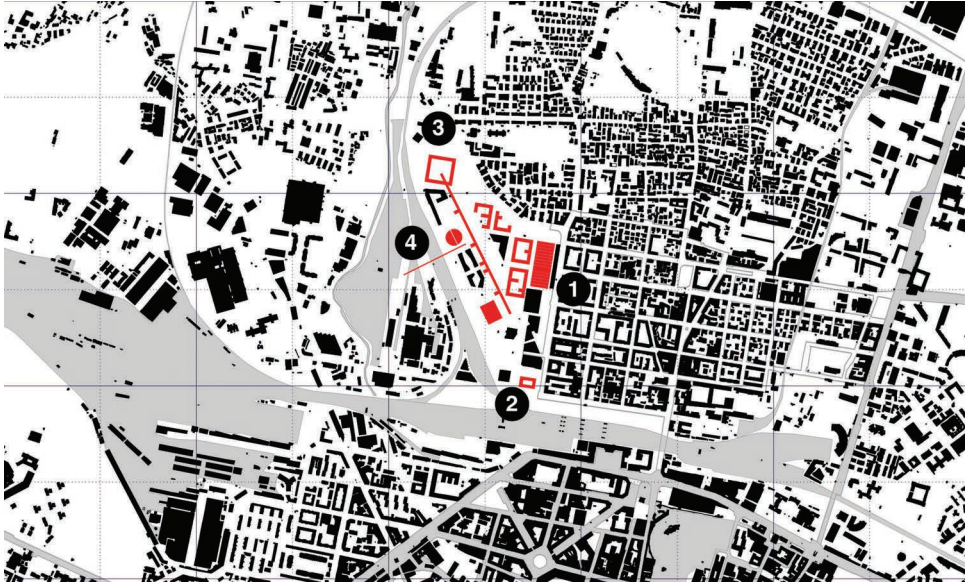


FIGURE 19.4 Aerial view of the project area with the four main subareas of strength of the project established (1 – periphery toward the historic “Bolognina”; 2 – confluence on via dei Carracci adjacent to the railway station; 3 – North confluence toward the CNR [National Research Center]; 4 – naturalistic periphery toward the Parco del Navile).

This plural coexistence of characteristics gives metropolitan value to the project context in which to establish and experience a new metropolitan centrality that amplifies the management role intrinsic to the entire area.

The structure of the “Bolognina” centrality field consists of a *Cardo* and *Decumanus* system centered in Piazza dell’Unità, with respect to which the orthogonality of the North-South and East-West connections develops between the spaces responsible for internal usability of the field itself. This system interfaces with a series of centrality factors located on the edge of the field and configures a type of ring-shaped centrality space, composed of several fragments, including the former fruit and vegetable market (Figure 19.3).

The project area appears as a large urban void already strongly and irreversibly urbanized. The first objective of the project is the hierarchization of the space into specialized subspaces, within which to operate a new linear urban centrality consisting of interlinked polarities, capable of consolidating and regenerating the urban structure of the “Bolognina” neighborhood and strengthening the relationships between peripheral components (Figure 19.4).

From these premises, four main subareas of the project area have been identified:

1. The dense eastern periphery overlooking the historical fabric of “Bolognina”, characterized by the presence of the new Town Hall, the Nervi Pavilion, and the multistory car park. The said periphery is flanked by a primary road with respect to the vehicular traffic parked at the new municipal headquarters and directed toward the northern outskirts. The front of this periphery is strengthened by the preexisting monumental entrance portal to the old market, a perspective focus with respect to the East-West axes coming from via Stalingrado toward Canale Navile;

2. The confluence on via De ‘Carracci, the link between the level area of the High Speed Station and the project area. In it converges the ascent from the vehicle underpass coming from the city center and directed to the Kiss and Ride of the High Speed and to the center of the project area;
3. The North confluence, a bonding point between the project area and the peripheral landscape of the National Research Centre strongly influenced by the naturalistic pre-existence of the Navile canal;
4. The natural boundary adhering to the Navile Park.

The cornerstones of the new metropolitan-type urban centrality are located in the four subareas of the project area, respecting the buildings already built in the first phase of implementation of the Masterplan approved by the Municipality of Bologna and only partially completed to date.



FIGURE 19.5 Volumetric plan of the project (scale 1:2000).

The result is a paratactic composition originating from the square in front of the new Town Hall.

Accessibility is guaranteed from the Town Hall itself and from the entrance portal to the south, facing Via Carracci, by flanking an existing office building with a courtyard residential block with related services.

The square effect is obtained by introducing a building hosting the gymnasium that at the same time circumscribes the space in a smaller and more typical dimension of the consolidated city. From the square stands a regulating axis that extends the perspective diagonal dictated by the covered space of the new Town Hall: a real linear arcaded building with tertiary functions on the upper floors that divides the project area into two complementary parts: the one adjacent to the Parco del Navile and the one most in contact with the compact historical fabric of “Bolognina” (Figure 19.5).

The more public functions are concentrated toward the Parco del Navile, such as the school complex and the multipurpose center, autonomous, punctual, and linguistically

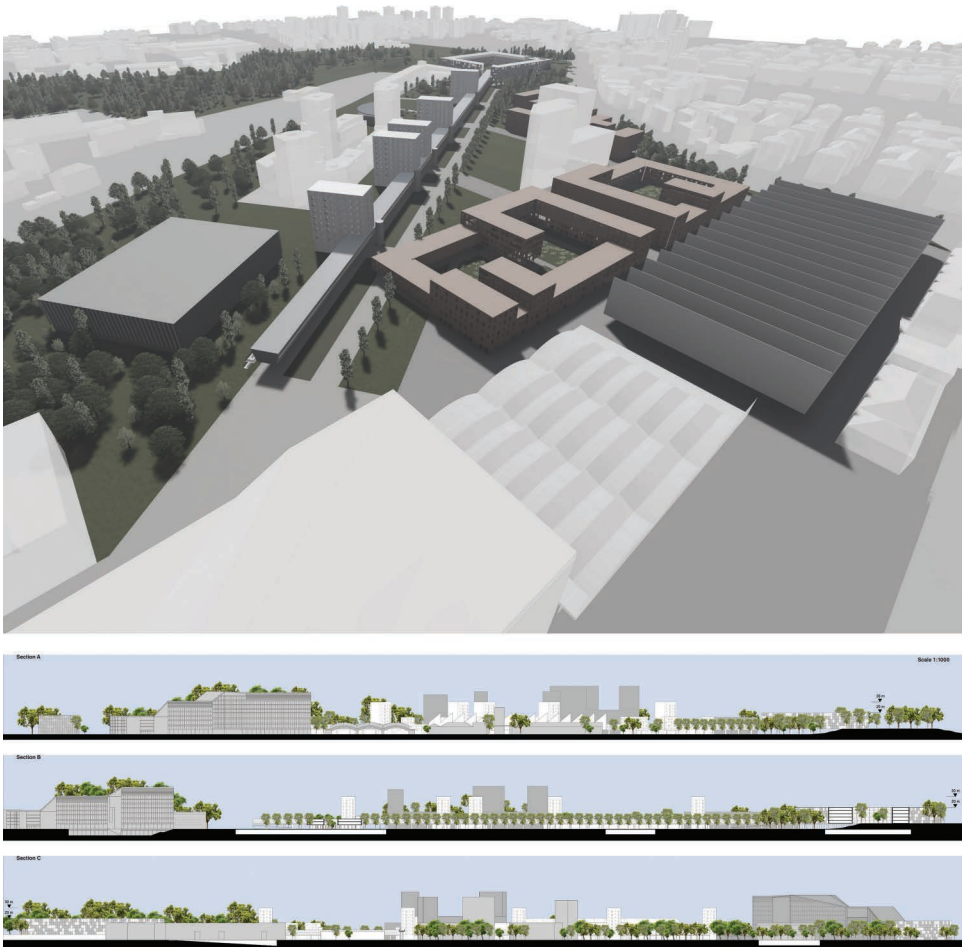


FIGURE 19.6 Aerial view and environmental sections of the project.

more similar elements to the naturalistic context with which they relate. The residential courtyards are concentrated toward the compact and consolidated fabric of historic Bolognina, which replicate the typical morphology of the neighborhood, mitigating the impact on the identity level. The punctual elements on the front of the Navile, together with the articulations of the residential courtyards on the front of the historic Bolognina, configure rest areas along the *architectural promenade* in correspondence with significant elements such as the school complex, the multipurpose center, and the bridge connecting the axis matrix and the Parco del Navile. Corresponding to these “open spaces,” there are residential tower blocks attached to the built axis, the portico of which is fundamental with respect to the maximum permeability between the project areas. The regulating axis culminates in the north with a highly monumental, stereometric, monolithic, and highly visible confluence element: the large courtyard hosting types of specialized residences and a hotel. The project

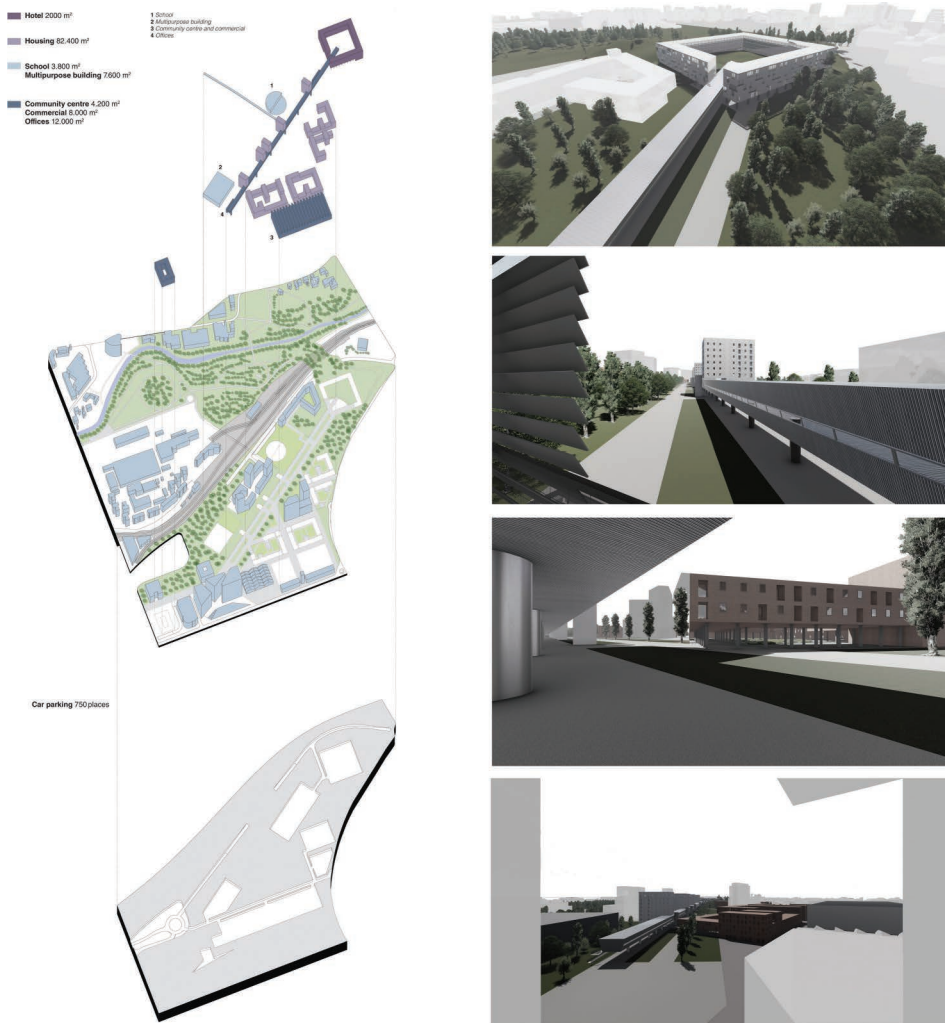


FIGURE 19.7 Functional stratigraphic axonometry and views of the project.

matrix is superimposed on a second pattern of routes coming from the “Bolognina” fabric, which are articulated between the new residential courtyards. This more urban landscape finds in the new building used as a covered market the connecting element between the historic “Bolognina” and the new centrality.

The building in question, placed at the end of the “*enfilade*” periphery toward the neighborhood, strengthens the public space as a filter between two realities. This is configured as an elevated slab that organizes functional levels: the ground floor imagined as a large cover with a giant staircase that underlies the market; the upper floors, on the other hand, host commercial and tertiary businesses and the community center. The elevation of the new slab with shed roof strengthens the front on the Bolognina, placing itself as a linear and silent background to the tower of the entrance portal to the former fruit and vegetable market, preserved and recovered as an opening to the new hypostyle space (Figure 19.6).

The project is completed with a level of vehicular traffic and totally underground parking, in continuity with the underpass coming from the historic center of Bologna already partially built. This choice is inclined toward the ideal of the “car-free” metropolitan urban centrality, in which the level of public space is at the complete disposal of the inhabitant for a type of cycle-pedestrian use between paved surfaces and equipped green areas (Figure 19.7).

*Project by Enrico Prandi (scientific manager) with Carlo Gandolfi, Paolo Strina (coordinating tutor), and Giuseppe Verterame. Students: Isabel Chiesa, Davide Fabbri, Ernesto Frigerio, Camilla Garagna, Irene Di Santo, and Antonio Villa.

Notes

- 1 The research project was financed by the Emilia Romagna Region with a doctoral scholarship that led to the thesis of Strina, P. *Densification techniques through the metropolitan urban centralities strategy*, in addition to those of Nolli, A. *Densification techniques through the urban centralities strategy centred on a polycentric relationship system*, and Montini, N. *Densification techniques through the urban centralities strategy of parts of the city* (supervisor, Quintelli C., 2015). The research, under the scientific direction of Carlo Quintelli with Enrico Prandi and Paolo Strina and the collaboration of G. Verterame, is undergoing a methodological study with the aim of a forthcoming publication for the types of Il Poligrafo, Padua.
- 2 For a concise explanation of the TDSC technique, see Enrico Prandi’s essay in this book.
- 3 Perimeter area through the peripheral component susceptible to transformation through the implementation of new urban centres. The intrinsic potential of the field is measured based on the quantity and quality of centrality factors present in it and their synergistic relationship modalities through the morphological conditions that symbolise the field.
Definition taken from the doctoral thesis of P. Strina, *Densification technique through the metropolitan type urban centralities strategy*, p. 375.
- 4 In Italy, a law modifying the administrative structure has led to the establishment of the metropolitan cities. See Law April 7, 2014, n. 56, “Provisions on metropolitan cities, provinces, on the union and mergers of municipalities,” called the Delrio Law from the name of its author.

20

DENSIFICATION AS THE KEY TO SUBURB REGENERATION

The Case of Driescher Hof in Aachen

Giuseppe Verterame

The Driescher Hof district in Aachen, chosen as the design experimentation context at the Architectural Design Workshop¹ organized by the Rheinisch-Westfälische Technische Hochschule of Aachen as part of the ArchéA project, represents an emblematic case of the extreme suburbs of many European cities for its settlement characteristics, urban phenomena, and critical issues related to the absence of public space.

These parts of the city are often the result of plans linked to satisfying certain urban planning standards, which have unreasonably artificialized the natural areas of the territory into a set of diffuse fragments for decades. The suburbs are most distinguished by their extension and discontinuity. These phenomena have generated a dispersion of the urban form, bringing with it the effects of land consumption, the absence of collective space of a certain quality, lack of services, and problems related to architectural and urban recognition. This leads to an image of the city that spreads without any rules, producing urban appendages that are unrelated, inhomogeneous, discontinuous, and lacking a relationship with the preexisting buildings in which the characteristics of a certain urbanity are clearly outlined. The intervention on these parts becomes an important opportunity to rethink the city with a view to urban regeneration, with the aim of systematizing its spatial resources and enhancing the places, seeking a renewed urban sense. Today, the suburbs represent the largest part of the territory as a result of a 'suburban' urban production that has canceled the sense of the center, as a place where dynamic forces connected to each other that animate the city coexist.

The suburbs still contain a lot of material to be reused; these are often spaces enclosed between buildings, lacking in quality and transformed into *residual spaces* in search of new identities.

The architecture of the city is currently undergoing a redefinition of its operational tools capable of carrying out “an overall restructuring that obviously, while safeguarding the built heritage, captures its evolutionary potential, the possibility of becoming another city as a whole, willing to become the privileged field of design interpretation” (Quintelli 2011, 142).

In the specific case of the heterogeneous district of Driescher Hof, this is also found in an incomplete urban condition, evident from its overall design created in separate parts

and often based on logics of speculative use of the urban space. With a mainly residential function, this portion of the district is in the southeast end of the city; its southern edge is an intense unspoiled natural environment that becomes rural in the urban vicinity; to the east is the infrastructural element of *Autobahn 44*, a federal highway that connects numerous cities in Germany and Belgium; to the north with part of the long straight *Triererstraße* that connects it to the urban center and to the west with buildings belonging to the Forst district, an administrative area that also includes the area of *Driescher Hof*.

More specifically, in the immediate vicinity of the project site identified, then questioned within the analysis that involved the whole district, there are parts that, overall, fail to establish a spontaneous *urban effect*: a strong discontinuity is noted among its components, the absence of a systematic nature capable of characterizing this part of the city with a meaning that can be traced back to an experience of space that is simultaneously unitary and addressed to the community. In fact, from the observation and analysis carried out it is possible to identify – from west to east – some architectural and spatial individualities, such as the disused space of the Theodor-Körner barracks on *Lintertstraße*, the Thomas Torkler manufacturing complex and its (occasional) extraction site, and a heterogeneous fabric with variable densities composed of different building types – tower, in-line buildings, and terraced houses. A conspicuous green area is inserted in the central zone without producing particular benefits from the aesthetic landscape and use perspective; it is a deconstructed element in relation to the built elements, inaccessible from the residential area due to a strong difference in height.

The observation of urban phenomena useful for the design activity follows a *transcalar* process, which depending on the objectives widens and narrows the analytical field from the particular to the general and vice versa, in search of the bases on which to reestablish the construction of a part of the city. The design process uses three different levels of analysis – the scale of the territory, the scale of the city, the scale of the district – according to the methodology developed by “Spinner Research 2013 – Designing the built. New integrated quality models for the compact city,”² later perfected in the *Urban regeneration technique through the structured densification of the system of centralities* (TDSC).³

An analysis was produced at the territorial scale that highlights the particular geographical condition of Aachen, part of a *trilateral system* – together with Maastricht and Liège – and for this reason interposed and bordering on three nation-states, Germany, Belgium, and the Netherlands. At the same time, it manages to enter into a relationship with two important territorial systems: Düsseldorf-Köln-Bonn-Koblenz, cities all crossed by the Rhine, and the one formed by the cities Essen and Dortmund in the Ruhr Valley. The result is an important strategic potential on a large scale, such as to distinguish Aachen, within an infrastructural apparatus, as a *link* and a *frontier city* (Figure 20.1).

The TDSC technique applied defines, first and foremost, the general context for its application: the *shaped city*, a place “where a physical, formal, spatial and functional continuity remains between the parts that compose it” (Strina 2015, 375). This entity is specified through an empirical procedure that circumscribes the urbanized core of the city, isolating itself in the points where the built is separated into localized points, dispersed in the countryside. It is built by means of a module and its submultiples, the *centurial pixel*, derived from the dimensional unit typical of Emilia-Romagna settlements.

Territorial signs and *areas* were then identified, two elements that highlight the composition of the city by parts, where the multiple nature of the city emerges as “the sum of many

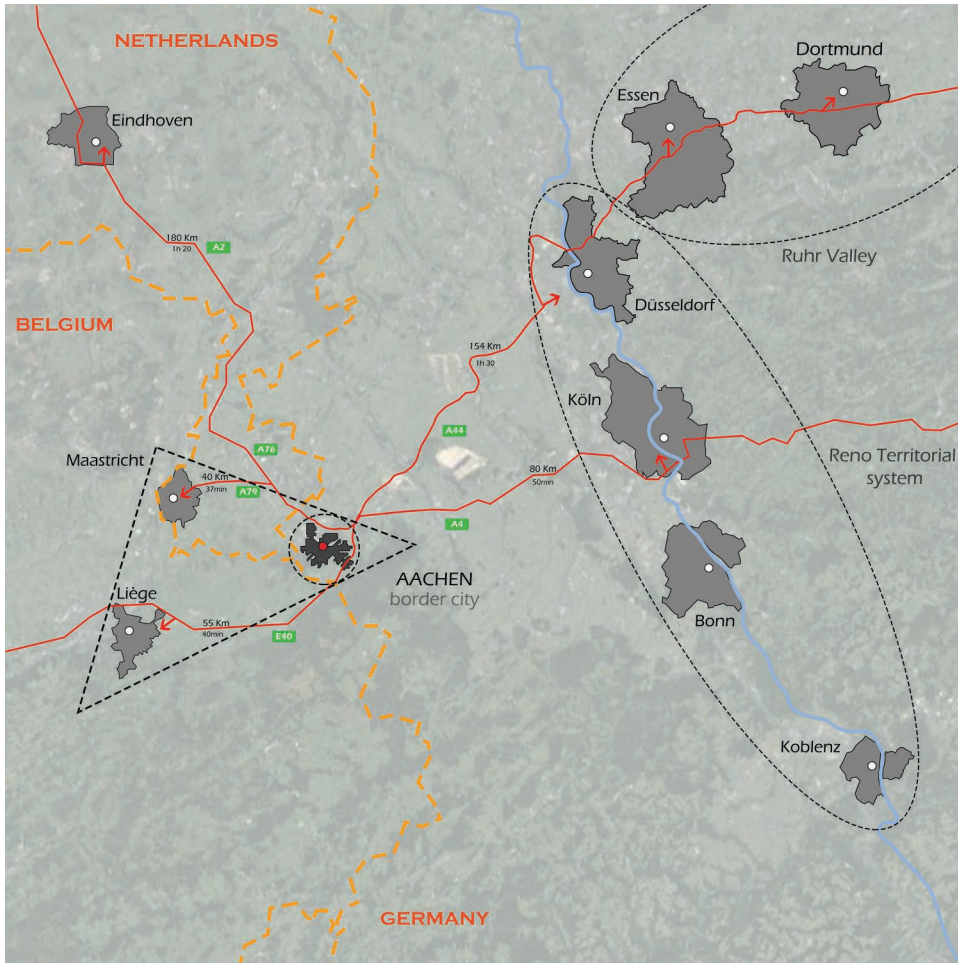


FIGURE 20.1 Territorial scale analysis. Size 90 x 90 cm, scale 1:200,000.

parts, neighborhoods and districts that are very different and differentiated in their formal and sociological characteristics” (Rossi 1966, 42).

The procedure highlighted the *ring* of the historic center, the 19th-century *ring*, the railway, the wooded area to the south, the ring road and the highway sections of *Autobahns* 4 and 44 as *territorial signs*, and the autobahns respectively connecting to the urban expansions to the north and east, the latter within the urban part considered in the design experimentation.

The *territorial signs* delimit different *areas* in order to obtain proof of the heterogeneity of the urban organism, differentiated in its growth processes and in which “particular distinctive characteristics derived from geographical, territorial, morphological and functional factors” (Rossi 1966, 44) can be recognized. The *areas* of the historic center and the various historical expansions of the city have been identified within the city, from the *first* suburbs to the more recent ones, some of which can be identified as *satellites*, which give it a ‘sprawling’ urban shape (Figure 20.2).

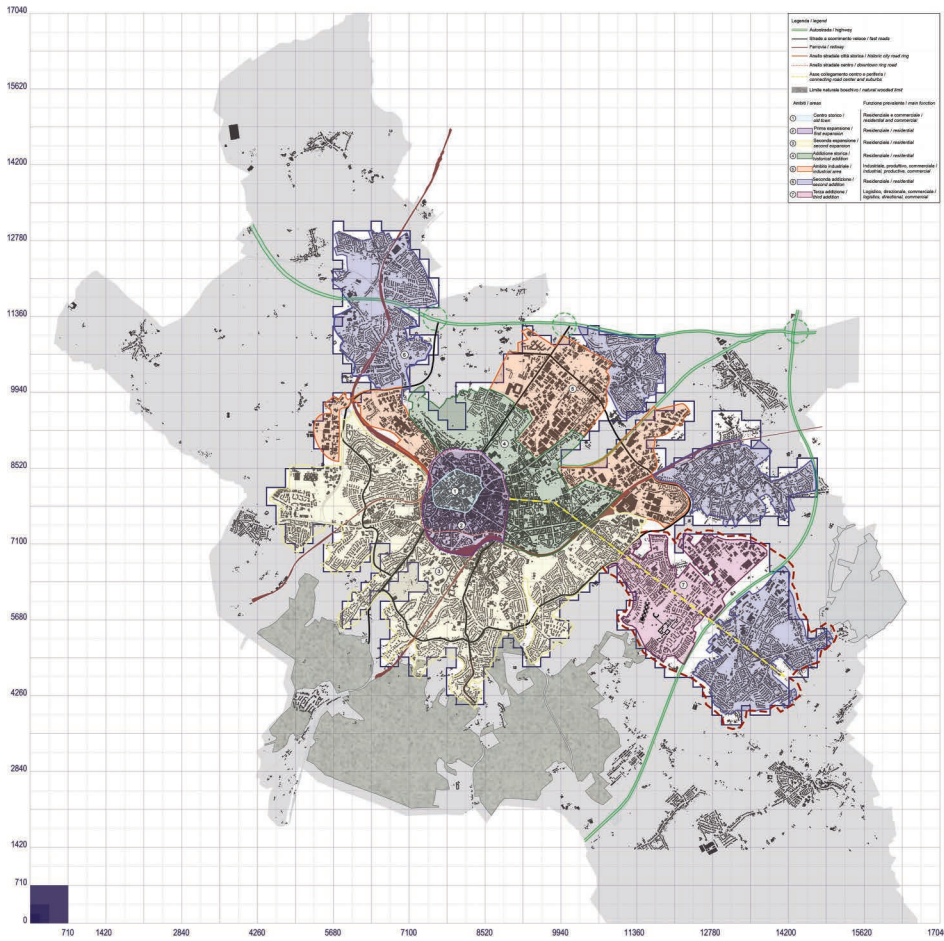


FIGURE 20.2 Identification of a *shaped city*, territorial signs and areas. Size 90 x 90 cm, scale 1:20,000.

The project area is included within one of these *aggregates*, located to the southeast and distinguished by its significant size and evident formal autonomy. This *citadel* is the union of the urban districts Forst and Brand, separated by *Autobahn 44*, which played a fundamental role in its development, just as the straight road Triererstraße was important for its genesis. In fact, the Napoleonic axis already built in the early 19th century favored a first settlement in the mid-19th century, which then grew until the end of the 1990s. The current road junction of *Autobahn A44* – built in the mid-1960s – was already an important suburban connection point in the early decades of the 20th century, as it belonged to the traffic ring of the time. This *fact* allowed a consistent development of the Brand district, starting after the war and for about 50 years, consolidating and stratifying the defined organic form that we see today.

The mid-period of the 1930s was very important for the definition of that character, which still remains in this part of the city today. In fact, two of the three Aachen barracks⁴ were built in the district between 1937 and 1939 as part of the *remilitarization of the Rhineland*.

This part of the city already appeared strategic and easy to connect with the rest of the territory at that time, so much so that the third barracks of the city were built a few kilometers southwest of the district (Curdes, 1999).

This *port* and *logistical* character is a *fact* that has accompanied the entire district's development, starting from the construction, in a strategic key, of the military complexes up to the most recent construction – nearing completion – of an important grouping dedicated to the tertiary sector and which includes large-scale retail trade – mostly automotive – and a pharmaceutical district. This persistence in the area's spatial-architectural concept has also determined a planning aptitude, in search of the construction of a *metropolitan centrality*⁵ through the densification of the built in those spaces without an urban role and identity, to favor a polycentric dimension at the territory and city scale. The directional character as well as the

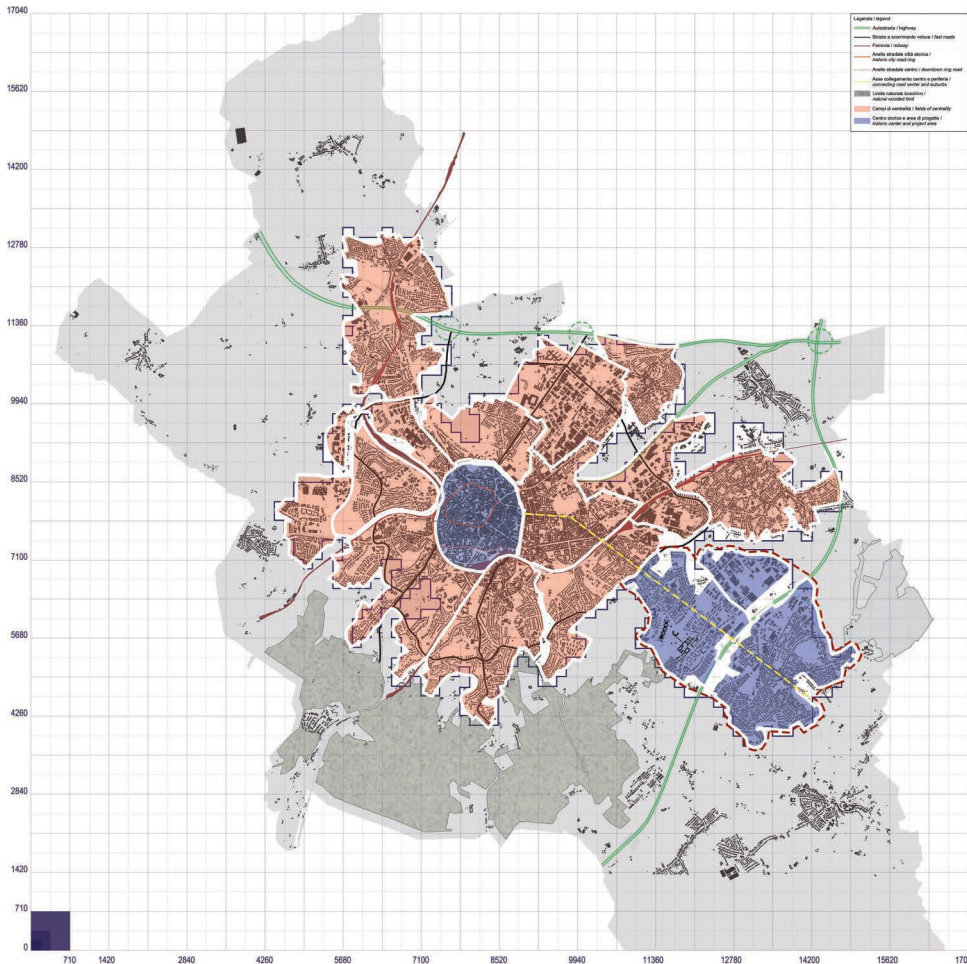


FIGURE 20.3 Distinction of the *centrality fields* of the city and furthering of the *centrality fields* of the historic center and the districts subject to intervention. Size 90x90 cm, scale 1:20,000.

settlement of the intervention depend above all on the presence of the highway exit and on the long-distance relationships in particular toward the polycentric Rhine system.

Within the TDCS technique, the characterization of the different parts of the city is furthered during the analysis of the *centrality fields*, further partitions with respect to the areas, able to determine *urban facts* identifiable and definable by morphological autonomy and in which to specify the system of *centrality factors*. During the workshop, the *centrality* of the historic center and the one that includes the project area were identified at a demonstration level. In particular, within the latter, research was carried out on *factors of centrality*, buildings and public spaces in operation or disuse, capable of determining an “[...] even more guaranteed centrality effect if the factors that contribute to determining it find synergistic relationships of proximity among themselves” (Strina 2015, 376; Figure 20.3).

These synergies are synthesized in systems called *clusters*, which in turn can be configured in higher organisms, *polyclusters*. These entities spontaneously exchange, according to

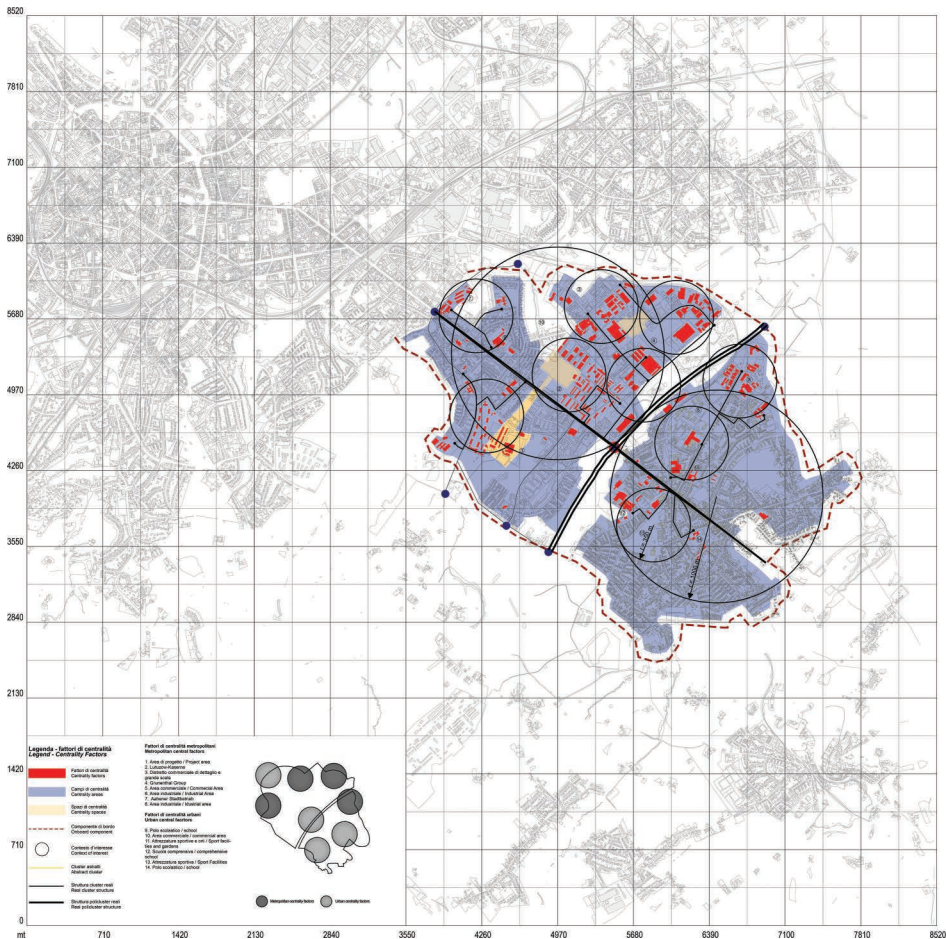


FIGURE 20.4 Analysis and study of *centrality factors* and *centrality space*. Size 90 x 90 cm, scale 1:10,000.

dynamic relational behaviors in which “their relationships cannot be explained by a simple dependence function” (Rossi 1966, 71).

The complex manifestation of the urban structure defined by the study on *centrality fields* and *centrality factors* leads to the identification of the *centrality space*, an area that will be transformed by the new urban *centrality* project and able to satisfy specific criteria such as accessibility, usability, and visibility (Figure 20.4).

The *founding characteristic* of this part of the city, described previously, has motivated the design strategy of *metropolitan centrality* as an architectural device with a strategic position in the reorganization of relations between cities and settlements scattered throughout the territory, also thanks to its representative function on the suburban scale.

To respond to this *original character* and represent *centrality*, the architectural paradigm of the Pfalzkapelle has been assumed as the result of a typological montage and as an identity of a specific place or city. The architectural examples chosen for the montage – a high school in Parma designed by Costantino Dardi in 1985, the Fiera-Catena area in Mantua designed by Aldo Rossi in 1982, and the competition project for Regione Friuli Venezia Giulia Headquarter designed by Guido Canella in 1974 composed with the Pfalzkapelle in Aachen – are studied, broken down into the archetypes of the central space and executive space able to connect the parts of the system; “These are two basic principles in the organization of physical space, which recur in a recurrent manner” (Marti Aris 1990, 54) and reused here to respond to the critical issues of the Driescher Hof area described above (Figure 20.5).

Even the compositional matrices of the historic center of the Roman and Carolingian periods are reused and adapted to structure the built components and the open spaces of the project.

The result is an urban composition where residential and executive functions are put in relation with the great availability of natural space, designed to be home to green parterres, including some pavilions, which are gradually inhabited by a greater number of man-made forests closer and closer to the preexisting woodlands to the district’s south. The central space is occupied by an octagonal volume with a central courtyard, also octagonal, intended for executive functions. Its northern facade is proclaimed by a long axis that connects with



FIGURE 20.5 Typological montage. Architecture examples and archetypes are used as a tool to obtain the identity of a specific place or city.

Triererstraße and then proceeds to connect with the commercial-productive settlement to the district's north. This linearity in the stretch between the octagonal building and Triererstraße includes a porticoed building that contains commercial functions and anticipates the civil character of the new settlement. This axial intervention is made possible by the removal of a part of the fabric transferred to the east part. Here, the new settlement is built by means of collective residence buildings and based on courtyard and semi-courtyard systems that seek to relate to the preexisting complex. This point is connected by means of a long runner that crosses the entire area. There are points along its path at which to stop or vertical connections with the public park below, or it is possible to reach the central office building and the space in front; further ahead toward the west the research center created in the disused premises of the Theodor-Körner-Kaserne and the courtyard can be reached, occupied by a volume illuminated from above through a system of shed skylights.

The open space at the bottom of the composition takes on a structural value to connect the various free elements (Figure 20.6).

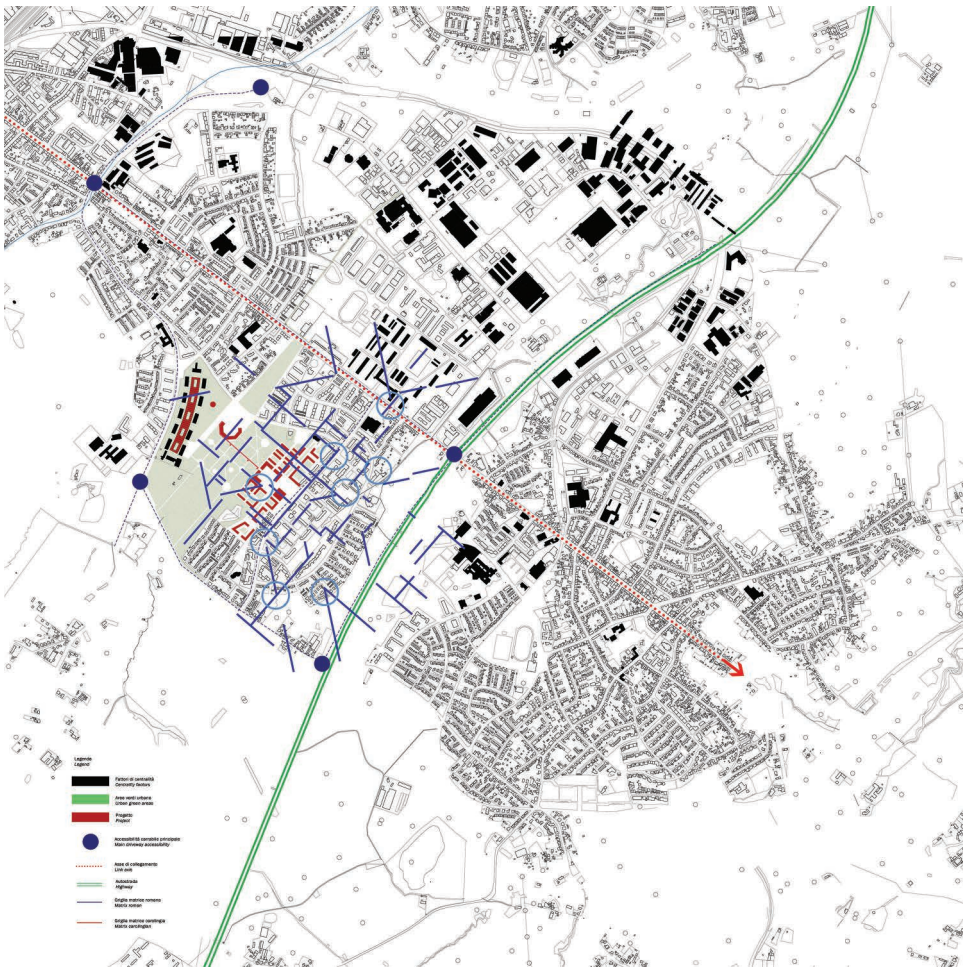


FIGURE 20.6 Meta-design indications. Size 90 x 90 cm, scale 1:5,000.

The final product is derived from an architecture that is the result of a composition of types – as the Pfalzkapelle – and which consequently obtains a tripartite system that applies an assembly of types of central and linear spaces. This architecture expresses the idea of *centrality* and is characterized “by being simultaneously unitary and multiple, identifying but heterogeneous, introverted and extroverted, transcalar and, in short, architectural and urban” (Quintelli 2014, 12).

Such a result applied a consolidated methodology and superimposed different levels of in-depth analyses, obtaining an architectural device that is a simultaneous expression of the *permanence of an urban fact* – obtained by applying the TDSC technique – and of a precise idea of architecture – the manifestation of a type – which accompanied the project “along the entire path of its creative process” (Argan 1965, 78; Figure 20.7).



FIGURE 20.7 Volumetric plan. Size 90 x 90 cm, scale 1:2,000.

Redesigning Driescher Hof area in Aachen – credits

TEACHERS: Carlo Quintelli (supervisor), Enrico Prandi, Carlo Gandolfi

ASSISTANT TEACHERS: Paolo Strina, Giuseppe Verterame, Riccardo Rapparini

STUDENTS: Andrea Bosio, Isabel Chiesa, Irene Di Santo, Ernesto Mario Frigerio, Martina Ollari, Filippo Piloni, Victor Solonaru, Giorgia Tomasello.

Notes

- 1 The workshop was held online from November 21 to November 30, 2020.
- 2 Funded by the Emilia-Romagna Region, the research was carried out as part of a shared project between the PhD students Annapaola Nolli, Nicola Montini, and Paolo Strina, XXVII cycle, University of Parma; project supervised by Carlo Quintelli.
- 3 For a concise explanation of TDSC, see the essay by Enrico Prandi in this book.
- 4 Theodor-Körner-Kaserne built in 1937, Löwenstein Kaserne built in 1938, Lützow Kaserne built in 1939.
- 5 For more information, see Strina P. 2015, *Tecnica di densificazione attraverso la strategia delle centralità urbane di tipo metropolitano* [Densification technique through the strategy of metropolitan urban centers], University of Parma: Doctoral thesis. The TDSC technique has already been used in the project of the former fruit and vegetable market of Bologna and presented in the chapter by Paolo Strina in this book.

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21

THE EUROPEAN MEDIUM-SIZED CITY

The Characteristics of the Urban Form

Marco Maretti

Introduction

All urban organisms can be considered according to the essential concept of anthropic settlements in the territory or, rather, originally, on natural soil that is transformed into civil soil through the intervention of man. The organization, reclamation, and “colonization” of the territorial area pertaining to a settlement generally follow the same criteria with which, through the relative subsistence routes, has made the morphology of the natural soil its own, contributing to identify its formative *ratio* and define its primary structure. A structure that forms the basis of any subsequent urban and social organization. But this structure is always an expression of a corresponding social structure with that assembly of shared polarizations and spatial hierarchies that identify a community. A community that therefore tends to “gather and identify” in collective spaces. Spaces that multiply, differentiate, hierarchize, as the society that proposes them expands and enriches itself, developing a civil complexity that is punctually reflected in the system of its polarizations, its routes, and its fabrics. From the origin of the first primitive stable settlements, three key concepts emerge that characterize all human settlement practices up to the 20th century: the concept of *polarity*, the concept of *route*, and the concept of *fabric*. We could say the entire urban morphological discipline is founded on the basis of these three elements and a latent logical structure, on which, for millennia, the city has been built and of which the European medium-sized city constitutes an exemplary case study, begins to be outlined.

Polarity

A city is a system in which all life (...) shows the tendency to polarize, to unfold in terms of the public or private social collective. The more strongly polarization is exercised, the tighter the exchange ratio between the public and private spheres and the more “urban,” from the sociology point of view, is the life of a collective.

(Bahrdr 1966)



FIGURE 21.1 Semantic image of a city: Norimberga (Schedel, H., 1493. *Liber Chronicarum*, xilografia).

It is no coincidence that the vast historical urban iconography presents the city as an object enclosed by the walls and internally exalted by towers and domes (Figure 21.1).

The view generally tended to synthesize the essence of the place and to fix its particularities in a “semantic image” in which each element constituted a key to access that complex social, economic, and cultural system of which the city was an expression. Said towers, walls, bell towers, and domes, are what emerges of the urban polarities; they are those identifying and recognizable elements of their presence and their role within the structural and social fabric of a city. Their task is that of coordinating urban fabrics, and their role is that of identifying the different urban communities, giving all citizens the sense of belonging to a single civil identity. Historically, they have the task of highlighting the presence of a city in the territory by implementing that “unifying distinction” between city and countryside that characterizes all historical urban iconography (Figure 21.2).

The polarities can thus be accentuating or delimiting an urban individual. In particular, the most civilly and socially representative buildings were generally located in the heart of the city or its neighborhoods (the cathedral church, the parishes, the Bishop’s or Lord’s Palace, the Municipal palace, the Market, the Stock Exchange, etc.), while the specialized buildings (the city walls, the lazarets, the monasteries, the barracks, etc.) both because of their greater overall dimension and because of their role, specialized within the civil fabric, tended to place themselves at the margins of the city, to occupy those urban *fringe belts*, so important as they are determining, at the same time, both the urban border and its points of exchange with the territory. Depending on its location within the fabric, therefore, each building and each public space finds its own identity and the measure of its urban role. A measure that changes over time, in relation to the dialectical change of its context.

The richer and more articulated the *civitas*, the clearer and more evident the symbols that “gather” and recognize it in the *urbs* must be. However, if in small-sized cities the relationship between the fabric and the collective themes is clearly perceptible thanks to the

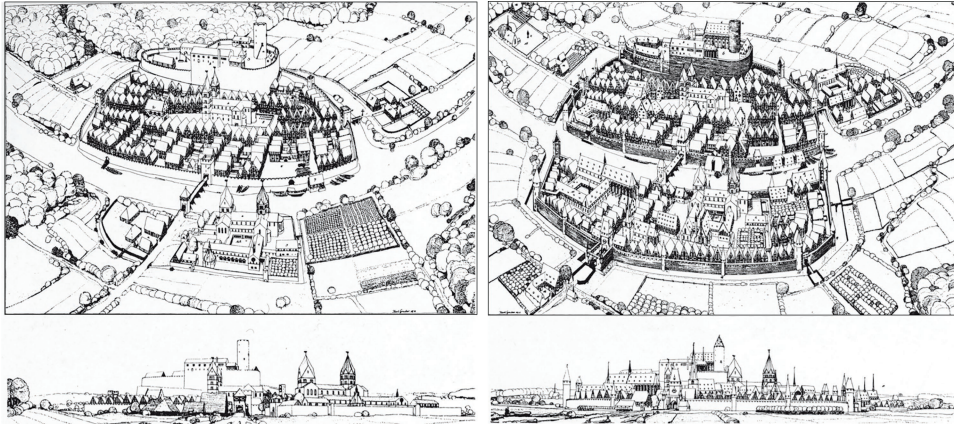


FIGURE 21.2 On the left. Conjectural diagram of a German city around the middle of the 13th century. The dialectic between internal (civil) and perimeter (specialist) polarizations in their role as “primary elements” of the urban transformation (and foundation) appears clearly: the Duomo with the market square and the Palazzo Pubblico in a central position, the castle, and the monastic welfare complexes to mark the limit, the passage between city and countryside (Gruber 1952).

On the right. Conjectural diagram of a German city around the middle of the 14th century. The city confirms its settlement ratio by proposing the same logic of transformation of the urban morphology: the large specialized complexes (monastic welfare) become new centers of urban aggregation (complete with a themed square) – local polarities of a premature polycentric system, and the bridge now plays an eminently nodal role, while equivalent specialized structures are located outside the new city walls (Gruber 1952).

substantial visibility of the latter within the urban fabric, confirming and consolidating the image of the *urbs* as a unitary fact, in the cities of greater dimension, the perception of this relationship is undoubtedly more difficult and more “mediated.” The unitary value of the city, as a whole, will then be entrusted to the evidence, in the fabric, of *local* themes (parish churches, libraries, “town halls,” museums, markets, etc.) that will have the task of revealing its belonging to the wider urban system.

Thus, there are two fundamental elements that emerge when studying the concept of *urban polarity*. The first is the dynamic relationship that is established between the polarities. It is a relationship on which the very “supporting structure” of an urban organism depends. It is in the examination between polarity that urban structures can survive and transform. The second element is the relationship that is established between the polarities and the urban fabric. It is a relationship of reciprocity: it is the fabric that indicates the various polarization potentials available within it, but it is the physical construction of the polarity that allows those potentialities to materialize and the fabric to be realized. Except, again, that the latter, the fabric, guarantees its survival by supporting its role over time. Let us see how urban phenomena can be read, then, according to a complex dialectic of differently collaborating systems, each with its own hierarchy of relations between center

and periphery, between polarity and anti-polarity. Dialectical (and hierarchical) systems of relatively self-sufficient urban areas and capable of forming an “urbanity” but always complementary to the wider urban organism. *Autonomy and complementarity* that underlie the formation, over time, of a flexible and dynamic organism, open to change but always consistent in its processes of modification. An organism that is the contemporary city, with its sudden transformations and its millenary logics. A city as “an object of nature and a subject of culture, individual and group, lived and dreamed, a human thing par excellence” (Levi-Strauss 1968).

Routes

The routes are the tool that, perhaps more than others, allows us to understand and read the processes of anthropization of a territory in their “structural” aspects, that is, in those aspects capable of synthesizing the experiences of a society, in a given place and in a given time, so as to grasp the elements of continuity and discontinuity with respect to the societies that preceded it and ultimately understand their settlement morphology. The more, in fact, a context is anthropized, the more the logics that guide the formation of the routes are precise and concise until they reach a recognizable and analytically evaluable form within the urban fabric (Figure 21.3).

In general, we can distinguish between designed systems and spontaneous systems. We will mainly deal with the latter. Having to analyze, in fact, the logics underlying the formation, over time, of urban fabrics and the “informal,” daily, private aspects that we must look at because these aspects are the main protagonists of the transformations of a city, they are a direct expression of an urban society and its vitality and understanding and knowing how to address them, where possible, can make the difference between the success or failure of an intervention of urban regeneration. Overall, it is possible to identify some “basic” typologies of routes that are found, for the most part, in all spontaneous building fabrics, from the medieval city to the contemporary *informal city*. They are routes that belong to the very logic of settling and therefore constitute a valid basic structure on which to read and consciously design urban transformations. Given then any two nodalities (urban or territorial), the route designed to connect them in the most direct way possible can be called the *Matrix route*. The building that will subsequently provide the margins will tend to define a continuous belt of relevance, substantially parallel to the course of the route, the depth of which will depend on the diachronic variations of the subdivision type (building type) which, from time to time, will conform the structure. This represents a *first level* of routes, with a strongly “connective” function, from one center to another, tending to maintain this role for a long time. This is why it is often more recognizable than the others. In order for an urban sociality to develop, however, there must be collective places where the *civitas* gathers and recognizes itself: “nodalities.” The construction therefore will be concentrated in the vicinity of these nodalities. Except that the linear construction along a route tends, at least at first, to have a limit in its longitudinal extension and when the distance from these nodalities becomes significantly higher than that in depth of the areas behind the belt of relevance, then the so-called *Building routes* will be formed, so called because they were immediately conceived as building structuring routes, that is, capable of forming a fabric. Normally they will develop orthogonally to the matrix route on which they maintain, with the respective belts of relevance placed starting from the limit of those on the main route.



FIGURE 21.3 Bristol (symbolic-figurative synthesis of 1479). The crossroad is another urban figure of great importance in the history of the city, which owes its physical and symbolic perception to the arrangement, in the relevant points of its routes, of polarities/landmarks whose urban (“polar”) meaning is thus entrusted to the design itself. This is so true that, as in the figure, the representation of the city is often diminished with that of its *crux viarum* as a “place of polarities.”



FIGURE 21.4 The dialectic matrix route of the building system is particularly evident in the interpretation of the Trident of Campo Marzio in Rome. Clockwise, we note how the construction of the fabric took place according to three morphological systems, each having a reference matrix route: Via di Ripetta, Via del Corso, Via del Babuino, and a series of plant route orthogonal to it. At the end, we find a system consisting of four matrix routes (Via dei Condotti is added to the three axes of the Trident), a network of plant routes and some connecting routes motivated by the shape of the Trident itself but, above all, by its building times.

The need for optimal use of the new building fabric will also lead to a preferably linear trend of these routes, in order to allow the orthogonal arrangement of the building lots. The average distance between one route and another, within the same fabric, will thus correspond to double the size of a belt of relevance and will codify, in a nutshell, the future size of an urban “block.” This is a second *level* of routes, capable of playing a fundamental role within the fabric as real connection axes, at the neighborhood scale, only to be hierarchical in proximity to the matrix routes. Again, however, the construction of a route does not continue indefinitely: beyond a certain distance, a new system of *connecting* routes will tend to form between the route of the building system (connections; Figure 21.4).

At this point, the definition of the urban “block” concept emerges. Before the 19th- and 20th-century block building and often also in these cases, in fact, the belts of relevance of each route were certainly more cohesive and related to each other than those of the block in progress: the road was always the privileged place of the local unity, and also the presence of those magnificent collective courtyards that made the history of the European city at the turn of the 20th century will never reach those same urban and civil values. Terms such as “suburb” and “district,” frequent in medieval toponymy, indicate precisely how the matrix of the formation of urban fabrics is the built route and not the block. What distinguishes the concept of “road” from the generic one of “route” lies precisely in the, albeit varied, construction of its margins that make the former an “urban route” in all its possible manifestations.

In addition to these types of route, there may be others of a more local nature, and there may be important variations within the same “type” of travel, but what we want to underline here is the presence of a hierarchical system of urban routes all the more important as they are directly related to the different forms of urban living. The city, however, is a dynamic

organism that, through the constant transformation of its urban structures, finds the ability to evolve and persist over time. The three basic types, now identified, can repeat, overlap, replace, transform over time. If this is more difficult and slower as regards the local and “fabric” routes, it is much more frequent and possible, on an urban scale, in the matrix routes. Indeed, we could say that, normally, any modification of the road layout of an urban environment arises precisely from a modification at the matrix routes level. The need to connect preexisting polarities with new ones can, in fact, lead to the tracing of urban *restructuring* routes. That is, routes that tend to overlap with preexisting fabrics, modifying their structures and hierarchies. In fact, these are new matrix routes with consequent new belts of relevance, normally characterized by more specialized typologies and higher settlement yields.¹

A dynamic and vital structure thus forms the foundation of the urban transformations of the spontaneous city. A concrete structure directly linked to the settlement and living needs of a community that finds its identity in the daily public space. For this reason, the most original and updated research in recent years in the field of urban morphology has been concentrated on the role of the public space, on its uses, and on its perception within urban fabrics. Whether it is the main square of the city or whether it is of simple building relevance, identifying a particular urban sector or assuming the character of a specialized space such as the numerous market squares or “lawns,” the public space continues to play a fundamental role in the design of the city. A role that, it should be remembered, is based on two primary needs: that of being “themed” (Romano 2004) and that of being clearly identified from a spatial point of view. The first requirement lies at the basis of the very function of a square as an urban place: too often we see the definition of simple voids, of banal interruptions in the building fabric, as “squares,” as if the spatial expansion alone were sufficient to attract functions and to characterize a space as a place for social gathering.

It is still the building fabric (its “nodal value”; Maretto 2020) that gives a “theme” to the square and eventually changes it over time, without however affecting its urban role (Figure 21.5).



FIGURE 21.5 On the left. Parma, themed square. The square is entirely defined and “specialized” by the religious complex of the cathedral and the baptistery.

On the right. Ascoli Piceno, themed square. Substantially indifferent to the great longitudinal urban axis that at this point is completely incorporated into the unitary perceptual image of the square, so much so that only the side of the church, used as a backdrop (therefore not thematizing), allows its presence, in the apparent incongruity of its orientation, to be perceived. The subsequent uniform design of the other sides of the square only confirms what has been observed.

The second, fundamental aspect is that which concerns the “margins,” that is, the construction of that limit which is the real definition of a square. Spatial dilation is not enough, and neither is its functional identification; it also has to be made comprehensible. Its characterization from urban “void” to urban “place,” and, consequently, its dimension, its social and civil “measure,” depends substantially on the quality of its perimeter. A dimension that is often reflected and enhanced by the presence of a building of public importance that substantially absorbs its role or by a special structure that summarizes and “puts into operation” its latent meanings.

“Fabrics”

A city is an organism made of “fabrics.” Social, economic, cultural, and environmental fabrics, on whose interaction the very functioning of an urban structure depends. The more these are interrelated and efficient, the more an organism will be able to be dynamic, versatile, and able to satisfy the needs and aspirations of its citizens. Fabrics of which it is useless and perhaps impossible to try to understand their forms but of which it is possible to understand their relational logics. The way in which these fabrics interact with each other, in fact, is an expression of the way citizens live the city; it is an expression of the way in which citizens transform the city through their daily actions (Habraken 2000).

There is a system of building structures in this context that have the essential task of mediating the transition between the individual sociological dimension of the citizen (or family) and the public one of the city. The richer and more articulated this is, the more these structures play an important role in the functioning of an urban organism. They are the “social-building neighborhoods” – those structures that are, together, physical and social to which an important part of the construction of the city has been entrusted for centuries. In fact, if, as a settlement principle, the neighborhood is a “potential reality,” over time the social group evolves and becomes complicated and then it will be the *building environment* of residence (that street, that court, that square) to allow and favor the development of the local community, determining, to a large extent, the same internal, relational connotations. And this is very interesting because, on this point, the traditional dialectical relationship between subject and object is completely overturned as it is the individuality of the building that “qualifies” the men who live there, identifying them in turn as a *community*.

The neighborhood, in fact, while being the indispensable means of ascending between the family and the urban community, is a generally noninstitutionalized reality and finds its essential recognition only in the building scale. For this reason, it is usually largely determined by the general political climate: in situations of highly centralized power, it is possible to tend to summarize all social life in correspondence with the representative centers, that is, in public spaces hierarchized on an urban scale; the exact opposite can occur in situations of strong decentralization.

In principle, the precursors of the “neighborhoods” are all the ancient streets, places of mutual relations of sight, speech, and exchange in general, so much so that they often gather specific work activities; see the countless streets “of Blacksmiths,” “of Bakers,” “of Grocers,” “of Wool” that medieval toponymy has handed down to us throughout Europe, up to the well-known examples of aristocratic neighborhood such as the “Strada Nuova” of Genoa or the series of “architectural squares” such as the Place des Vosges in Paris and the subsequent French “Places Royale,” the various Spanish “Plaza Mayor,” and so on.



FIGURE 21.6 On the left. Venice. Marinarezza complex. On the right. Lubecca. Planned social-construction neighborhood.

However, the identification of the neighborhood unit has been, for centuries, the fundamental tool of the urban-building design of the city. The richest historical example is perhaps the Venetian one, where the system of parish islands of the 10th and 11th centuries made the neighborhood systems the basic structure of the entire urban morphology, not to mention all those famous and beautiful social housing units, made from the 14th to the 18th centuries, and generally centered on deliberate neighborhood spaces: the courts.

Other significant examples are the medieval beguinages and the subsequent Dutch *hoffs* (literally meaning “inner courts”; such as the well-known *beguinhoff* of Amsterdam), up to the very famous *Fuggerei* of Augusta (Ausburg), the English *squares* and *mews*, and many others, with their common spaces fittingly achieved by the walls of houses (often serial and therefore unitary in their “collective” image) and polarized in the center by a collective service: the garden, the common well in Venice, the chapel (co-housing?), and so on (Figure 21.6).

In fact, the collective dimension of space which is the fundamental sphere of mediation between the urban public space par excellence and private appurtenant spaces is due to the social-building neighborhood. A semipublic space of great importance for identity, functionality, and urban sustainability. In fact, above all in the polycentric city, the transition from the individual (single or family) to the *civitas* is anything but taken for granted and often requires an intermediate level of belonging in which to recognize that it is made up of the neighborhood. It is, we could say, a “daily” level of belonging to which the size of the neighborhood is not always able to respond, which assigns to the neighborhood collective space for all those activities and functions that cannot be easily carried out at home or in the street. A space in which to carry out all those *co-housing* actions, once partly implicit in extended family systems, is now indispensable in the contemporary metropolis: nursery, workspace, laundry, sport facilities, and so on.

Finally, the social-building neighborhoods also constitute the *urban sustainable units* of the contemporary city. Their joint, collective, and unitary character allows, in fact, to implement a first strategic level of sustainability which, reduced to the scale of the single building, would, in fact, be ineffective. The collection of rainwater and grey water, a centralized heating system and the production of clean energy, and a capillary separate collection of



FIGURE 21.7 London, Covent Garden, 1673 (Inigo Jones). The case of Covent Garden in London is emblematic of the urban role represented by these building structures. Originally a square, the space was initially themed by the presence of the Landlord’s house (Bedford House). Its evolution into a real urban space will subsequently take place through a renewed unitary design of its margins (following the example of the Italian and French “architectural squares”) and the construction of the church of Saint Paul (new spatial “theme”). However, its great definition as an important urban square will be completed only with the construction of the great Covent Garden Market which will thematize this great urban organism once again (definitively).

waste, per “neighborhood,” are just some of the aspects that a neighborhood building unit can respond to.

The value of the social-building neighborhood lies, therefore, precisely in its positioning as an intermediate (social and urban) dimension between citizens and civitas; between the public and private spheres, common rights, and individual rights; between the maximum of urban openness and permeability and the maximum of appurtenant closure, playing a role capable of gathering some of the elements of plurality that characterize urban fabrics, together with those needs for unity that distinguish private living: a sort of unity in the plurality that we believe can play an interesting role in the sustainable city project of the 21st century. On closer inspection, all the elements that characterize a social-building neighborhood (streets, squares, courtyards, building types, vegetation, special buildings, etc.), albeit on a small scale, are the same that define any urban fabric. This confirms them being one of the most important and resilient structures in the history of the city, representing a sort of morphological and social “urban tool kit” for the contemporary urban project. The European medium-sized city is a shining example for the study of the urban form. The formative logic of its fabrics, the organization of its building structures, and the sequential order of its public spaces constitute a precious logical framework of reference, on multiple levels of evaluation and on multiple dimensional scales, for understanding the city in sight of its transformation (Figure 21.7).

Note

- 1 This is the case of all the great “demolitions” that have characterized the history of the city, from the Middle Ages to the second half of the 20th century.

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22

THE IDEA OF SPACE AND URBAN SEQUENCES

The Case of Parma

Carlo Gandolfi

In order to set up and begin an essay on the city or – in the present case – on the public space and its declinations, relationships, and instances, it seems legitimate to use the words written by Ludovico Quaroni in 1954 in the magazine “Comunità” on *what is* the city, its *essence*, its *character*. Starting from this short opening allows to set the reasoning on the European city and what we could mean, precisely, by public space. Not only that; I would like them to serve as a “zero degree” of this reasoning, which should bring us back to the human essence of urban space, even before its being a place of speculation and the absence of quality and specificity:

The city is composed of everything, the city is everything: it is a total continuous architecture, which is not only that of churches and palaces; there is a space in the city; there is an order, a scale, a proportion, a dimension, a rhythm for each city; together with the trees there is a light, a color, an air, a smell that characterize it, all sensations that surround us, together with the soul of men and things.¹

(Quaroni 2019, 13)

Starting from this, it is legitimate to ask why the medium-sized European city – a definition, it must be said, which is extremely extensive and not necessarily completely accurate in relation to further, complex parameters – can be considered a qualitatively appreciable type of city. In this sense, the necessary question for an architect turns to which characteristics, be they physical, perceptive, or experiential (Lynch 1962 and 1981; Barthes 1957), unite these cities.

What constants, if any, characterize the qualitative indicators of the urban space without the most recent suburban condition?

A first answer could be found in the character of the historical fabric and in its specificity, the result of characterizing languages and architectural registers, settlements where rites – *facts*² – have found the space of their existence, of reiteration, of fixation over time precisely because it is in the city that the human experience becomes a tangible sign and

memory (Halbwachs 1950, 130–137). According to Kahn (2002, 136) – also mentioned in Perulli (2009, 11–112):

The foundation of architecture coincides with the making of spaces at the service of human institutions. In the aura of silence and light, the aspiration to be, to do and to express, recognizes the laws that open up the possible [...]. Tension is released from desire, from waiting for what has not yet been created.

historically, it is in the city that the rules of community life begin to exist and the institutions and cultural heritage of civilizations grows. Precisely for this reason, these cities give us and from them we inherit what, in summary, we could define a sort of *geometric trust*, a *character*, and a *frequency* (Lefebvre, H. 1996) already accorded to a place over time, regardless of any possible obedience to the contemporary. These are the essential components of the so-called *urban landscape* (Passarge, 1930; Cullen 1961; Tricart 1963) (Figure 22.1).

Starting from the conviction that one of the main factors determining the quality of living in the medium-sized European city lies in the relationship between private and public spaces, or in the structuring of open spaces and, in this case, in the sequences of spaces³ in relation to collective buildings and monuments connected thereto, this essay intends to examine the theme with respect to a specific urban case. The idea of extrapolating urban sequences as a significant datum with respect to the study of the city in its entirety finds support, among others, in Chabot (1948), Lavedan (1936), Lynch (1960), and Cerasi (1973).

The city of Parma is an exemplary reference as it can enclose a series of factors in the relationship between urban dimension and territorial scale which, as we will see, sanction starting from its development in Roman times, a place with a particular characterization of open spaces and their sequences in relation to architectural facts, readable as perceptive cornerstones, so to speak, diluted within the compact fabric of the city.

An approach to the concept of space is necessary in order to concentrate the reasoning on this precise investigative condition. In *Design of cities*, Bacon (1967) begins by stating that there are two mutually integrated entities underlying the architectural project: matter and space.

Returning to the idea of urban space, it is now necessary to try to define what we mean by open spaces and how they are defined from time to time by assimilating a physical denotation – *open space*, in fact – to a conceptual one, or *public space*.

Starting from the idea of voids, we could say, in the first instance, that public space is *everyone's space*.⁴ This nature of absolute collectivity does not mean, however, that public space is intended for everyone to the extent that every particular will can be pursued there; rather, it is true that the responsibility for the preservation of public space and its enrichment lies with the community (Hertzberger, 2009, 12). Public space is inseparable from monumental sequences and is defined by urban architecture. Belonging *to everyone* therefore means that it is the space where the community recognizes itself, knowing that it is possible to meet, express, discuss *there*. It is a space for *use, transit, rest, travel, or pause*; it is the space where the temporality of the private individual participates in the collective, assimilated within it: only in the public space can this sort of social alchemy occur. The construction of this definition is only apparently simple, but this level of complexity appears sufficient for our reasoning

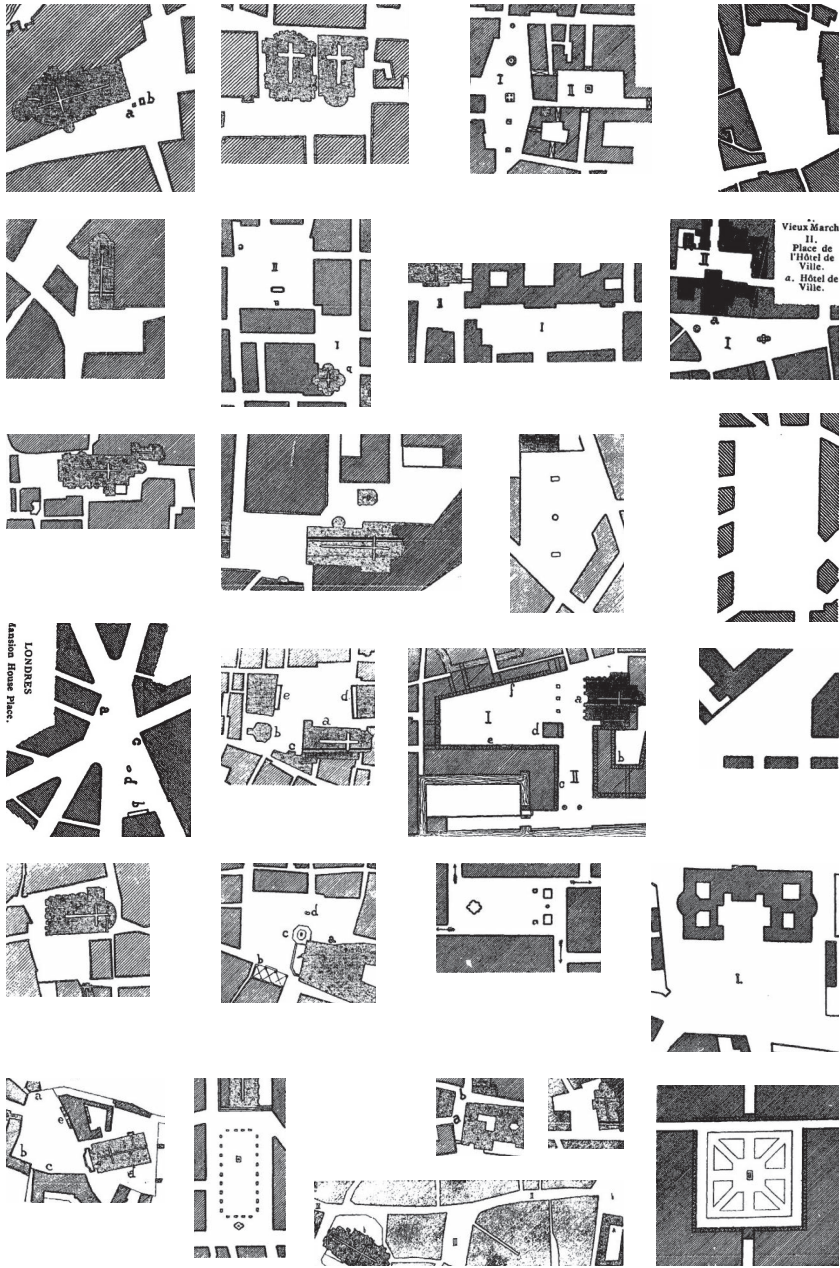


FIGURE 22.1 Comparison between some of the schemes developed by Camillo Sitte that show the relationships between spatial invasions in the urban fabric, the monuments, and the urban texture within which they are innervated.

while underlining, in abstract terms, that the space must in any case have a dialogue with an external reality since, as geographical, historical, experiential *matter* (and therefore artificial in itself), it sees matter acting thereon as the *causa efficiens* of its very structure.⁵

In this sense, it is important to re-understand the elements that structure – or arm, so to speak – the very meaning of open space in the city. To better understand the sequences and gradient of meaning that populates them in their alternation, contrast, overlapping, these elements must be assumed as indispensable parts of a compositional whole, of a compact and stratified historical fabric within which, in time, facts that could be defined as surgical or incisions, emptying, capable of allowing, precisely that linearly growing fabric, scalar rejections and revolutions within the relationships between parts and in the sequences of the spaces themselves.⁶ It is the movement – over time – within the planimetric space that allows the user to walk through the succession of the scenic sequences of the city in the theatrical dimension of the city itself. Being a space–time experience, movement carries a unit of measurement therewith which is the use of the city through walking. This pace allows for understanding the sequential story.

Starting from the 15th century, the square (Garzoni 1996) – constituted by the availability of that empty space within the urban fabric highly populated with meaning – assumed the role it still plays today, in the virtual and remote era: “a space in which the city expresses the necessary and irrepressible diversities” (Amendola 2010), a meeting place, a place where the community recognizes itself and, metonymy of the people, wrapped in the architecture that encloses it and delimits it through its system of façades (Pierini 2008), providing this space with the backdrop of memory, a vertical space–surface in turn, *limen* between what is *inside* and what is *outside*.

But the most common type of void in the urban texture is the street. If the square can present invariant elements or dimensional, formal, and figural similarities, the street presents heterogeneous characters in most cases precisely due to its directional, connective nature and, in fact, not immediately definable in terms of length (just think, in the case of Parma, of the carrier Via Emilia). The road leads and distributes, innervates the urban texture in the territory, and in following it, the sequences in which large spaces, gardens, interruptions, accidents, and movements appear.

In the contemporary city, there are also other elements, not properly named or definable, not contained within a specific lexicon, also referred to by Giuseppe Samonà as *place-spaces*.⁷ He himself hopes that

[...] the profound images that are formed there must indicate with their semantic iconism all the physical and mental aspects of the localized space of a system defined with direct perception in the streets, squares, gardens, and more forming the visible reality by walking inside it to establish its differential characters; all in the context of a controllable perception, given by the semantic inconsistency of the various images of each place–space, in which the quality of the existing structures, those of the population living there and the aims of the rationalization and enhancement of housing and services to be included.

To better understand the scope and design potential of these *place-spaces*, it may be useful to resort to the historic city and, in the case of Parma, to try to identify some notable spatial sequences in the relationships between urban fabric, architectural fact, road, square and garden or voids with other possible connotations.⁸

Even before the birth of perspective, painters sought to immortalize the urban scene, depicting life and events as if to fix their memory. To better understand what we mean by spatial or urban sequence, we refer to a passage from Sergei Eisenstein's *Montage Theory* in

which the Russian director equates the space of the Acropolis with the oldest of films with respect to the duration of the impression that comes from the shots chosen by Auguste Choisy, in his *History of Architecture* (Choisy 411–419), of which Eisenstein reports extensive integral excerpts (Landsberger 2015).

From this series of planimetric and perspective schemes, it is in fact possible to understand how the reciprocal arrangement of the individual temples in the space composes an urban scene that is highly refined in compositional and proportional terms. The sequences of urban spaces have specific characteristics both from a dimensional and linguistic point of view; it is as if each city were staging its own action in space. Consider, for example, the case of Florence, where the alternation of spatially encroaching architectural elements generates an authentic *architectural promenade* capable of generating that sense of collectivity and belonging to the place, characterizing the quality of the open spaces in relation to the buildings overlooking them. After passing Ponte Vecchio, you walk along a segment of Lungarno along the river and then reach the large urban interior of the Uffizi up to Piazza della Signoria to then enter Piazza Duomo from the side, with the Baptistery on the left and the Cathedral of Santa Maria del Fiore on the right. The experience of this last great “excavation” in the urban fabric leads to Via dei Servi, along which you reach the Church of the Santissima Annunziata and then Ospedale degli Innocenti. Here is the expansion of open spaces in relation to the architectural buildings which, heterogeneous in form and function, sum episodes and generate a sequence full of meaning, densely populated with religious, administrative, representative, and welfare functions.

As for Parma, its history as the capital of the Duchy (1545–1860), and which today is entrusted not only to the arbitrary and to languages less deposited in the times of construction, but rather to the profit of the construction industry, but sees in the absence of monumental facts, urban landmarks, a fact about which we must necessarily confront within order to comprehend the articulated relationship between monument, *forma urbis*, and territory. Starting from the Roman *cardo-decumano* structure that maintains its role as an organizational factor through Via Emilia, the *intra mœnia* area is divided by the presence of Parma’s torrential watercourse that defines the roles of the two parts of the city: the one based on the ancient Forum, of a representative and administrative nature, and that of the Oltretorrente, used as a residential fabric and with large service structures such as the 13th-century Ospedale della Misericordia (Figure 22.2).

Observing the historic city, still legible in its form and its overlapping, it is possible to identify, in particular, three urban sequences that can also be interpreted as succeeding and interacting with each other. The attempt will be to interpret the architectural elements in their juxtaposition and complementarity (Figure 22.3).

The first sequence is designed to allow reaching the center starting from the large green area of Parco Ducale, and which today is entrusted not only to the arbitrary and to languages less deposited in the times of construction, but rather to the profit of the construction industry, but sees in the absence of monumental facts, urban landmarks a fact about which the project must necessarily confront, leaving the Palazzo behind, crossing Verdi Bridge over Parma, up to facing the tripartite cavity of the blind side of the colossal Palazzo della Pilotta. Begun by the Farnese family in 1539, it constitutes the ideal threshold of an open interior still to be reached, after which you are covered by the mighty mass overlooking the shadowy cavity that gives access to Teatro Farnese, the National Gallery, and the Palatine Library. It is a unique pass-through atrium, a sort of urban diaphragm that is part of the

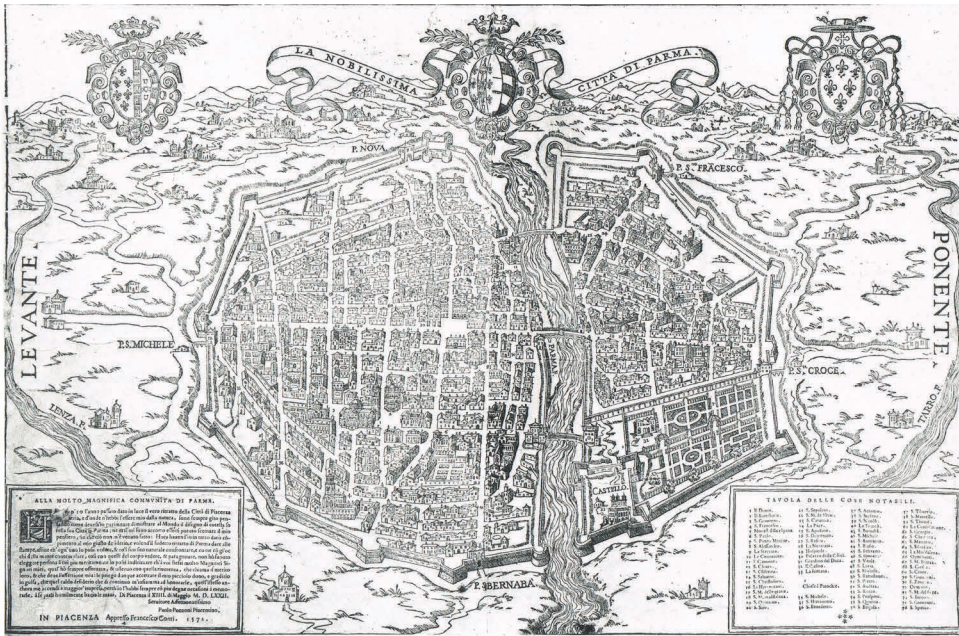


FIGURE 22.2 Above, Paolo Ponzoni, bird's eye view of Pamra, 1572. Below, Piano della Reale Ducale Città di Parma, second half of the 18th century, monumental complex of the Pilotta-National Archaeological Museum of Parma (image courtesy of the Minisetero for Cultural Heritage and Activities).

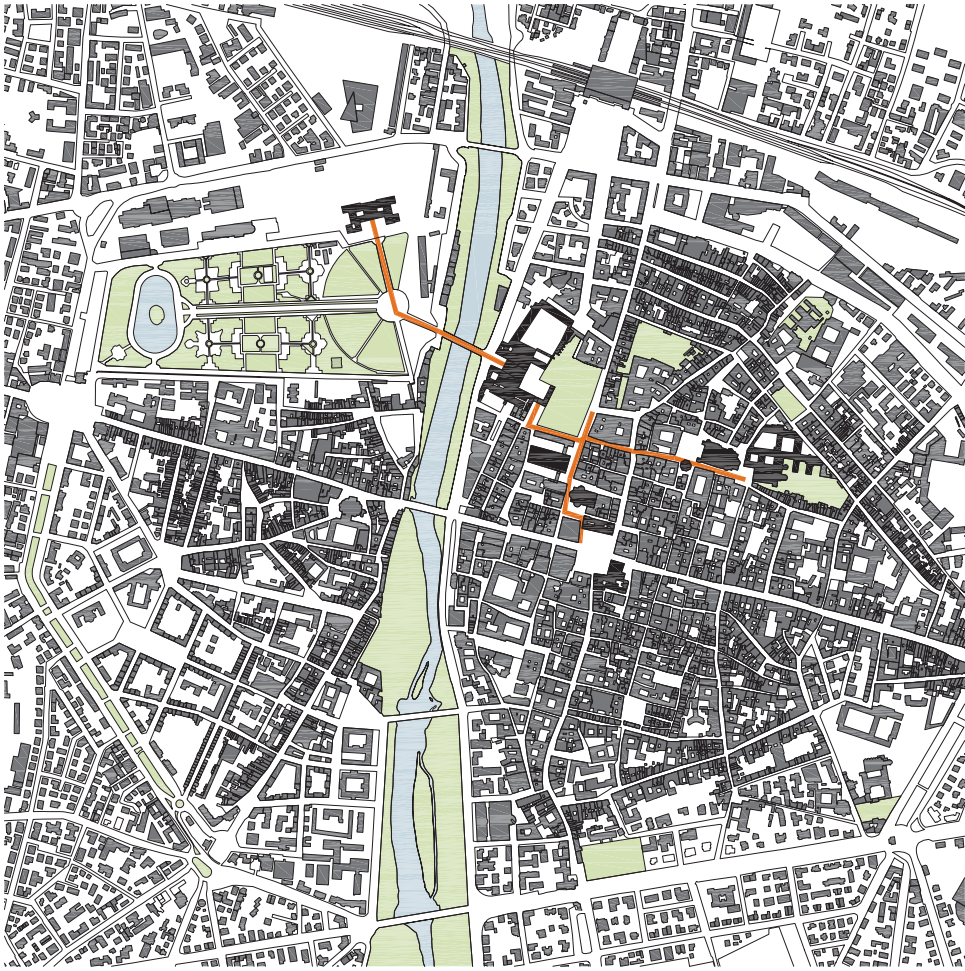


FIGURE 22.3 Drawing of the nucleus of the historical city of Parma. Original scale of the drawing: 1/100. The buildings highlighted in the chapter are highlighted in black and the sequences in orange.

Palazzo's device. Once you have passed this hypostyle space you reach the equally mighty open courtyard that claims the absence of the church and opens onto Piazzale della Pace. It is a sort of passage of state: from the large green area, the visual connection with the natural element of the river basin, a sort of decompression chamber, anticipation of another urban interior, that of the courtyard which in turn overlooks a large void that seems to be an anticipation of the Teatro Regio first and the Baptistery–Cathedral–Church sequence of San Giovanni Evangelista (Figure 22.4).

Starting from this large empty space, Piazza della Pace, it is possible to head toward the founding center of the city, the place of the Forum, where the *cardo* crosses Via Emilia along the 19th-century Bettoli façade of Teatro Regio erected at the behest of Maria Louise of Austria. A few steps and another presence bursts into the fabric that becomes gradually more compact: the Basilica di Santa Maria della Steccata built starting from 1521 with a Greek Bramante plan, after which you enter the space of the ancient Forum through a sort

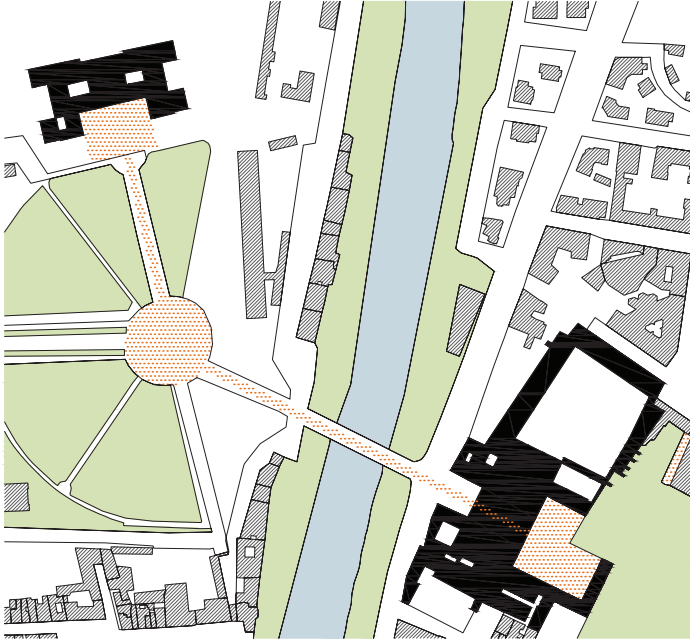


FIGURE 22.4 First sequence: from Palazzo and Parco Ducale until Piazza della Pace. Original scale of the diagram: 1/333.

of isthmus that runs alongside the Governor's Palace and fixes a diagonal that points to the Town Hall overlooking the Portico del Grano. This is the physical and conceptual center of the city, a large regular void crossed by Via Emilia with the University active since the 11th century located just a few meters away (Figure 22.5).

From the great void of Piazza della Pace, there is a third, extraordinary sequence, this time grafted onto a longitudinal axis that sees – starting from the broken court of the complex of the Pilotta. This third sequence highlights, as the drawings show, in particular how urban space finds dilations and restrictions linked to the presence of major urban events of monumental magnitude. It emerges, in this case, a legitimate question about the architectural quality that the historical city preserves, as shown in the images of the inlaid views, and which today is entrusted not only to the arbitrary and to languages no more deposited in the times of construction, but rather to the profit of the construction industry, but sees in the absence of monumental facts, urban landmarks a fact about which the project must necessarily confront, passing under the southern portico and skirting the facade overlooking the side of the Piazza della Pace – the succession of the Baptistery, the façade of the Duomo, and the Palazzo of the major episcopal seminary, until discovering, precisely in progressive sequence, the façade of the church of San Giovanni Evangelista, in a perspective thread that relates the elements to each other, making them become one another's staircase (Figures 22.6 and 22.7).

Some quick historical and chronological notions give the idea of the complexity the city generates in history, within an area that can be covered in a few minutes on foot. These urban sequences are able to restore the complexity of the forms of the urban project

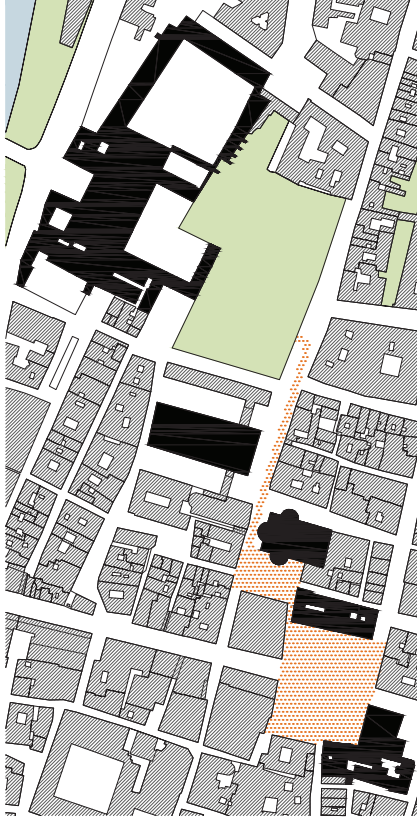


FIGURE 22.5 Second sequence: from Piazza della Pace to the ancient forum. Original scale of the diagram: 1/333.

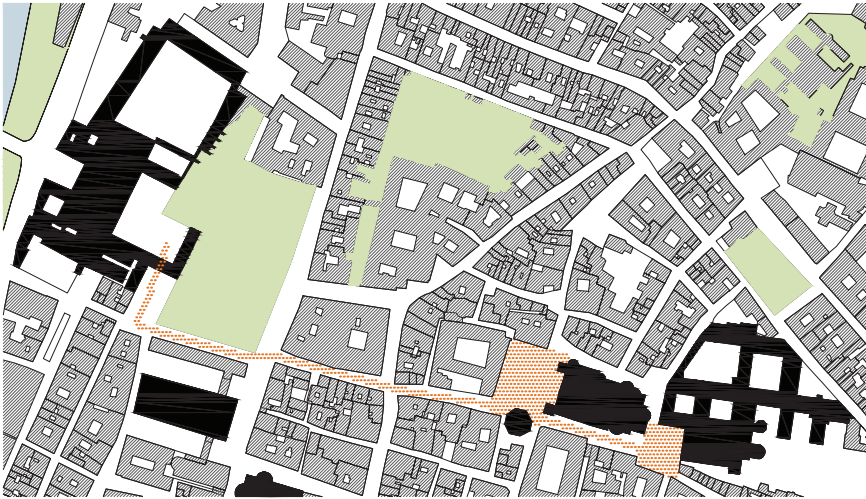


FIGURE 22.6 Third sequence: from Pilotta to San Giovanni Evangelista. Original scale of the diagram: 1/333.



FIGURE 22.7 Inlays of the stalls of the choir of the Church of San Giovanni Evangelista carved and inlaid by Marcantonio Zucchi and Pasquale Testa. They are illustrated probable past of the city of the 15th century and bear horizons, streets, paved squares, arcades, canals, towers, doors, and human figures. Like ancient shots, they represent frames of ideal film sequences.

starting from its founding instances. The space *between* the architectures is characterized by fissile backdrops that hide courtyards and other more intimate interior spaces. These urban sequences innervate the urban fabric that we could define as secondary, made up of lesser structures, roads, and what we could call, starting from Alberti's definition according to which the house is a big city and the city a small house, a large distribution system on an urban scale that connects episodes while keeping the identity of the built structure compact.

Identifying these sequences allows us to measure spatial encroachments and architectures, understanding the importance and value of that *truly* public space. It is a question of welcoming the possibility of making the very space that becomes the place manifest and of which, today, the city seems to want to give up in favor of logics far from the slow passing of human life.

Notes

- 1 Quaroni's text was originally published in issue 25 of the magazine "Comunità" in 1954, the magazine founded by the "Movimento Comunità" in 1946 and then directed by Adriano Olivetti and later by Giorgio Soavi and Renzo Zorzi.
- 2 As regards the term *facts*, see Rossi, A. 1966, especially the extraordinary definition of architecture on pages 4–5: "Architecture is the fixed scene of human affairs, loaded with the feelings of generations, public events, private tragedies, new and ancient *facts*." See – among others – as regards studies relating to urban systems: Sitte (1889), Sitte (1952), Aymonino (1975), and Mumford (1977).
- 3 The idea of extrapolating urban sequences as a significant datum with respect to the study of the city in its entirety finds support, among others in: Lynch, K. 1960. *The image of the city*. Cambridge: Technology Press & Harvard University Press; Cerasi, M. 1973. *La lettura dell'ambiente*, Milano: CLUP; Lavedan, P. 1936. *Géographie des villes*. Paris: Gallimard; Chabot, C. 1948, *Les villes*. Paris: Collins.
- 4 On the theme of public space, see, among others, Brandão, Carrelo, and Águas (2002). On the degrees of interaction between man and space, see, among others, De Sessa (1990), Vieira de Almeida (1963, 2008), Sommer (1969), Portas (2005), and Massey (2005). On the relationship between space and place, see Leveratto (2018).
- 5 See, among others, Rizzi (1999).
- 6 In its heritage, in conceptual terms, from the Roman forum and the Greek agora, it etymologically refers to the reference to the Latin *platea* "central area of the theater, broad street".
- 7 Gianugo Polesello specifies:

[...] places that do not possess the architectural finiteness, the geometric and stylistic absoluteness of the artifact, but which appear as more complex structures, also difficult to describe with graphic language (the perspective) or with written language. They are places that can appear in the form of intersections without being punctual.

(Polesello 1989, 183–186)

See also Polesello 1985.

- 8 For a reading of urban space in this sense, see Kostof (2009).

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PART V

Mapping Social Space

Demographic Analysis as an Image
of Urban Complexity



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23

MAPPING URBAN SPACES WITH THE USE OF PHYSICAL, DIGITAL, AND AUGMENTED REALITY MODELS

Experiences from Applications in Architectural and Urban Education

Tomasz Bradecki

Introduction

At the meeting point of architecture, urban planning, geography, and cartography, a specialization can be identified that focuses on mapping spatial information and related data. According to the *Cambridge Dictionary* definition, mapping is the activity or process of making a map, or an image or diagram, that represents something (*Cambridge Dictionary*). “Mapping urbanism data” is becoming more and more popular due to the increasing possibilities of acquiring, collecting, and processing more and more data. The availability of services (e.g., Google Earth, OpenStreetMap) and local spatial information systems (national, regional, municipal, cadastral) is also increasing. However, data are usually structured with different criteria, which makes comparative analysis of multiple cities challenging (Valls et al., 2014). The possibilities of data processing and presentation are becoming more and more accessible owing to many tools available on the Internet (e.g., cadmapper.com, mapacad.com, schwarzplan.eu, osm2world.org, puma.worldbank.org/tool/). GIS is no longer trapped on the desktop and can be shared via the Internet and standard web browsers allowing consumers to utilize this visual information source without having to purchase and download any specialized software (ESRI, 2014). There are many impressive examples of data mapping, for example, www.viewsoftheworld.net, www.vividmaps.com. One example of processed data illustrates the spatial development of 66 global cities around the world and the change in population density in the years 1988–2014. Owing to the comparison of mapped data, it is easy to conclude that the vast majority of cities recorded a decrease in population density with a simultaneous significant increase in the surface of urbanized areas. The maps show the scale of the changes very clearly; it is easy to see analogies in the development of different cities. Mapping is also used to study future scenarios. Based on data analysis, Gao and O’Neill produced an empirically grounded set of global, spatial mappings of possible directions of urbanization expansion in urban areas in the 21st century (Gao, J., O’Neill, B.C., 2020).

Various data are mapped, for example, demographic data (e.g., crime rates, population density, level of crime), data related to the built environment (e.g., intensity of building

development, building height, urban areas), as well as economic data (e.g., real estate prices, income level). Mapping uses a “cellular automata model,” which can be a script that spatially matches data to cells of a certain size. This type of script can be used for mapping in the scale of cities (e.g., Sandeep Maithani 2010) or entire countries (Yanlei Feng, Yi Qi 2018). Some of the research results, in which data are mapped, are presented in the form of 3D models, due to the clarity of the message, and the ease of drawing conclusions.

Mapping is frequently used to create land-use structure maps. In this regard, the shared data, plans, and orthophotos enable fully programmed mapping. However, there are some limitations, such as confusing land plots of mixed functional types, complex and heterogeneous urban landscapes that pose a challenge for land-use maps (Tengyun Hu, Jun Yang, Xuecao L, Peng Gong 2016). Also challenging are atypical mappings presenting data in the form of 3D models, or presenting changes in the values of the analyzed data over time, for example, to present changes in Manhattan’s intensity of building development as presented by McQuilkin (2014).

Mapping for Education in the Project-Based Learning Formula

Mapping data in the form of spatial models can be useful in education in the field of architecture and urban planning for the purpose of demonstrating some of the characteristics of urbanized spaces. Mapping can be used for comparative analysis of public spaces, to express the theory, to designate places or areas, or to illustrate the values of urban indicators, for example, intensity of building development. All of the mentioned ones can be effective in the form of 3D mappings due to their connection with the physical structure of the city. The visual representation of data and city elements allow the exploration of complex datasets and can improve the collaboration of the teams involved through better communication (Zlatanova, Itard, Kibria, & Van Dorst, 2010). The use of touch-screens, smartphones, and medium-sized tablets equipped with high-speed wireless connections, GPS, and long-lasting batteries have allowed to develop new pedagogical strategies, despite the size limitations of the screens (Fonseca et al. 2017).

The Project-Based Learning (PBL) formula is often used in the education process. The popular notion of PBL advocates for students working in teams, undertaking complex design challenges, in an environment similar to real professional life (Stangel M. Twardoch T. 2016). Urban design education allows students to understand urban issues in cities and urban environments as an integral part of people’s lives and to create designs and solutions on an urban scale (Mahgoub Y. 2015). Alcock and Blyt emphasize that the method creates a kind of PBL environment in which experiences from different cases are rarely repeatable; they also mention the advantages of differentiating approaches in different cases (G.L. Alcock, H. Blyt 2010). Another example of data use is Francesc Valls, who proposed with his team an approach to data mining from social networking sites that was used to outline strategic requirements for an urban design in the PBL architecture course (Valls F. et al. 2020). They proved that it is possible to present a visualization of the results, in a way designed to be attractive and informative for both students and professionals – even without a technical background – so the analysis conducted may be reproducible in other urban data contexts (Valls F. et al. 2020).

In the case of the city structure analysis, the PBL method most often means a multispect analysis and diagnosis of city problems. The author has conducted a series of research in this

area in the PBL formula. As part of the experiments, during the project exercises, analyses of the cities of the Upper Silesian Metropolitan Group (2018), the city of Bologna (2019), and the city of Aachen (2020) were carried out. The research was carried out at the Faculty of Architecture of the Silesian University of Technology in several third-year project groups majoring in architecture and urban planning. Due to the complexity of the problem, all experiments were carried out in multiperson groups to obtain effects in the form of digital and physical models. The implementation of models presenting the values of selected urban indicators or other data, as well as public spaces, constitutes an unusual and unique attempt at this stage of education and seems to be effective. The conclusions from the research during the implementation of subsequent cases are described below.

GZM Mapping Case – Physical Models Based on the Developed Data

One of the reasons why work on the project was started was the establishment of Metropolis GZM (Górnośląsko-Zagłębiowska Metropolia). The metropolis was established on March 9, 2017, and it was a completely new legal form integrating such a large (2,500 km²) and diverse area (population 2.3 million; Metropolis GZM). The metropolis is made up of 41 cities and communes in the area of Upper Silesia and Dąbrowa Basin, and it is the area with the highest population density in Poland and Europe (881 people/km²). The main aim of the activities and the starting point for the analyses was a detailed study of the structure of communes making up the entire metropolis and illustrating the connections, similarities, and differences between them.

The result of the project was a model representation of the structure of the Metropolitan Association of Upper Silesia and Dąbrowa Basin. It included diagrams of the structure of green areas and agricultural areas, land use, infrastructure, communication, demographic structure, public spaces, and the structure of housing development (Bradecki T. Cabaj M. 2018). Models of the demographic structure and density of buildings were presented using two models.

An example of the analysis of the diversity of the demographic structure shows that the use of a fully automated cellular model is not possible. The demographic structure of the GZM is complex: some areas are characterized by high population density (on average 13 people/ha – urban areas), while others are low (on average 2 people/ha – rural areas), but the average result is 9 people/ha. A model was prepared to demonstrate the diversity of the population structure in the GZM: the GZM area was divided into 3 km × 3 km quadrats which gives a size of 3 × 3 cm in the scale model. For individual communes, the total population was analyzed, including the division into districts and data on districts, villages, or other administrative areas included in the statistics of communes. The collected data were averaged for the needs of the synthetic model: the number of people in the districts per area of the model was analyzed and averaged. Similar calculations were performed for the needs of building-density analyses (percentage share of buildings). The data prepared in this way were presented in the form of a physical model (Figure 23.1). This model was recalculated and implemented as a mock-up during the classes, owing to which the students had to take into account the scale and present the differences between individual areas.

For the purposes of comparing the structure of selected public spaces, 49 cases were analyzed. Each of the cases was designated as an area of 250 × 250 m. Selected fragments of the building structure were obtained as 2D drawings (Figure 23.2) using the cadmapper.

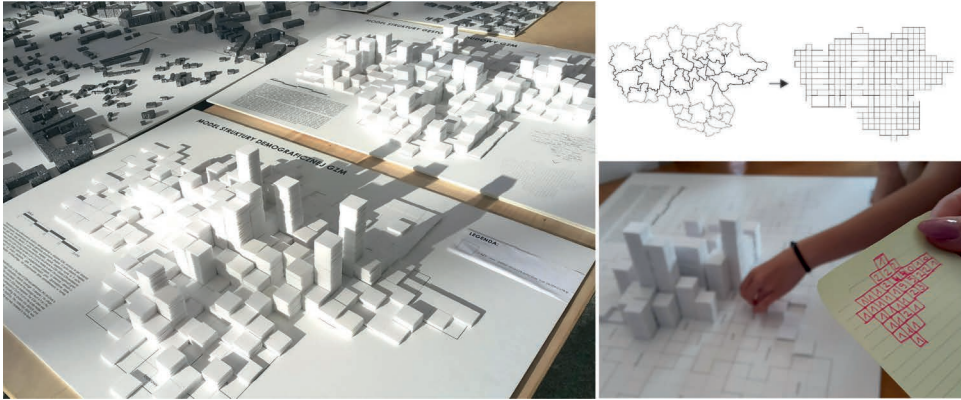


FIGURE 23.1 Physical models showing the diversity of building density and population density in the GZM, a diagram of the administrative division and the corresponding cellular model, the process of creating the mock-up (2018).

com platform, and then digital models were prepared (Figure 23.2) based on the data in openstreetmaps and the resources of the local bank database of the Central Statistical Office (GUS), as well as on the basis of own research and observations in the field. Physical models of individual spaces were made on a scale of 1.500. The models were made of polystyrene on a cutting plotter, which allowed for the preservation of the uniform character of 49 mock-ups performed by a group of 44 students. The entire mock-up was 5×2.5 m (Figure 23.2). Owing to such a large scale, the public spaces presented could be visually identified from a considerable distance of several meters, and the visual comparison of mock-ups standing next to each other was very easy.

Bologna Mapping Case – Physical and 3D Models Based on Data

The selection of Bologna as the city to be analyzed and mapped resulted from the need to prepare a larger group of students to participate in the international research and education project, ArchéA. The result of the research in a group of 16 students were models and plans based on the data obtained from the local spatial information system and made available by the Bologna city authorities (as part of the cooperation between the University of Bologna and the city authorities).

In the city scale, statistical areas for which data can be obtained turned out to be of major importance. In the case of Bologna, there are as many as 90. In a team of 16 people, a model of intensity of building development was created. The model is presented in a synthetic approach (the area of Bologna was divided into squares; simplifications were adopted on the border of statistical areas in the areas of squares). A similar model was implemented for the share of built-up areas indicator. In this case, each statistical area was distinguished as the shape of its boundaries. A scale of 20–80% of the built-up area was adopted. On this basis, a model was created illustrating the shapes of individual city areas and at the same time the share of buildings expressed by height: the higher the share of buildings, the greater the height of the mock-up element (Figure 23.3). The experiment also included a mock-up illustrating the elements of Kevin Lynch's theory for the city of Bologna (Figure 23.3). With the help of sticks, threads,

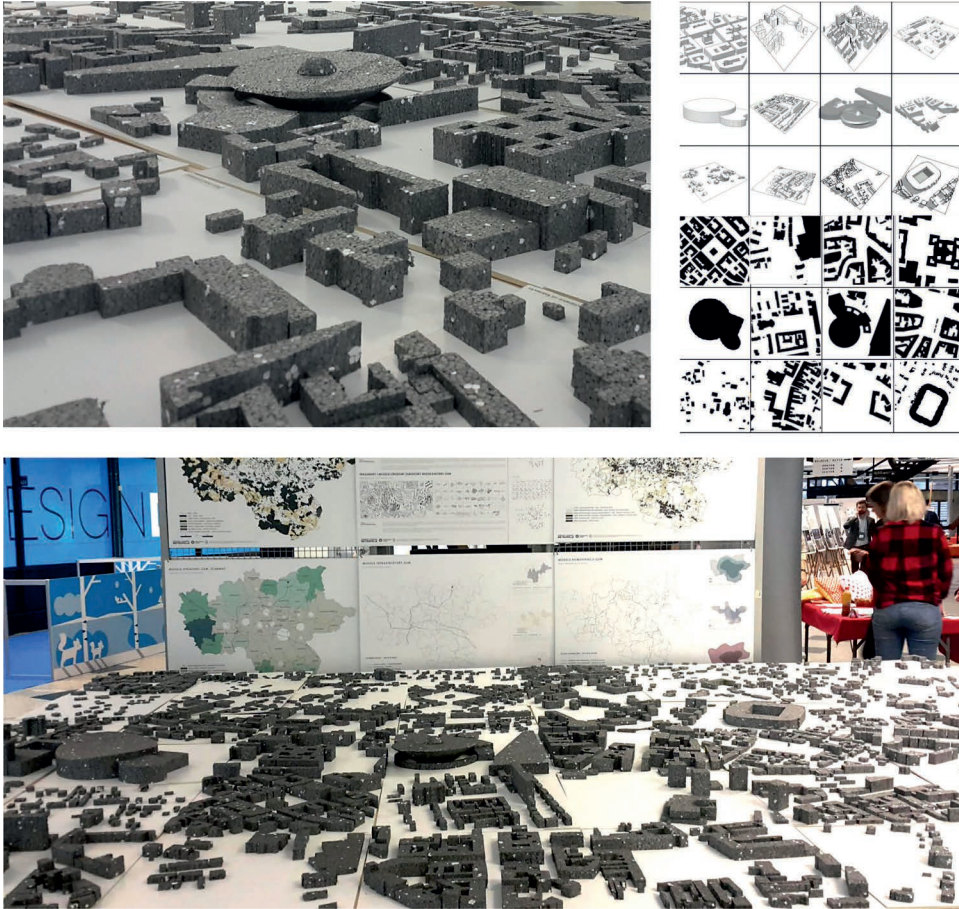


FIGURE 23.2 Mapping selected public spaces in the GZM area, plans, 3D models (2018), a 2.5 × 5 m mock-up during the exhibition presenting the GZM during the 4 Design Days, Spodek, Katowice (2019).

colors, and photo thumbnails, the following were presented: roads, junctions, edges, areas, and landmarks (Lynch K. 1960).

Aachen Mapping Case – Augmented Reality Models

Augmented reality (AR) is the extension of digital models and virtual reality, which is becoming more and more popular. Augmented reality refers to the combination of virtual objects and real-world environment, so that users can experience a realistic illusion when using the interactive virtual object to explore the real-world environment (Kan T. 2011). Most commonly used for this purpose are tablets or smartphones with a specialized application. The use of AR in urban planning is becoming more and more available. The visualization of the erecting of buildings in a given site in the area using a smartphone, based on a local plan, is already used in practice. The depiction of three-dimensional (3D) data is crucial for urban planning stages. Importance of new technologies usage is indisputable (Cirulis A., Brigmanis K. 2013).

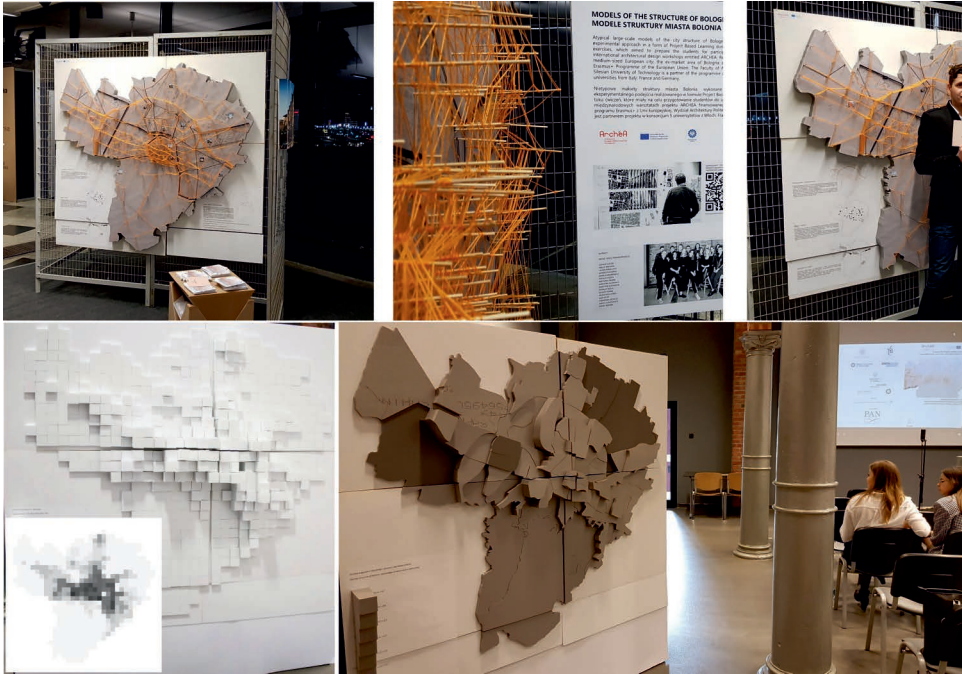


FIGURE 23.3 Models presenting the mapping of the city of Bologna: mapping city image elements according to Kevin Lynch's theory, mapping the percentage share of buildings, intensity of building development, 2019.

The aim of the exercise was to present models of the structure of the city of Aachen with the use of a smartphone application. After many attempts, it was possible to create 3D models of intensity of building development, population density, and accessibility of public space and other landmarks and structures, which were implemented in the form of physical and 3D mock-ups. The aim of the exercise was to provide viewers with an additional opportunity to experience the physical model through a 3D walk with their own smartphone. The exercise made use of 3D modeling software ArchiCAD and SketchUp, data and 3D models made available online, and the AR application available for installation on a smartphone (Figure 23.4). Displaying the models on one's own smartphone is dynamic, that is, the rotation of the models occurs simultaneously with the rotation of the smartphone in one's hands. The fact that this kind of experiment is possible in an academic setting proves that AR can be used in a simple and effective way. The analysis of public spaces in terms of pedestrian accessibility and the theory according to Kevin Lynch was also carried out in the form of 3D models, where selected elements were presented as an abstract model (in the form of semitransparent solids) superimposed on a fragment of the Aachen city model. The model prepared in this way was especially popular when viewed on a large-scale touchscreen (Figure 23.5).

Conclusions

All the described cases were carried out in the same way: the didactic process lasted about 4 months in a multiperson group, and the results were published online as well as during

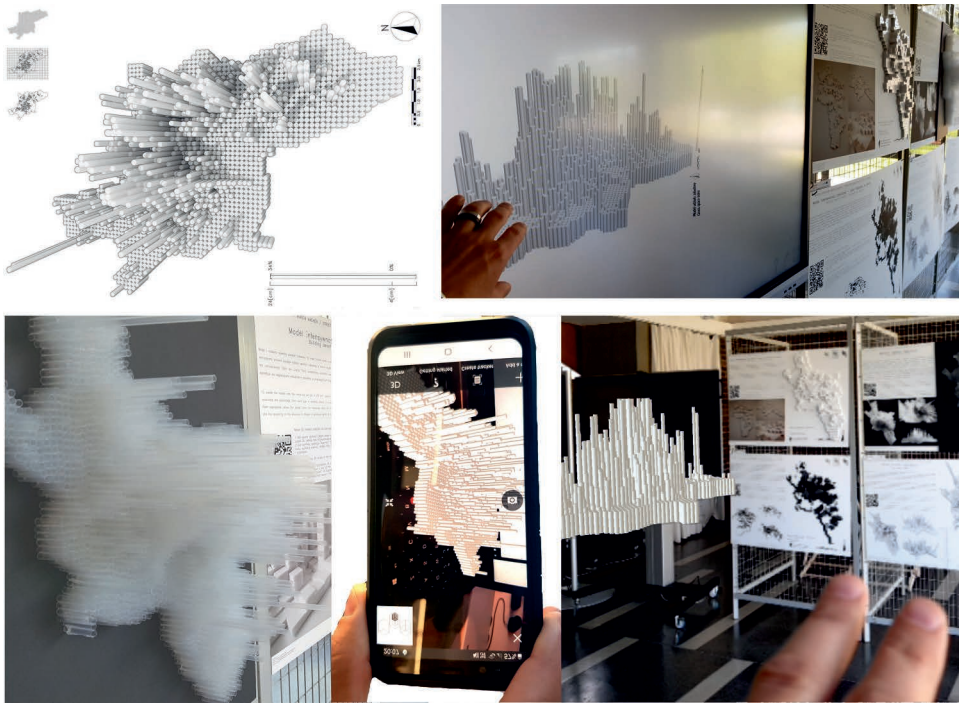


FIGURE 23.4 Physical model, 3D model – mapping visualization for the city of Aachen 3D model with the possibility of interactive viewing through a large-scale touchscreen monitor and virtual reality frames from a smartphone – mapping visualization for the city of Aachen – materials from the summary exhibition, 06.2020.

public exhibitions and presentations. Models presenting GZM and Bologna were displayed during the annual 4 Design Days fair in Katowice as part of the 2019 and 2020 editions [4dd.pl]. Several thousand visitors watched the models at each of those events. The presented experiments allowed to draw the following conclusions. Mapping public spaces turned out to be much more effective in the 2D variant and the physical model. Despite the fact that the 3D models were created in the same way with the same level of detail, their analysis in the form of individual model views was not effective and useful. On the other hand, the physical models made and presented side by side were much more useful. The viewers of the mock-ups identified the selected places and moved around the mock-up to make comparisons easier.

Mapping public spaces in the form of 3D models with the use of AR should also be assessed positively. The interaction of the viewer and the ability to change views between the physical structure of the city and the mapping performed were the method's advantage. It seems that the ability to easily identify a selected place in the city and a given issue that is the subject of analysis produces the best results in presenting the problem and understanding it by the viewer. The disadvantage of AR is the need to use additional devices or applications. The observations from the exhibition of models of Aachen city showed that the participants of the exhibition were much more eager to view the models in a traditional way than with the use of AR. This was shown by website traffic statistics.

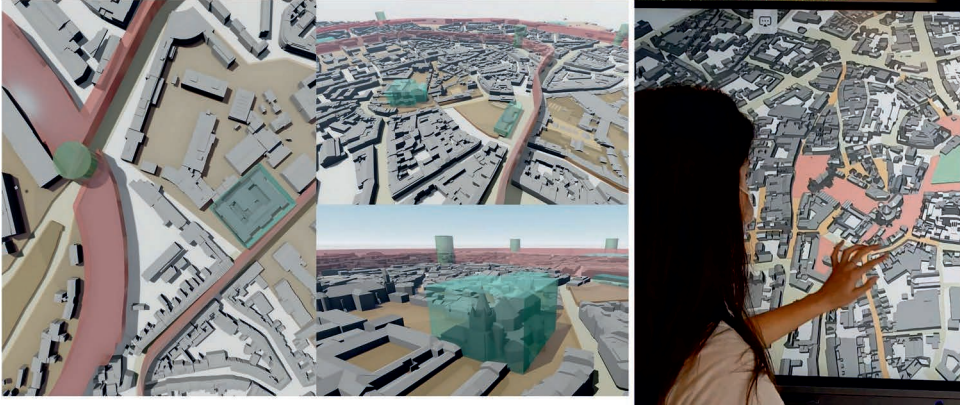


FIGURE 23.5 3D mapping of a fragment of the city of Aachen; analysis of elements identifying the city according to the theory of Kevin Lynch; an interactive model of mapping the accessibility of public spaces for pedestrians available on a large-format touch display hybrid exhibition 2020.

The above examples are the result of activities carried out as part of didactics, and, therefore, they are burdened with errors. Nevertheless, these are activities that correspond to similar professional studies and, at the same time, enable to understand the relationship between the visualized data and the physical structure of the city. The line between the 3D digital model and the real model is blurred. The increasing availability of various tools allows for the easy implementation of the real model based on the 3D model. It is also possible to extend a very simple physical model through AR. Working in real time on 3D models and AR turned out to be particularly effective during remote learning, due to the necessity to process the model together (a team of students and the teacher).

Data mapping should be assessed as useful in urban analysis. Data mapping in the form of 3D models should also be considered useful, to a large extent, in didactics and preparation of presentation materials for recipients who do not need to have specialist knowledge. The sophistication of maps and models that are created from the data depends on their detail and segregation. Developing mapping methodology with the use of 3D models and analyzing broadly understood data (big data) with the use of professional solutions (including confidential data analysis) may be useful for a better understanding of modern cities. The methodology can be useful in the analysis of the latest technologies that favor the development of a 'smart city'.

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Mapping GZM case study

Website: <http://urbanmodel.org/en/models-of-the-structure-of-the-upper-silesian-zaglebie-metropolis/> [access 2020.01.04]

Video: https://youtu.be/I31QU2_bPoc

Academic tutor: Tomasz Bradecki; authors: Małgorzata Olszańska, Anna Krawczyk, Agnieszka Sztabkowska, Agnieszka Janas, Magdalena Opania, Mateusz Śnieżek, Agnieszka Liszka, Helena Turczyn, Alicja Kochańska, Aleksandra Kuśmierz, Marcin Woźnica, Patrycja Dapa, Marta Cabaj, Magdalena Opania, Wiktoria Dziaduła, Mateusz Śnieżek, Sylwia Bluszcz, Klaudia Bugla, Olga Dramska, Roksana Drosd, Marek Grąbczewski, Karolina Grzesista, Krzysztof Łyszkowski, Jakub Kapral, Małgorzata Karolak, Kamila Korona, Dawid Krzeszowiec, Oliwia Kwaśniewska, Maciej Moszant, Marcin Noras, Agnieszka Paul, Jakub Pielecha, Natalia Płoskonka, Karolina Rusek, Michał Słota, Klaudia Sosna, Piotr Szenkowski, Zuzia Szmątloch, Damian Śliwiński, Artur Tomczyk, Joanna Weźranowska, Magdalena Wojtowicz, Angelika Woźniak, Monika Wrodarczyk, Julia Zubek

Mapping Bologna case study website: <http://urbanmodel.org/en/models-of-the-structure-of-the-city-of-bologna/> [access 2020.01.04] VIDEO: https://youtu.be/tIDoR3Ae5_Y

Academic tutor: Tomasz Bradecki; authors: Joanna Golba, Emilia Jaromin, Laura Konieczny, Katarzyna Korus, Anna Kurianowicz, Natalia Kyzioł, Wiktoria Paszek, Karolina Słomiany, Martyna Suchanek, Natalia Tadla, Oliwia Tomas, Anna Wiczorek, Alex Duży, Sebastian Dziwisz, Karol Subotowicz, Kamil Wróbel

Mapping Aachen case study website: <http://urbanmodel.org/en/models-of-the-structure-of-the-city-of-aachen-2/> [access 2020.01.04] Video: <https://youtu.be/wH4pH0GV3e4>

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24

THE URBAN CIRCLE OF LIFE OF PEOPLE WITH DISABILITIES

Mapping Urban Inconveniences

Katarzyna Ujma-Wąsowicz

Introduction

History provides us with evidence that before conscious city planning appeared, cities were shaped by the inhabitants themselves. They have evolved for many hundreds of years, adjusting and adapting the physical environment to urban functions. The effect of these activities, of this process of urban evolution, are also public spaces whose task is to provide the essence of social behaviors.

The way European cities are planned has always reflected not only the prevailing cultural and technological trends but also serious crises. For example, the epidemics of cholera in the 19th century led to the installation of municipal sanitation systems. As an antidote to neutralize respiratory diseases, the modernist movement introduced provisions to ensure greater access to daylight in the apartments and their natural ventilation. In turn, the development of railways and mass production of cars had a huge impact on urban communication systems (van den Berg 2020).

In the above context, when we think about contemporary cities and contemporary urban planning, the progressing development of suburbs (urban sprawl) and housing estates in which the lack of accompanying functions causes the disappearance of social (local) activity is very worrisome from the point of view of the activity of public urban spaces. This activity is moving to shopping centers, which is indicated by their development, and to the Internet. On the other hand, in the 21st century, we are observing an increase in social inequality, segregation, and the decline of the middle class. One can, therefore, speak of a “new crisis of urbanization” (Gzell 2015).

Social activists, who want the city to “bustle with life,” raised the alarm that has brought about and continues to bring positive results. Including in Poland, we are observing that in recent years there has come a time of social protests against city planning in a form that does not take into account psychological and sociological aspects, due to which social activity in public spaces has decreased. It should be emphasized that the Covid-19 pandemic has dramatically aggravated this problem.

The demands that are raised most strongly include, for example, better conditions for pedestrian and bicycle traffic, or better standards for recreation and communal functions. However, above all, efforts should be made to provide fairer conditions for people with special needs to function in public spaces, including people with permanent or temporary disabilities and the elderly and children (Ujma-Wąsowicz and Bielak 2012; Bielak and Ujma-Wąsowicz 2012; Ujma-Wąsowicz 2017). Everyone who has an influence on shaping our cities, from town planners to decision-makers (local, regional, and national), should realize that the battle for high-quality cities and housing estates must be won on a very small scale (Gehl 2011; Pluta 2014). This small scale should be understood as an area in which people experience the surrounding space directly in between buildings and also through the presence of the so-called street furniture.

Another issue is one related to social behaviors. Their intensity translates into whether we are dealing with a “living” city or, on the contrary, with a “dead” or “dying” city. Living cities are those where people interact with each other. Cities like this are always stimulating as they abound in experiences. In lifeless cities, one often encounters a situation of lack of experience and simply boredom. And it does not matter how varied in form or color the buildings or other architectural objects created in them are (Gehl 2011). Therefore, we should strive to ensure that our cities are alive and, thus, that they are accessible in accordance with the principles and goals of universal design, according to which public (at least) space will be accessible to every user, in which there will be not only places without architectural barriers but also intelligent accessibility solutions.

“The Urban Circle of Life” as an Aid in Mapping Urban Accessibility

Before discussing the titular “urban circle of life,” which will be useful in mapping the city’s accessibility, it is necessary to not only present the basic tools and methods that are worth using here but also to refer to the issue related to the ideas of a just city and universal design. In the opinion of the author of the study, these two philosophies ought to have a key impact on future city planning.

An equitable city was described by Susan Fainstein in the book entitled *The Just City* (Fainstein 2010). It is to be characterized by the possibility of various social layers functioning side by side (democracy), equal opportunities in terms of living conditions (equality), and respecting differences in terms of fitness, gender, age, and so on (diversity). In other words, Fainstein strives to promote a thought that when planning and developing cities, one ought to finally move away from the focus being most commonly placed almost exclusively on economic and business indicators and tip the scales toward social justice.

By implementing the above postulate, universal design enters the sphere of spatial planning in a natural way, as a key tool for building cities of the future. It is based on a user-centered design approach, which requires awareness and appreciation of the diverse abilities of people in order to shape flexible, useful, and intuitive spaces for everyone (National Disability Authority USA).

In the 1990s, a team of experts from the University of North Carolina (USA) defined the framework for theory and practice by establishing the 7 Principles of Universal Design. They are as follows: equitable use; flexibility in use; simple and intuitive; perceptible information; tolerance for error; low physical effort; size and space for approach and use. About 20 years later, scientists from the IDeA Center at the University of Buffalo (USA) published

a list of the principles mentioned above supplemented with the goals of universal design. When developing the above-mentioned goals, the authors (Steinfeld and Maisel 2012) based their content not only on the research conducted but also on the interdisciplinary knowledge of, *inter alia*, in the field of anthropometry, biomechanics, perception, cognitive processes, safety, health promotion, and social interaction. They specified that by shaping, for example, the space of a city or building, as a result of applying the principles of universal design, we should obtain the following:

1. Body fit – an environment adapted to a wide range of body sizes and capabilities;
2. Comfort – comfortable conditions for the functioning of the human body;
3. Awareness – easy perceptibility of the most important information;
4. Understanding – certainty that the methods of operation and use are intuitive, transparent, and unambiguous for almost every user;
5. Wellness – contribution to health promotion, disease avoidance, and injury prevention;
6. Social integration – certainty that each group will be treated with dignity and respect;
7. Personalization – the ability to choose and express individual preferences;
8. Cultural appropriateness – respect and enhancement of cultural values in the social, economic, and environmental context.

Works related to the acquisition of satisfactory and diverse users of output data as well as project results are often carried out in accordance with the Evidence-Based Design (EBD) research method, a concept derived from the paradigm based on the medicine knowledge (Evidence-Based Medicine). The EBD approach was first defined by Hamilton and Watkins (2009) and involved the conscientious, unambiguous, and reasonable use of the best available knowledge from research and practice in making important design decisions together with an informed client. The authors of the concept mention four levels of evidence-based activities: peer review, unbiased reporting, hypothesis and measurement, and critical interpretation of research. On this basis, among others, “architectural accessibility standards” are also developed, which, for example, in Poland, despite being centrally developed¹ (commissioned by the Ministry of Investments and Development), are not uniform, as they do not apply and are only a recommendation. Big cities develop their own independent standards (Warsaw, Poznań, Łódź, Gdynia, and other).

The idea of universal design is one issue. However, it is the still existing architectural barriers² for people with physical, sensory, or intellectual disabilities that are a key problem for the accessibility of public spaces in many medium-sized European cities. In this regard, urban audits is the key word for the changes undertaken.

When trying to verify scientifically whether a given space meets the criteria of architectural accessibility, two combined methods should be used, namely, a research walk and a qualitative research method in architecture and urban planning called Post-occupancy Evaluation (Fross 2012; Niezabitowska 2014). POE is a method of assessing the quality of the built environment during its use with the participation of customers and users. This method of examining buildings and spaces in between them covers three basic areas of issues: technical quality (e.g., technical condition, maintenance, technical safety), functional quality (including organizational and ergonomic), and behavioral quality (e.g., the impact of the organization of the place on behavior, spatial orientation, safety, and the sense of aesthetics). In a group of behavioral issues, the topic of sensory perception of space through smell, sound, touch, and others is also undertaken.

This research line of reasoning should be placed at the heart of the problem of barriers to accessibility, by realizing where and why they arise. Of course, town planning audits are nothing new. However, as is usual with carrying out such audits, the “devil is in the details.” Here a method is proposed that can be an alternative approach to the subject.

Most people, including designers, perceive the issue of architectural barriers through the prism of a given place; for example, there is no ramp or elevator, a parking space, or an adapted toilet. The lack of these architectural and urban elements is, however, only a fragment of a much wider optics.

In order to understand the many dependencies that determine whether public spaces are accessible spaces for people with disabilities, it suffices to look at the scheme called the “urban circle of life” which can be found in the Figure 24.1. In order to take full advantage of public spaces, it is necessary to reach them. A disabled person starts their journey to the city, from their place of residence, which in most cases is adapted to the special needs of the disabled tenant. For this person, the first moment where a barrier may be encountered is leaving the apartment, the next one is exiting the house or residential building, then reaching the car or public transport stop, getting to the destination, parking the car or getting off at the desired bus stop, then walking from the parking lot or bus stop to their destination. Finally, entering the building, moving around it. Returning home takes place in a similar fashion.

Identification of barriers to urban accessibility, in accordance with the need of a person with permanent or temporary disabilities to move about, can be done using the method of mapping them and on the basis of a list used for auditing. However, for the accessibility

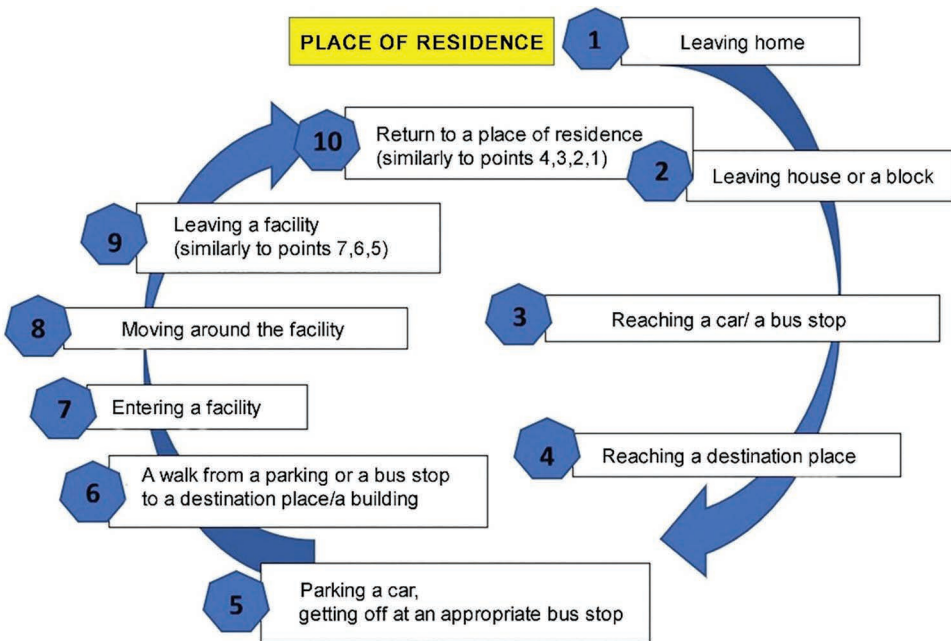


FIGURE 24.1 The urban circle of life.

Source: own study.

audit to be credible, the person conducting it should have empathetic features; that is, they must demonstrate an understanding of the limitations of people with disabilities, their need to choose destinations and paths by means of which they would like to get to them, and, finally, what dangers these people may be exposed to in the public space.

One more important issue should be raised in this context. It very often happens that when designing a given urban or architectural space, the designer thinks, in best faith, about ensuring accessibility to each group independently: to people in wheelchairs, to the blind, to the deaf, and others. However, it should be realized that some seemingly most obvious concepts are not solutions for everyone; for example, a lowered curb for a wheelchair user is a big risk for a blind person (they do not know the moment they are on the street); modern and aesthetic touch panels in elevators are completely unsuitable for the blind; on the one hand, repeated voice information in public transport is crucial for the orientation of people who do not know the route and the blind, but, on the other hand, it can be irritating and annoying (e.g., for a bus/tram driver), and there are many other such incompatible ways to avoid inconvenience. Therefore, in order to gain knowledge in the above scope, the audit should be carried out with the simultaneous participation of people with various disabilities, for example, people using manual and electric wheelchairs, a person who is blind from birth and thus already blind in adulthood, a deaf and hard-of-hearing person, and so on. It is extremely important for the elimination of spatial barriers in accordance with the principles and goals of universal design.

The mapping method proposed starts with the disabled person specifying a path from their home to the place as selected by them and following their public route in the most detailed way. The same path (especially in public spaces) should be followed by people with other illnesses or those moving with the use of other equipment/devices. In this way, the potential conflicts mentioned above will be detected.

The author's research to date (carried out, of course, with the team) was qualitative in nature. It highlighted the aforementioned accessibility problems and the need to solve them among persons concerned. Such research conclusions were drawn, among others, during a training course initiated by the author and financed by the Marshal's Office of the Silesian Province (Poland), held in October 2019 for employees of the public sector (the City Hall, the Municipal Social Assistance Center, the County Family Assistance Center, and others) in order to raise the level of awareness and knowledge of these employees about the real limitations and needs of disabled people with respect to movement and handling of various matters. This task was carried out in cooperation with the authorities of the City of Dąbrowa Górnicza (Poland). The workshops were conducted for two days. On the first day, field classes were held with the participation of the officials, invited disabled tutors (at least two, with various disabilities), and people elected to write down comments; each able-bodied participant could choose one of the ways to impersonate a disabled person: move in a wheelchair, put on goggles that impair vision, or put on an old age suit. The participants were divided into three groups (approximately 10 people in a group), each of which traveled a different, previously designated, route around the city: on foot and by bus or train. On the second day, there were lectures raising the audience's awareness and discussions summarizing the first day devoted to research walks.

The author together with a team of academic teachers and tutors conducted similar research with students of the Faculty of Architecture of the Silesian University of Technology in Gliwice in February 2019 and 2020 (Poland). Figures 24.2 and 24.3 show these activities.



FIGURE 24.2 The students of the Faculty of Architecture of the Silesian University of Technology in front of their home faculty accompanied by Dean Fross and the author.
Source: K. Ujma-Wąsowicz, 2019.



FIGURE 24.3 The students of the Faculty of Architecture of the Silesian University of Technology during a research walk.
Source: K. Ujma-Wąsowicz, 2020.

When undertaking ongoing in-between buildings audit activities, it is worthwhile, in addition to qualitative research, to conduct quantitative research, for example, showing how many places on the audited path are not adapted to a given disability at all and in how many places there are obvious conflicts between disabilities. This should give food for thought to the authorities (persons/institutions) deciding about the financing of possible changes, if it turns out that, most audited points on the path are not adjusted. Certainly, in addition to

the order for changes which are brought about by, for example, the Act on Ensuring Accessibility to People with Special Needs³ (here only in public buildings), in force in Poland since July 2019, this should be a convincing argument for improving the quality of open, in-between buildings and public spaces.

Post-Pandemic and Universal Design

The changes related to the pandemic have sparked many debates about the future. Also the one that tries to determine how cities can be built for present and future generations, and perhaps more importantly, how they can better respond to current and future crises.

In recent years, digitization and ubiquitous access to data have transformed the way in which we move around cities and how communities mobilize and advocate for potential change. Devices such as cellphones (around 9.8 billion), satellites (2,200), and other digital sensors (over 25 billion) still provide us with abundant amounts of data on human traffic, the environment, economic trends, and more. Owing to this, we are learning how significantly people have changed their behavior in response to the Covid-19 pandemic and that the effects of these changes do not affect everyone equally (Mackres 2020).

However, when life returns to normal, planners will have to take up new challenges related to the organization of cities and, thus, the organization of their inhabitants' lives.

Thus, the question of how, as designers, we should/could steer our thinking about the space shaped by us after the pandemic remains open. What new information resources should we explore both in terms of human knowledge and in terms of the environment and technology?

An interesting perspective on this issue can be found in the article by V. Lanteigne and M-Y M. Oram from August 2020 entitled *Universal Design: A tool for creating equitable spaces after COVID-19*. The authors present in it examples of applications of the idea of universal design, which will steer the design strategies in the future:

- Neurodiversity – the essence of design here is to adapt the environment for people with autism spectrum disorders (ASD), attention deficit hyperactivity disorder (ADHD), or learning difficulties. Universal design encourages one to dwell on color, pattern, texture, sound, and light in order to create more equitable spatial experiences.
- Mental Health and Well-being – the effects of COVID-19 have contributed to an increase in anxiety and depression, thus elevating the importance of health and wellness upon returning to work. To achieve a positive impact on well-being, universal design promotes mental health strategies, including through active (with the users) design of the workplace (ergonomic elements are emphasized).
- Technologies – technological progress will be an important mechanism to support new ways to use our spaces, including automated sensors, lighting, computer software, applications, and more.
- Transport – as mobility restrictions will slowly be in decline, public transport health and safety measures will not ensure complete safety. Hence, the bicycle should continue to be popularized as an available and attractive alternative in urban spaces for everyone (Lanteigne and Oram 2020).

Certainly driverless taxis, that is, autonomous cars, also seem to be an attractive alternative.

Summary

The character of the city, including its quality and beauty, is assessed by staying in and exploring urban public spaces. If we undertake the issue of the way in which public space is shaped and functions, it certainly depends on many interdependent factors such as the social system of values, local conditions, quality of law, as well as the efficiency of the market activity and the efficiency of local authorities and other public institutions. It is also obvious that new public space solutions are often part of long-term development plans of a city or its parts, influencing the transformation processes of its entire spatial structure.

Strategic decisions, based, for example, on the problems of public space accessibility as discussed briefly are just as important as the detailed ones, involving the urban detail. Therefore, a holistic approach to planning is necessary, where one of its elements should be audit of public spaces accessibility. The “urban circle of life” can be a useful tool for such inspection.

Acknowledgments

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Notes

- 1 Building accessibility standards for people with disabilities file:///C:/Users/admin/Downloads/STANDARDY_DOST%C4%98PNO%C5%9ACI_BUDYUNK%C3%93W.pdf
- 2 In Poland, this problem was presented in the Report of the Supreme Audit Office in 2018 file:///C:/Users/admin/Desktop/DOST%C4%98PNO%C5%9A%C4%86/NIK_kontrola%20dost%C4%99pno%C5%9Bci.pdf

3 Act of July 19, 2019 https://www.funduszeuropejskie.gov.pl/media/82728/dziennikustaw_19lipca2019.pdf

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- What Is Universal Design?* National Disability Authority. <http://universaldesign.ie/What-is-Universal-Design/> [access: 10.01.2020]

25

MULTIGENERATIONAL SPACES IN CONCEPTUAL URBAN PROJECTS IN POLISH CITIES

Agnieszka Labus and Paweł Woźnicki

The contemporary approach to shaping public spaces takes on a new meaning in the face of challenges faced by European societies, including Polish ones. These challenges concern not only demographic changes, including the aging of the society, but also aspects related to social changes, such as the increase in the number of single people, the increase in the number of people suffering from depression or loneliness, the disappearance of the multigenerational family model (Szlendak, 2012), and so on. These trends should set directions and actions for the implementation of urban strategies and for how to shape space to support interpersonal relationships and ties, including multigenerational ones, in order to counteract negative trends, while responding in particular to the needs of sensitive social groups, that is, the elderly, people with disabilities, families with young children, and so on, which are less privileged groups than young, fit, and active city dwellers.

In Poland, the trend of designing through the prism of the needs of an aging society and vulnerable social groups, in accordance with the standards of universal design, is slowly becoming noticeable in newly emerging projects.¹

What is important for the development of multigenerational space design are also conceptual, and experimental designs developed in recent years, which, although not yet implemented, bring a new approach to shaping such spaces in Poland. Such an approach is taken by the Laboratory of Architecture 60+ Foundation (LAB 60+).² This chapter analyzes two urban conceptual projects of multigenerational spaces developed with the participation of experts from the LAB 60+ Foundation, which have a chance to be implemented in Poland in the coming years. The first is the development of a master plan for the Warsaw Social District (WDS), and the second is a concept project for the development of the Multigenerational Square in Lesko. These are two different spatial assumptions in terms of the scale and the context of the place in which they are created. The aim of the authors of the chapter is to analyze the contemporary design concepts of multigenerational assumptions with a different location, specificity, and scale in order to identify significant determinants of shaping multigenerational spaces in Polish cities as illustrated with selected examples.

State of Research

In Poland, public spaces do not always meet the basic standards, as it turns out, despite the fact that, in principle, they ought to be multigenerational in nature and fulfil the needs of different people. As Abłażewicz-Górnicka (2013) points out, physical barriers in space are one of the main reasons for the process of withdrawal of the most sensitive individuals, such as the elderly or people with disabilities. It happens that, for this reason, many people give up active participation in social life, leaving home, or maintaining direct social contacts. In Polish cities, public spaces often fail to meet the basic standards of being equipped with elements of street furniture, Szukalski (2010) notes, pointing to deficiencies related to the elements, that is, benches, playgrounds, green areas, which can facilitate the functioning in the space for all its users. On the other hand, Cymer (2007) draws attention to elements of small architecture and street furniture, which are an important part of shaping multigenerational public spaces. These include, among others, benches and other seatings, tables, bicycle stands, gazebos, information poles, plant pots, stops and posts, and streetlamps (Kimic 2015, Herling 2016). They are an integral part of public spaces and are considered elements that facilitate the physical use of these spaces, increasing their accessibility and functionality. Providing fitness equipment suitable for the physical condition of users and a sufficient number of tables and seats can promote spending time outdoors, the forming of social relationships, and the undertaking of various activities that boost physical and psychological well-being (Yang, Kankan and Jianjun 2018). For urban public spaces, design principles must ensure equality between the different types of users and their needs. Design solutions, apart from following this rule, should, owing to their products, services, or spaces, give new meaning to the users of these solutions (Verganti 2009). Many authors (Arizona State University 2005; National Association of Area Agencies on Aging 2007; Miller & Annesley 2011) also draw attention to the aspect of linking public spaces within the structure of cities with access to public transport (stops) and to facilities with a recreational function or proximity to green areas (parks). Kaplan and Haider (2015) write that well-designed spaces, responding to the needs of different generations, can contribute to increasing their individual activity and support forging multigenerational relationships. It is important to define a multigenerational space through the prism of age-friendly spaces, because owing to this we are able to identify the features and criteria of this space that are important from the point of view of the needs of an aging society. This approach is evident in the concept of *Age Friendly Cities* (WHO 2007) relating to eight aspects of age-friendly city planning,³ one of the elements important for the considerations of this chapter are public spaces and buildings, which should be designed so that, in particular, elderly people can safely and freely move around them and have free access to outdoor areas (Labus 2014). As Plouffe and Kalache (2010) write, the characteristic features of cities and places that are age-friendly and, thus, multigenerational, include physical accessibility, proximity, security, and integration, and Buffel et al. (2012) also add pedestrian safety, crime rates, and environmental changes.

Determinants of Shaping Multigenerational Spaces

Based on the analysis of the literature in relation to multigenerational spaces, determinants of shaping and architectural and urban features of multigenerational spaces were identified, as shown in Table 25.1.

TABLE 25.1 Determinants of shaping and architectural and urban features of multigenerational spaces on the basis of literature analysis

<i>Determinants of shaping multigenerational spaces</i>	<i>Architectural and urban features of multigenerational Space</i>	<i>Authors</i>
The location is surrounded by green areas	<ul style="list-style-type: none"> presence of parks and green areas 	Arizona State University (2005) National Association of Area Agencies on Aging (2007) Miller and Annesley (2011)
Activating users	<ul style="list-style-type: none"> staying in shape and practicing sports (equipping the spaces with exercise and sports equipment suited to all users) active rest and recreation (spaces ensuring active and passive rest) 	Szukalski (2010) Yang, Kankan, and Jianjun (2018)
Social relations in space	<ul style="list-style-type: none"> varied functional and spatial program taking into account the needs of sensitive social groups (everyone can find something for themselves) creating places influencing integration engaging the local community and supporting the forming of multigenerational relationships 	Hirsch et al. (2000) Lui et al. (2009) Scharlach (2012) Kaplan and Haider (2015)
Space availability and functionality	<ul style="list-style-type: none"> availability of transport and services safe pedestrian crossings, adapted, low, wide curbs appropriate size and connection with the surroundings appropriate space markings (readability, visual identification) 	Liu et al. (1991) Mitchell and Burton (2006) Mobility, Mood, and Place (2017)
Well-being and being in space	<ul style="list-style-type: none"> independent use of it (access to toilets) simple and intuitive use of it solutions for improving comfort and readability sense of privacy and intimacy and safety while staying, getting about and moving in it 	Mitchell and Burton (2006) Plouffe and Klache (2010) Buffel et al. (2012) Speck (2013) Wantuch-Matla (2016)
Reception of space and its elements	<ul style="list-style-type: none"> attractiveness, aesthetics, and quality of space varied sensory experiences, engaging all senses elements of the so-called small architecture and street furniture (benches and other seats, tables, bicycle stands, gazebos, information posts, plant pots, stops and posts, streetlamps) references to cultural and social history (city artifacts, reference to the identity of the place) 	Cymer (2007) Szukalski (2010) Kimic (2015) Herling (2016) Mobility, Mood, and Place (2017)

Source: Own study.

Conceptual Urban Projects of Multigenerational Spaces in Poland

Warsaw Social District

General information about the project

The Warsaw Social District (pl. Warszawska Dzielnica Społeczna – WDS) is an experimental project of a model housing estate, which is to be built on an area of 18.5 ha in Warsaw.⁴ The project is a response to the widespread criticism of the commercial housing model, as well as the problem of the lack of housing availability visible in many cities.⁵ An important element in shaping the project was the creation of multigenerational common spaces within the district. The estate is to be adapted to users of all ages, with different psychophysical fitness, financial capabilities, and needs, while creating a sense of security and independence, in the so-called “social mix” trend. In addition, the project under discussion is to be an indication of good models and prototyping of new solutions that could be introduced in other places in the city, or in Poland.

Features of the Multigenerational Space

The WDS project provides for the creation of common spaces, both external, in the form of squares, playgrounds, as well as internal ones in the form of local activity centers, services located on the ground floors of buildings, as well as in former postindustrial facilities adapted to new functions integrating the inhabitants, which are the remains of the factory called “House Factory” producing prefabricated products for the surrounding housing estates from the times of the Polish People’s Republic. The WDS project has many goals and ambitions, among which one can find numerous connections with multigenerational spaces and their features. The concept assumes that the complex will be integrated into the already existing and developed urban fabric in the district of Warsaw. It will enable the integration of this space with the surroundings, while enriching this part of the city with new architectural and urban solutions. This allows, among other things, to use the already existing transport infrastructure, while creating own structure inside the estate. It will consist in dividing the WDS structure into large quarters and smaller neighborly (multigenerational) units, that is, into urban – public one and neighborly – greenspace. Common spaces will be places for everyone, serving to build a community, create interpersonal relationships, with taking into account age, gender, level of fitness, and likes and preferences of users.⁶ On the other hand, numerous spaces and neighborly paths and backyard gardens will allow for greater intimacy and a sense of peace, security, and privacy, and thus the creation of more lasting multigenerational relationships. The following public spaces can be distinguished within the designed public spaces in the WDS, as shown in Figure 25.1: WDS Gate – entrance to the subway and office buildings; Central Passage – city promenade, pedestrian, and bicycle traffic, location for most services and trade, avenue with trees; Central Square – the main square of the estate; The Green Track – a recreational boulevard.

The project has separated semipublic neighborly (multigenerational) spaces, as shown in Figure 25.2: House Factory – roofed, sports place, informal activities, temporary arrangements depending on the season; Greenhouse – a roofed meeting place, place of activity for residents; Green Squares – ponds, natural playgrounds, recreation areas, open gyms; Path – a continuous path leading through the entire estate.

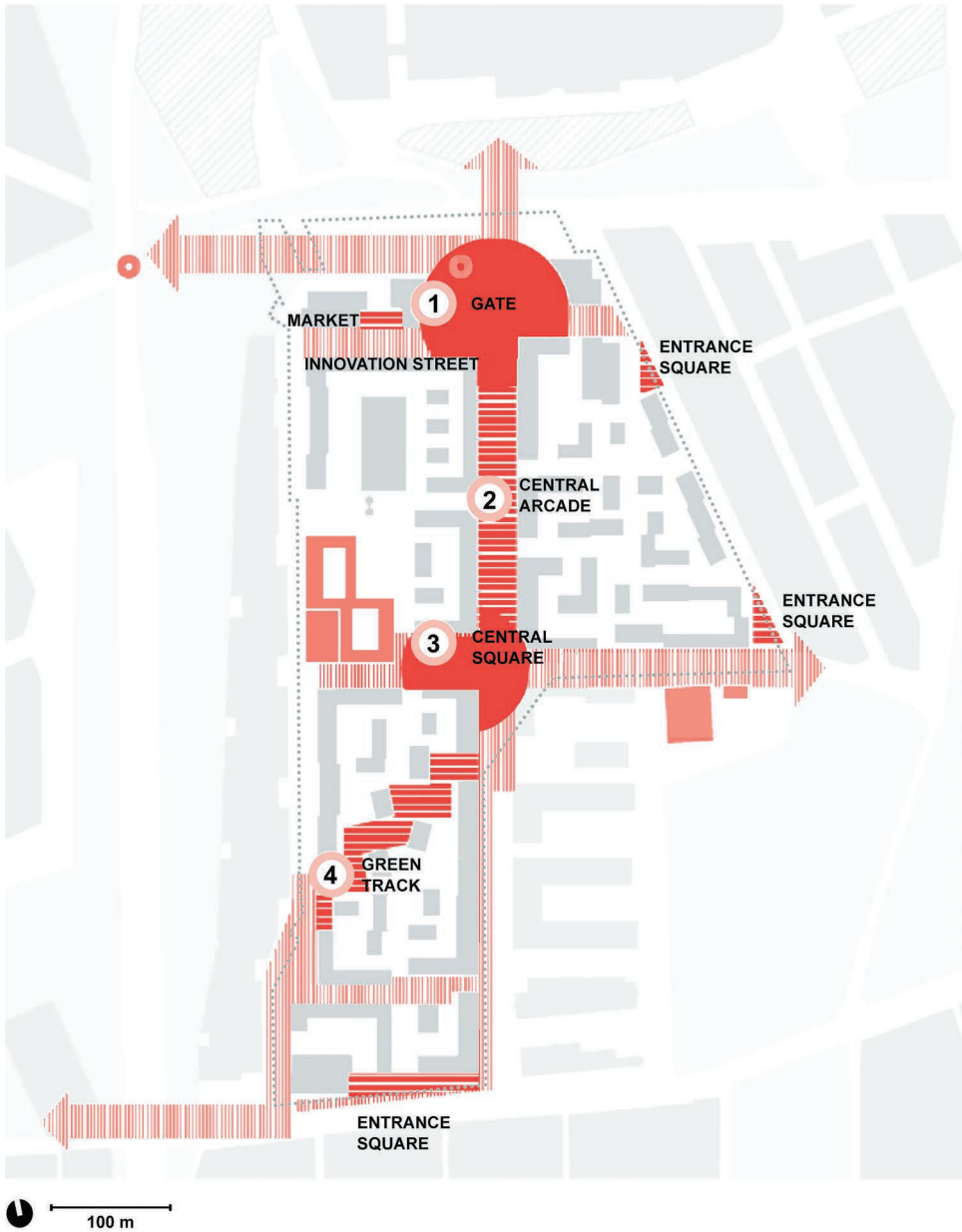


FIGURE 25.1 Scheme of urban public spaces. Source: own study based on “The Warsaw Social District. The Initial Concept of the Mastreplan”, Biuro Architektury i Planowania Przestrzennego, BBGK Architekci, 2019.

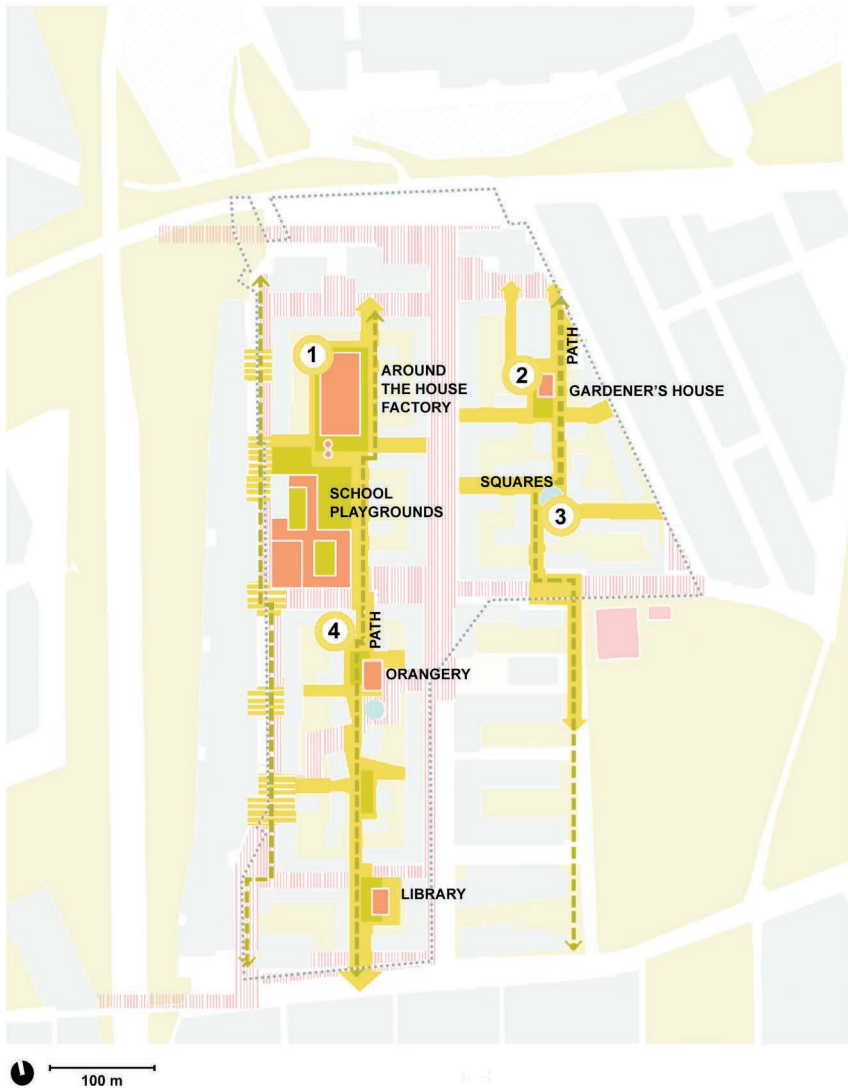


FIGURE 25.2 Scheme of neighborly semi-public spaces. Source: own study based on “The Warsaw Social District. The Initial Concept of the Mastreplan”, Biuro Architektury i Planowania Przestrzennego, BBGK Architekci, 2019

The multigenerational nature of the project is enhanced by the diverse systemic as well as functional and spatial offerings, owing to which it is possible to provide the space users and residents with the necessary services in their immediate vicinity. There will be such facilities as a kindergarten or a school and also a library, a cultural center, a multigenerational center, and a neighborly house. They are aimed at forming relationships and social contacts, supporting community integration and creating places that initiate multigenerational relationships and activities. An important element of the WDS program, in line with its multigenerational character, is the reference to the cultural history of this place and the use of the city's existing artifacts (remains of factory buildings, silos, overhead cranes, tracks), which will be adapted to new functions. The WDS project also relates to sustainable development in the context of construction, transport-oriented toward its public form, and an environment promoting a resilient ecosystem and adaptation to climate change.

Multigenerational Square in Lesko

General Information about the Project

Lesko is a city located in the Subcarpathian Province, which is the capital of the Lesko County and the Lesko Commune. The study area concerns a plot of land at Smolki street of an irregular shape, with an area of 6,501 m², surrounded by two five-story multifamily residential buildings. A single-story building is currently under construction on the plot serving as a nursery. In the immediate vicinity there are multifamily residential buildings and single-family houses. Moreover, a primary school and a kindergarten are also located in the vicinity of the playground under design. The area is an undeveloped space, devoid of spatial order as well as ordered and arranged greenery. There is no specific offer of spending time there for the residents of the estate and the surrounding area. There are elements of street furniture in the form of benches and an outdoor gym (under the windows of a residential building), without the possibility of ensuring intimacy for the residents who use them.

Features of Multigenerational Space

The design of the Multigenerational Square in Lesko involves the division of the area into several zones, each of which has different functional and spatial elements, as shown in Figure 25.3: Entrance Zone, Community Garden Zone, Sensory Zone, Sports and Recreation Zone, Fun and Development Zone.

The design of the Multigenerational Square in Lesko is an assumption suited to the existing conditions and thus integrated into the structure of a large-panel housing estate. The aim of the project is to connect it with the existing communication infrastructure and to enrich the area with a public green area. The Square can be used as an area for recreation and spending time for children and youth from nearby educational institutions (the nursery under construction, the existing kindergarten and primary school). The concept of the Square concerns a varied functional and spatial program that takes into account the needs of all social groups. As part of the functional and spatial program, the following elements have been designed: a barrier-free playground for every user, regardless of age and level of fitness, ensuring comfort and intuitive independent use; the existing outdoor gym has been moved to a secluded place, surrounded by greenery, owing to which it will be possible to activate and maintain the physical condition of residents, guaranteeing a sense of security

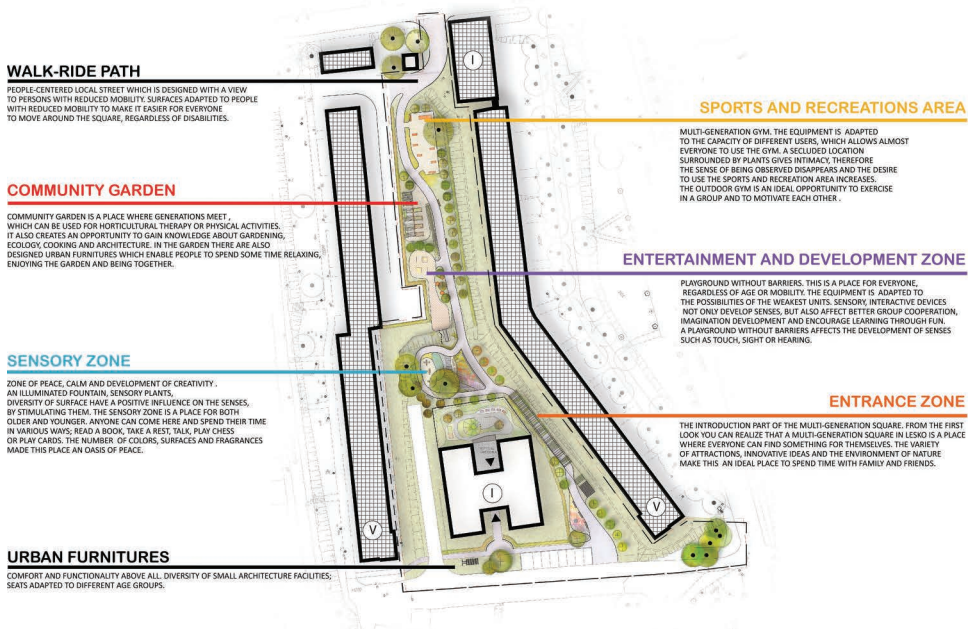


FIGURE 25.3 Distinction of functional and spatial multigenerational elements within the Multi-Generational Square in Lesko. Source: Laboratory of Architecture 60+ Foundation (LAB 60+), 2020.

and intimacy, increasing the quality and feeling of being in the space; a social garden, the aim of which is to connect generations and activate, educate, and improve competences and knowledge in the field of gardening, ecology, and architecture. The educational nature of the designed functions is important in the project, which strengthens social relations in the space, thanks to the creation of a place that will integrate and encourage the local community to spend time together and form multigenerational relationships. What is important in the project is a positive reception of the space and its individual elements of equipment. The elements of the so-called small architecture include: numerous places to sit, tables, a fountain, plants that activate the senses, and various surfaces, not only to increase the attractiveness and aesthetics of the space but also to use the space, increase the comfort of being in it, and stimulate the senses and develop creativity.

Discussion of Research Results

The two conceptual urban projects of multigenerational spaces discussed in this chapter were analyzed in terms of previously defined determinants of shaping and architectural and urban features of multigenerational spaces. As exemplified by the Warsaw Social District and the Multigenerational Square in Lesko, we can see different determinants and features of shaping multigenerational spaces, which are related to the scale of the project itself and the size and context of the city in which they will be built. In Table 25.2, a synthesis of the analyzed examples of selected design concepts of multigenerational spaces in Poland is presented in relation to the identified determinants of shaping multigenerational space.

TABLE 25.2 Synthesis of the analyzed examples of selected design concepts of multigenerational spaces in Poland in relation to the identified determinants of shaping multigenerational space

<i>Determinants of shaping multigenerational space</i>	<i>Warsaw Social District</i>	<i>Multigenerational Square in Lesko</i>
The location is surrounded by green areas	<ul style="list-style-type: none"> • postindustrial area of the former “House Factory” • an empty, muddy plot 	<ul style="list-style-type: none"> • in the vicinity of areas of large-panel housing estates, single-family houses, in the vicinity of primary schools and kindergartens, and undeveloped green areas
Activating users	<ul style="list-style-type: none"> • a roofed, sports place, informal activities, temporary arrangements, depending on the season, residents’ place of activity, open gyms 	<ul style="list-style-type: none"> • sports and recreation zone – multigenerational gym, community garden zone, playground for everyone, playing an educational role
Social relations in space	<ul style="list-style-type: none"> • creating new relationships between people, learning to interact with a new space 	<ul style="list-style-type: none"> • an attempt to change the existing habits of people and the relationship between users and space
Space availability and functionality	<ul style="list-style-type: none"> • a complex of buildings, infrastructure, functional and spatial program built from the scratch in the trend of universal design, the social mix, with communication with the immediate surroundings and the city center ensured 	<ul style="list-style-type: none"> • fitting into an existing space, a diversified functional and spatial program, designed in the universal design trend
Well-being and staying in space	<ul style="list-style-type: none"> • a sense of privacy and intimacy ensured by hierarchization and zoning of public spaces: urban public space, neighborly semipublic space and private space • adapting the program of public spaces to weather conditions (warm/sunny season and cold/rainy season) 	<ul style="list-style-type: none"> • division into readable and accentuated zones of multigenerational space fostering a sense of orientation in space, readability, safety while staying in, getting about and moving around it.
Reception of space and its elements	<ul style="list-style-type: none"> • reference to the identity of the place by adapting the existing postindustrial facilities to the functions of local centers of residents’ activity 	<ul style="list-style-type: none"> • a sensory garden with elements that engage the senses

Source: Own study.

Based on the literature analysis and case studies, a *multigenerational space* was defined, understood as a space designed based on the needs of people of all ages, with particular attention to the needs of vulnerable social groups (elderly, people with dementia or mental health impairments, people with disabilities, families with young children, etc.):

- giving a sense of different opportunities in terms of access, sense of security, comfort of use, and so on;
- defined as a common space, that is, external and internal, in which each of its users will feel good and will be able to function regardless of restrictions or weather conditions;
- referring to the social, mental, and physical activity of users, facilitating the formation of relationships between people, encouraging them to sustain this relationship and be active;
- accessible, safe, functional, comfortable, readable, attractive, creating the right atmosphere, with diverse functional and spatial programs;
- ensuring positive well-being and reception by various users, ensuring the highest possible quality of staying in it, also owing to access to green areas, equipped with elements of street furniture.

Summary

In recent years in Poland, attention has been given to the implementation of common spaces (external and internal) in terms of multigenerational assumptions, tailored to the needs, preferences, and capabilities of each age group. Until now, multigenerationality has been inscribed into one of the features of public spaces, but without paying particular attention to the determinants that determine it. Based on the analysis of selected urban projects of multigenerational spaces in cities of various sizes, the authors of the present chapter have made an attempt to define multigenerational space by identifying selected determinants of space that determine its multigenerational character. On the basis of the analyzed examples, one can notice a different scale and specificity of shaping multigenerational spaces. In large cities such as Warsaw, which have the capacity and funds for the implementation of experimental large urban projects, it has been observed that an important role in the location of multigenerational spaces is played by transport and service accessibility, a diversified functional and spatial program, and forming social relations, for example, through references to the cultural history of a given place. It is also important to pay attention to the scale of the project and the hierarchy of public spaces in the division into public and neighborly one. The neighborly nature of shaping space is closer to the approach of shaping multigenerational space in smaller towns such as Lesko in which the important determinants are: stimulating the activity (physical, social, recreational) of the inhabitants of nearby estates, ensuring the comfort of staying in a space, for example, ensuring safety and attractiveness, and a diverse functional and spatial program. It is worth noting, however, that in the case of the project in Lesko, there was no common space inside the building, which is an important element of establishing a multigenerational character, for example, during unfavorable weather conditions. The distinction between the determinants and features of multigenerational spaces and their proper implementation should be taken into account when designing public spaces, while taking into account the scale of the city and the scale of solutions and focusing on specific and appropriate features and dimensions of multigenerational spaces tailored to the needs of its users.

Notes

- 1 In 2020, the Terrace in the Świątokrzyski Park in Warsaw was created as a place for integration and recreation for all generations. The concept assumed changing the previously neglected space in the very center of the city into a place equipped with, among others, a skate park, a playground for children, tables for board games, city hammocks, and benches. The project draws attention to an organized and multifunctional space program, central location, high accessibility, and the proximity of the city park. Another example of a multigenerational space, recognized this year as the best response to social challenges in Poland, is the Local Activity Centre in Rybnik-Kłokocin, appreciated in the 9th edition of the Life in Architecture competition. The project was appreciated for the original solutions of the modular and multifunctional street furniture system, which are used upon creation of public spaces for local communities. The elements can be used as a place to sit at children's playgrounds, set a meeting and recreation spot near the housing estate, or serve as a shelter from rain. The project shows that even small architectural changes in public space can serve different needs of local communities, create new centers of public life, and provide safe and accessible spaces for everyone.
- 2 It is an innovative nongovernmental organization which, as the first in Poland, started dealing with an innovative approach to design as part of the trend of universal design social mix and multigenerational spatial solutions, while responding to the challenges of not only the contemporary generations but also of the future ones. The LAB 60+ Foundation implements projects in an interdisciplinary team comprising people from various fields and representatives of many disciplines, that is, architecture, urban planning, sociology, gerontology, law, environmental psychology, spatial management, and so on. As part of its operations, it undertakes experimental and pilot projects that bring a novelty in the approach to solving spatial problems, for which it has been recognized by numerous organizations. It is featured on the map of innovative laboratories of the European Commission, and, since 2020, in the European arena as part of the "Innovation Politics Award" competition organized by The Innovation in Politics Institute in Vienna. LAB 60+ was among the best 10 projects from Europe in the "Quality of Life" category.
- 3 Among which we can mention: transport, housing, public spaces and buildings, social participation, respect and social inclusion, active citizenship and employment, social support and health services, communication and information.
- 4 In the western part of the Wola district, right next to the border with the Bemowo district.
- 5 The WDS is a comprehensive project focused primarily on the residential function which will play a major role there. It is also enriched with a number of other assumptions related to offices and workplaces; educational, cultural, and sports services; and internal infrastructure.
- 6 As part of the project, profiles of potential residents were developed and broken down into: young people, elderly people, family (2 + 1, 1 + 1, 2 + 1, 2 + 3 and more), people with disabilities, including the elderly. Persons were defined on the basis of the criteria of the housing and life needs and preferences of the planned target groups. When making the profiles, the idea of taking care of social groups at risk of marginalization was also taken into account, which, as shown by the analysis of the socioeconomic situation, applies in particular to people with disabilities and the elderly. The proposed proportions of settlement result from the willingness to ensure mutual interaction between the inhabitants and the diversification of resources at their disposal. The descriptions took into account: the degree of independence of a representative of a tenant group defined in several dimensions: intellectual capacity, physical fitness, the need for support from third parties, life activity and readiness to co-create an estate or a neighborly unit, housing needs in relation to the current housing situation, average planned length of living in the estate for individual groups of tenants (estimated on the basis of the life stage of the target group representative and possible changes in personal, professional, or health matters), motivations and barriers of a representative of the tenant group in the context of settling the estate, resources and expectations regarding support from the community, demand for services available in the vicinity of the estate, activities in place in the community preferred by a given group of tenants, and possible variants of potential residents within individual profiles.

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AFTERWORD

Problems of the Contemporary City

Raffaella Neri

With the ending of the ArchéA research, we have had an opportunity to take stock, naturally somewhat schematically, of what we commonly call “the urban project,” and the issues that revolve around it, beginning from themes that emerged from the chapters in the book in various ways.

First and foremost, we must underline a fact of no small significance, namely, that the research in question was conducted by means of projects: the latter were applied to certain sample areas picked out in different European cities, choosing cities that were similar, of a medium size, with contexts that were alike in terms of condition, generally suburban or semi-suburban, and with problems of reconversion, reconfiguration, and recomposition within the framework of urban relationships. Thereby underlining the role of the architectural project and its essentiality in defining strategies, principles, and ways to tackle the problems of the contemporary city, starting from an analysis of the sites and a knowledge of the places on which to base any work: an act that was scientific but also interpretative, considered in different ways, whose necessity was reaffirmed, and whose *modus operandi* was discussed. In addition to the possibility of comparing different hypotheses that allowed a questioning of the principles through trial and error, applied to some real cases. A way of conducting research in the field of architecture that sought to update theory through practice, bringing the goal of every reflection back to architecture, its definition, and the project itself: a procedure that, for this reason, ought to be systematically pursued on every occasion.

Let us begin from two points: on the one hand, the condition of European cities and their current problems, a situation that it is necessary to acknowledge and, of course, interpret; on the other, the current condition of architectural culture, which, while counting on a long and significant tradition of studies and projects, particularly rich in Italy in the late 20th century, has become extremely motley, divided, and at variance when it comes to the ways of understanding the city and architecture. The point of view that we will be presenting should therefore be considered partial, intentionally based on rational thought and research

done on the bedrock, and purposely inserted into the aforementioned tradition of studies with the aim of highlighting certain questions that remain open.

The problems of cities. It seems superfluous to reiterate that the contemporary city – at different times depending on individual conditions of growth – not only no longer has a unitary, recognizable, and describable form but also, in its more or less recent expansions – especially post–Second World War – has failed to put forward principles that can give a clear form to the individual parts and, consequently, to the quality of certain places, those of the residences and of social life. The city envisioned by the Modern Movement has never seen the light in any of its interpretations, even though it has undoubtedly left us episodes of great interest and absolute value. The reasons are many, and I do not think they can be attributed to the lack of a precise vision, as evidenced by the proliferation of assorted proposals that have followed one another since the end of the 19th century. Pressing needs, economic interests, lack of political direction, administrative subdivisions, privatization of the territory and more, are just some of the reasons (which we shall not be investigating) that have led to the status quo.

Having now realized the impossibility of going back to imagining a city that is unitary in its form and its principles of growth, and in re-proposing the by-now-shared condition of the growth of cities by different parts, it is easy to see that in today's cities the only truly recognizable parts, terminated, with a clear and distinct form, are still and only the ancient nuclei that grew within their own walls. Or at times a few pieces of compact cities based on a unitary design, yet generally still relying on an organization by blocks and on the block–street relationship, gradually diminished during the 19th century and subsequently thrown into crisis by the Modern Movement.

There are therefore two fundamental urban growth problems that constantly attract attention: the rapid, extensive, abnormal, and unregulated development of multiple agglomerations, which considers the countryside that has always surrounded cities in a vital relationship as a land of conquest for future expansions, including its gradual removal and expulsion from inside major urban centers. In parallel to this, the imbalance between the oldest and densest parts, which have grown over a long period of time based on an essential relationship between different activities, whether collective or private, on the coexistence of places and distinctive works of architecture, of public institutions and housing, of the public city and the residential city, and the most recent expansions given over almost exclusively to housing, with at most some essential services: a firmly rooted discrepancy, well known to all, between the center and the suburbs, which we now look upon with resignation, as if it were a structural *sine qua non* of the contemporary city.

This is a twofold problem that on the one hand has to do with the growth model used, totally biased in favor of land consumption rather than subsequent urban expansions – so that they cannot be dubbed the formless and limitless extensions of certain agglomerations – lacking in vision, unrestrained, and untidy, and on the other, to do with the definition of those parts added gradually over time, which have extended the urban boundaries but have seldom enriched the civil life.

Some of these issues are now recognized as distinct and universal trends. The polycentric city model, extended to the regional dimension, seems to be a shared future vision and a target aspired to by the majority. Based on this rationale, a city is not only its compact constructed part, contained within boundaries that are no longer identifiable or solely within administrative boundaries. Instead, it is to be seen as a more complex and extensive entity,

a grouping of poles, of settlements of different sizes, relatively distant from one another but unified in a single network by an (efficient) public transport system. To clarify the sense of this, these new territorial or regional entities have been repeatedly defined in various evocative ways, *archipelago*, *constellation*, and the like, analogies that seek to underline the idea of *unity*, even when composed of different and quite distinct parts. Similarly, the polycentric city should be made up of *parts* that differ in their substance and in their physical and formal identity, and of heterogeneous *elements*, meaning not only aggregations of buildings and built-up areas but also of free, open spaces, empty spaces that are equally indispensable – natural elements, the countryside, water, hills, and so on: elements of a different *nature* established in unity, as an *archipelago* in fact, by virtue of their cultural ties, their belonging to a geography with common characteristics, their proximity, and their potentially rapid interconnection: the equitable distribution of community facilities that are urban in the proper sense of the word.

As Giuseppe Samonà suggested, Le Corbusier had previously pointed out, and many have experienced for themselves and emphasized, Venice is the city that, even today, fully conveys the idea of this latter principle, albeit on a rather reduced scale: perhaps because it really is an archipelago, perhaps because the water makes it more difficult to appropriate the land beneath it and make it fit for building, perhaps because no one dares modify it, in awe of its incomparable beauty. Here the parts are effectively separate and unequivocally distinct, interconnected thanks to the public transport system, with many communal activities, on an urban scale but not only, spread across the various islands. And then, a fundamental fact, each of these islands has its own physiognomy by virtue of the variety and individuality of the public places it houses and the works of architecture that define them. Because if the parts were all the same and, in some way autonomous, like the “self-sufficient” neighborhoods of the 1900s, perhaps they would not form a unity: each would be self-sufficient (or insufficient). To give rise to a rich, articulated, complex unity, it would be desirable that the parts of a city were different but necessary to one another in order to recompose the bigger picture of urban activities. This would mean that, for example, in one you could find the hospital, in another the university, in a third the cathedral, in yet another the institutions of justice, and, in all of them, the basic facilities for living: shops, schools, play and meeting areas, public parks, and so on. Distinct, separate, identifiable parts, recognizable above all thanks to their public places: these are the recognized values of the center of every European city.

But how can we distinguish the parts in general when we are not constrained by geography, as in Venice?

In a similar way to the amphibious city, the distinction is, first of all, unquestionably physical, a separation due to an alternation of solids and voids, the presence of open, empty spaces that distance and close off the parts, as happened with the ancient city walls, traces of which are almost always still present. In this regard, Le Corbusier argued that built-up areas should end up “overlooking the countryside,” in a clear-cut, precise way, without becoming lost within the infinite fraying of scattered houses and random warehouses, which leave the margins of settlements so vague.

However, such a distinction is also obtained through the recognizability of each part, the differentiation and identification of places, in particular those for the community and the most representative ones, their completeness, precise character, architecture, and formal quality. Also in this respect, Venice is a true master: the city, with its complex layout, is a succession of places, which can be recognized by their formal precision, the relationships

that the artefacts establish between each other, the relationships between the solids and voids, their size, and their proportion.

Both modes presuppose finiteness, a certain boundary, a clear limit between built-up areas and open spaces, a precise and therefore recognizable formal configuration, and it is the architecture that is always responsible for these.

This is a fundamental theme that emerges from the chapters and which I believe it is useful to reiterate. A city is made up of *places*, open spaces, specific in their meaning and in their consequent configuration. Architecture is the tool that can give form to indistinct and empty spaces, and this is equally true in the case of a single building: because the definition of a space, the identification of places, is undoubtedly the primary task of architecture. The inseparable relationship between the typological characteristics of buildings and the morphology of places derives exactly from this imperative purpose of architecture, from this almost instrumental condition, we might call it. Architecture dons the character of contexts, affirms it and reaffirms it, amplifies it and flaunts it, transforms it into typological features to give a new definition, to modify the spaces and endow them with a new identity.

If this happens in the case of a single work of architecture isolated in the landscape – suffice it to think, for example, of the role of Palladio’s villas in the Venetian countryside, or of a castle on top of a hill – then this is even more true when defining the places inside a city, the large and small squares, the lanes, and so on, which depend upon the layout of the architecture, or better, on the way the individual buildings are composed. Reiterating that the city itself is an artefact is useful when reaffirming the need for form, for that control which only the layout and form of works of architecture can exert on the quality of places. Since the city has a physical substance, it is only through the formal clarity of its constituent elements that it manages to represent the value and meaning of the life that gave birth to it – its fundamental *raison d’être*. An urban project for the places and settlements of a city concerns the composition of the works of architecture and seeks to bring identity to the single parts.

With the same objectives and the same tools, the elements that separate, and at the same time unify, the built-up parts of a city, the open spaces we mentioned earlier, the parks and the countryside, need to be brought under control. And, in the notion of the polycentric city, once again they then become their own, constituent, necessary elements for the construction of the contemporary city.

This aspect raises yet another major question posed in more than one chapter, which has become current again in this period with the indications contained in the documents of the “Green Deal,” which are steering the future of the European cities and regions toward a desirable ecological transition: the green issue.

Green is an extremely generic term, too vague to be considered an element of the construction of landscapes and territories. To wit, green is the color of the meadows, of the leaves on the trees; it is the color with which we generally refer to the elements of nature. By extension, green has become the direction of our future development, a synonym of what is natural, respectful of cycles, and the preservation of nature’s assets for the survival of the planet. Green is the guideline of the new European project that is supposed to steer every choice of urban and regional expansion or transformation, every attention to land consumption versus a greater density among the already built, to energy-saving and mitigation, to the curbing of climate change, and to guarantee populations a sense of well-being and conditions of equilibrium. However, to be understood as an element that participates by right in the construction of the city, this green must be sorted into the various identities and

forms that it can take: a cultivated field, a meadow, a wood, a pine forest, a park, a garden, a courtyard, a row of trees, and so on, including a “green roof” or a planted terrace.

This theme has actually come from afar in time. Back in the 1700s, the Physiocrats had already posed the problem of the loss of balance among urban nuclei as voracious consumers of products, and the surrounding countryside, a supplier of raw materials, general provisions, and food. The point of observation was purely economic, aimed at balancing resources and consumption between city and countryside, but the repercussions quite clearly aimed to plan and control the ways cities grow. So much so, that bright Enlightenment architects such as Ledoux and others took these aspects seriously enough to transfer and interpret them in their urban theories. In an already turbulent period, Howard confronted them with his *Garden City of the Future*, where *green* took on a greater specific meaning and distinguished between different roles. A little later, the need for *green* was invoked to improve the hygienic conditions of the housing in the decrepit urban nuclei of the early 1900s, in the form of free spaces to interrupt the houses and guarantee light and sunshine, guidelines that were then transferred to the worthy experimental housing estates built across Europe. Le Corbusier, Hilberseimer, May, and many others would end up champions of the need to think of a city of quite different dimensions, one that bore the countryside within it and one that made meadows, parks, and natural elements the general context within which to construct a city in its new expansions and also, rather more provokingly, to replace the old nuclei.

All this is known history and, for some, also water under the bridge. I personally believe that these theories, in addition to the manifesto aspect and the differing temporal collocations, have the merit of emphasizing a theme that has not yet received unequivocal answers, and which today, as often happens in the recurrences of history, is again relevant in the face of pressing climatic and survival problems. Yet again, the question comes from other fields, but it falls on the role that natural spaces – extending the term ‘green’ to other elements, for example, water, open landscapes, and the productive countryside – can or indeed must have in building a polycentric city today.

The need to understand the agricultural countryside, not exactly a natural space, but, on the contrary, a space designed from time immemorial by man down to the tiniest detail, from the sprawling systems of ditches and channels that spread across the land, to the rows of trees to shade certain crops, and the hierarchy of local routes that allow the organization of fields and farms, as already mentioned. The same delicate role of distinction between the parts can be taken on by parks and gardens, inserting themselves within uninterrupted urban extensions and salvaging unfinished and abandoned pieces of land, testing out new relationships between architecture and open spaces, similarly to what already occurs with our cities’ historical or historic parks.

Furthermore, green spaces can become elements to construct modern urban squares, collective places on a smaller scale, always defined and given measure by the surrounding architecture, similar in meaning but different in principle to the squares of historical cities. If we look closely, history has handed down to us many extraordinary examples where nature has entered in no small measure as an element that constructs places, bestowing extraordinary quality and a special character upon them. Without harking back to the exceptional Venetian “water piazza,” lying between Saint Mark’s Square, the island of San Giorgio, and the Punta della Dogana with the Salute watching over it, for me, one of the most exemplary squares today is still the magical “Square of Miracles” in Pisa. Or again, so unexpected in such a dense fabric as the center of Milan, we have the Basilicas Park, an

unplanned side effect of the wartime bombing, overseen by the apses of the two churches of San Lorenzo and Sant'Eustorgio: a true place of collective gathering, corresponding to an ancient square, characterized by the two important works of architecture that guard it, a park contained in its measurements, yet which has managed to reverse the frequentation of the streets around it, to bring the community life back inside it. And in addition, the recent revamping of the Darsena area, another “water piazza” in which a natural element is once again the protagonist, mirroring the houses and the city gate designed by Luigi Cagnola, which has acquired a fresh quality and vitality thanks to its new architectonic definition. These are merely a few examples, to suggest the possibility of imagining elements of nature inside a compact city, to investigate their potential role in the construction of public urban places, to study their extent, certainly different from that of the “stone piazzas” of history, and above all the compositional principles imposed by the works of architecture that must define them, including their type, character, identity, and form.

Arguably even more difficult and uncertain, arduous certainly yet urgent, is an equally essential issue for envisioning the form of the future city and responding to the challenges posed by the guidelines from Europe. I am referring to the issue of housing estates, still the quantitatively most consistent destination of cities, which defines the structure and organization of the largest swathes of fabric.

Here too, it may be necessary to distinguish between two issues. When speaking of suburbs, we are not referring so much to the physical distance from a center but to a distance in meaning and value, to the condition of parts that lack genuinely urban qualities, the institutions and collective places that identify them and encourage a frequentation that is not limited to local residents but extended to the inhabitants of the whole city. The beauty of the Old Towns, at times despite deprived dwellings born as council housing, redeemed almost everywhere from decay in the later decades of the 20th century, depends precisely on the extraordinary wealth of the public places, as well as the public, secular, and religious buildings present, which sum up their identity in a nutshell. Because, as Pausanias was wont to say, a city cannot be called such if it has no theatre. Translated into modern times, this means that there can be no city without institutions and public places to represent the civil community. It follows then that any redemption of the suburbs inevitably derives from the establishment of public places that must belong to the city as a whole, interlinked with others and accessible. This condition is conclusive.

After which, the second urgent issue is to define the compositional principles of residential areas, in search of a relationship between the private home and the public spaces of the city, a relationship that has been the city's main quality throughout history. The direct relationship between the house and the street is none other than the ability of the former to define collective, open, vital places, something the street has always represented in European cities. The question we must ask ourselves is this: is this model still valid and practicable, even in the face of the changes in the role of the street which almost everywhere has become a route for car traffic? Is this model the only one possible? And, above all, is it the same in new settlements, in those extended areas that increasingly offer themselves up to radical transformations?

Research into the definition of public places is intricately linked to this theme, which, in specifying its meaning, could be defined as a search for the principles to define a minimum dwelling unit, similar to that of the block in its relationship with the street and on the hierarchy of semi-collective interior spaces, so that the quality and richness might be equaled

and surpassed. As always, this entails rethinking the building types that constitute it, their interrelationships, and the form of the places that their composition can generate, along with the ways of aggregating the units and the fabric they create.

The issues of climate mitigation and the possible role of natural elements, as suggested by the European guidelines, must be included in research into the general identity of spaces that can be defined through the use of *green*, to also be included in residential areas. This too remains an open question, one that finds special opportunities for experimentation in the large areas where our suburbs have been reconverted, the industrial ones, whose activities have long since been expelled from European cities: railway marshalling yards, disused barracks, and so on.

The importance and delicacy of this theme, addressed in the project seminars and cited in the chapters, is particularly evident if we consider that the destiny of the contemporary city, its hoped-for new “green” course of action, its transition toward models with a social and economic balance as well as a stable quality of life – which includes the quality of places – can only be decided in our cities’ suburbs, in those parts where the greatest transformations can actually take place, the most consistent changes remain possible, and where the most massive interventions will prove necessary. Given that our centers are already rich and have their own identity, the possible operations here are precise and few. The destiny of the cities will lie in the transformation of the suburbs, which must not catch us unawares.

In closing, just one last question: why talk about cities that are European and medium-sized, the main theme of this research?

Because these, I believe, already possess some of the qualities that we would like our future cities to possess: the recognizability of the parts, built up over time and still not muddled or completely swallowed up by the new expansions, the quality of the public places and works of architecture, a relationship still more or less in balance between expansions and the surrounding natural environment. These conditions allow us to glimpse a direction of development that has not yet been compromised and is therefore more easily feasible. They also present some of the problems set out, the existence of large outskirts with no identity, for example, but also the conditions for their effective transformation plus various abandoned areas for conversion of a sufficient area to allow a broad reflection on issues of development and urban design. These cities are the real wealth, the priceless heritage to be preserved and governed as well as possible, which probably only Europe possesses on such a large scale and in such variety.

Indeed, what was it that attracted Frederick Barbarossa in the far-off Middle Ages to descend into northern Italy to conquer Lombardy? None other than the wealth of a territory that, favored by its location on a plain, consisted of a large number of municipalities scattered with regularity across a fertile countryside. A single large city, we would say today, a well-distributed urban presence, because, it was said, there was no farmer who, in the space of a day’s walk, could not reach a marketplace to sell his products: a place that could be recognized from a distance thanks to the bell tower that showed him the way, and, closer to, thanks to the compact city walls he had to cross through to reach the market. This was the great, palatable wealth of a balanced territory. A polycentric city, we would say, which, updated in its forms and ways, is what we wish for the destiny of our cities. An ancient teaching, yet still very up to the minute.



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