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Vítor Oliveira *Editor*

ISUF, Urban Morphology and Human Settlements

Advances and Prospects

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Vítor Oliveira
Editor

ISUF, Urban Morphology and Human Settlements

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Editor

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Florence conference 1999, guided tour—Gian Luigi Maffei, Jeremy Whitehand and Nicola Marzot
(Source *Urban Morphology* 3, p. 92)

The book is dedicated to the memory of Gian Luigi Maffei (ISUF President, 2005–10) and Jeremy Whitehand (Urban Morphology Editor, 1997–2019).

Foreword

This book celebrates the 30th anniversary of the International Seminar on Urban Form, ISUF. By all accounts, ISUF is the only association that focuses on the study of the form of cities. Urban form studies in turn serve to describe the places where humans live and to explain how they came about. As such, the studies are an important basis for understanding how people shape, relate to, and interact with their environment. And they can guide urban design, planning, and management.

Urban morphology has long existed as a field of study. But curiously, it has yet to be commonly recognized in either education and research, or in urban design and planning. The book seeks to redress this situation. The first part reviews the history of ISUF and summarizes its main achievements as a self-identified ‘academic society’. Analyses of the contents of the organization’s journal, *Urban Morphology*, figure prominently to document ISUF’s evolution. Separate chapters assess progress made in the British strand of morphological research, characterized as the historicogeographical approach, and those made in the Italian typological approach to urban morphology. This first part concludes with a chapter reviewing the history of the use (or lack thereof!) of urban morphological approaches in urban design and planning practice, primarily in England. The book’s second part addresses the future of ISUF. Views are focused on new ways to analyze urban forms as well as challenges presented by contemporary urban infrastructures. Three additional chapters address the cross-cultural, interdisciplinary, and specifically the social dimensions of the different approaches to urban morphology within and outside of ISUF.

The book reveals that ISUF has thrived as a relatively small organization. According to the statistics presented, it has had as few as 50 habitual members over the years. Yet remarkably, ISUF has been able to offer conferences with some 200–300 attendees every year for over 20 years. These conferences have taken place in several European countries, as well as in the USA, Brazil, and China. This conference attendance suggests that the field of urban morphology consistently attracts an international audience of researchers, scholars, professionals, and practitioners. On the other hand, the small number of ISUF ‘regulars’, and the fact that many of the conference attendees are ‘locals’ (typically, the majority of attendees come from near the conference location), indicate that ISUF has room to grow. Indeed, several

of the book's contributors seek to gauge ISUF's potential future directions. They analyze the contents of *Urban Morphology* to assess the scope of urban morphological research by specific research project focus and topic, by participants' national origin, or disciplinary provenance. By all these measures, and at least through the lens of its journal, ISUF's influence appears impressive but also limited. The journal has flourished over the decades on a small budget. It has even gone online. However, its impact factor remains small, indicating that researchers may often opt to submit their work to more popular journals.

Overall, the book shows how ISUF determination to expand both its outreach and its horizons has yielded positive results. Through ISUF, the Italian branch of the organization has gained well-earned international visibility, with the work of Muratori, Caniggia, and colleagues now being increasingly acknowledged in urban design and planning research and even practice. Yet undeniably, the British Conzenian influence has dominated ISUF's historical trajectory. Jeremy Whitehand's achievements figure prominently in the book, justly witnessing his longstanding focus on urban morphology both before and during ISUF. His editorship of *Urban Morphology* explains why the Conzenian approach often serves as the gold standard against which other research is pegged. The next generation of ISUF leaders now has the opportunity to expand on the interest stated in several chapters of this volume; namely further outreach in the international realm and in the design and planning professions.

Seattle, USA
January 2024

Anne Vernez Moudon

Anne Vernez Moudon is Professor Emerita of Architecture, Landscape Architecture, and Urban Design and Planning; Adjunct Professor of Epidemiology and Civil and Environmental Engineering at the University of Washington, where she directs the Urban Form Lab (UFL). Dr. Moudon lectured and consulted in Europe, Latin America, and Asia. She published articles in urban design, transportation, and public health journals. Her books include *Built for Change: Neighborhood Architecture in San Francisco*, *Public Streets for Public Use*, and *Monitoring Land Supply with Geographic Information Systems* (with M. Hubner). She is a past president of the International Seminar on Urban Form (ISUF).

Introductory Note

This book offers insight into the most important scientific society on urban morphology worldwide: the International Seminar on Urban Form (ISUF). After addressing the three-decade history of ISUF, the book analyzes the present and future of this scientific society, of urban morphology, and of human settlements. This timely and fundamental reflection gathers contributions from present and past leadership of ISUF since its inception in 1994.

Over the last three decades, the urban world has undergone major changes: the urban population is now higher than the rural population; more than half of the world's population lives on a single continent—Asia, home to almost three billion people in China and India alone—so geographical imbalance is considerable; and while half of the urban population still lives in small cities of fewer than 300,000 inhabitants, the number of megacities has increased significantly. How does the physical form of cities in different parts of the world respond to these dynamics? Can cities preserve fundamental elements of humankind's urban heritage while accommodating changes driven by the main socioeconomic and environmental needs of today?

The field of urban morphology has been continuously adjusting to the essential dynamics of its object of study. While developing and strengthening its most robust theories, concepts, and methods designed after the mid-twentieth century, urban morphology has been able to integrate innovative approaches for describing and explaining the emerging dynamics and patterns of urban form—often incorporating groundbreaking technologies for data collection, analysis, modeling, and simulation. But what is the role of urban morphology in science and society today? How effective is it in communicating a rigorous understanding of the urban landscape both to academics and researchers in other fields and to citizens in general? How successful is it in providing practitioners with relevant and useful knowledge that informs their action on cities' form and structure through spatial planning, urban design, and architecture?

This book addresses these fundamental questions, offering academics, researchers, and practitioners comprehensive knowledge on human settlements, the field of urban morphology, and the role of ISUF in promoting groundbreaking morphological thought.

Vítor Oliveira

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Vítor Oliveira

Editor and Contributors

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Contributors

Michael Barke was Treasurer and Council Member of ISUF from 2009 until his retirement in 2022. He was Reader in Human Geography at Northumbria University with teaching and research interests in the urban history and urban morphology of North East England and Spain. He is Honorary Librarian of the Society of Antiquaries of Newcastle upon Tyne, established in 1813 and the second oldest such society in the UK.

Michael P. Conzen is a professor of geography at the University of Chicago in the Committee on Environment, Geography, and Urbanization. His research interests include international urban morphology, American historical geography, and the history of cartography. He is a former secretary-general and past president of the International Seminar on Urban Form (ISUF), co-organizer of the newly-formed North American Network for Urban Morphology (NAUMN), and on the basis of his contributions to European urban morphology has been elected a corresponding member of the Austrian Academy of Sciences (ÖAW).

Kai Gu served as Council Member of ISUF between 2007 and 2009. He particularly acted as Conference Co-Convenor and Academic Committee Chair of the 16th

International Seminar on Urban Form that took place in Guangzhou, China, in 2009. During his service as Secretary-General of ISUF between 2010 and 2018, he coordinated and managed ISUF's administrative affairs, including initiating new policy discussions and making recommendations to the ISUF Council. He is a founding member of the Chinese Network of Urban Morphology and the Australasian Network of Urban Morphology. He played a key role in ISUF's growth into a major global organization.

Karl Kropf is Senior Lecturer in Urban Design and Historic Conservation at Oxford Brookes University and Director of Built Form Resource, an urban design, landscape, and heritage consultancy. He has combined academic research in urban morphology and practice in urban design for many years, working in the USA, UK, and France. Having attended the early formative meetings of ISUF in Lausanne and been a member since its inception, Karl has also been Associated Editor of *Urban Morphology* since its launch in 1997.

Peter J. Larkham is Professor of Planning at Birmingham City University. His background is in urban geography, with a first degree from the University of Manchester and a PhD, supervised by Jeremy Whitehand, from the University of Birmingham. His research focuses on urban conservation and change, with a recent specialization on the urban reconstruction after the Second World War. He has published 90 refereed journal papers and 49 book chapters. He is currently Editor of ISUF's journal *Urban Morphology* and was Associate Editor from the journal's foundation.

Keith D Lilley is Professor of Historical Geography at Queen's University Belfast. He has served as Treasurer of ISUF (2005–8) as well as General Editor of the *British Historic Towns Atlas* (2014–22). He completed his doctorate on 'Medieval Coventry: A Study in Town-Plan Analysis' at the University of Birmingham, and there was an active member of the Urban Morphology Research Group (UMRG). His research encompasses the application of digital mapping methodologies such as GIS to explore European medieval urban design and planning processes and practices. His books include *Urban Life in the Middle Ages* (2002) and *City and Cosmos* (2009).

Nicola Marzot is an architect, graduated in Florence in 1994. In 2000, he received his PhD in 'Building and Territorial Engineering' from the University of Bologna. In 2014, he obtained his second PhD in 'Architectural and Urban Composition' at the Technical University of Delft. He was Associate Professor at the Department of Architecture in Ferrara and Assistant Professor of Public Building at the Technical University of Delft. From 2006 to 2009, he was Secretary-General of ISUF. He currently teaches at the Department of Architecture and Design of the Polytechnic University of Turin.

Ivor Samuels is an architect and town planner. He had a major role in bringing together the schools of thought that would create ISUF. In addition to the UK, he has practiced and/or taught in Italy (important for an introduction to urban morphology), France, Spain, Yugoslavia, and several Latin American countries. He chaired the ISUF Task Force on Research and Practice and assisted by an ISUF award recently

has taught and researched in Poland and Serbia. Recent ISUF conferences developed from this work.

Tolga Ünlü has been Secretary-General of International Seminar on Urban Form (ISUF) since 2021 and had a founding role in inauguration of the Turkish Network of Urban Morphology (TNUM) in 2014. He has been a member of the Urban Morphology Research Group (UMRG) since 2012 and ISUF since 2009. He is a professor of Urban Morphology and Urban Planning and the head of the Department of City and Regional Planning at Çukurova University, Turkey.

Susan Whitehand was awarded Honorary Life Membership of ISUF in 2014 for her long-term contribution to the organization. She was Assistant Editor of the journal *Urban Morphology*. She is a geographer and former student of MRG Conzen. She has co-authored important papers on agency, the application of historico-geographical urban morphology in China, and its comparison to the process typological approach. She has donated certain papers of JWR Whitehand to be held in Special Collections at the University of Birmingham, UK.

Abbreviations

AI	Artificial Intelligence
AR	Augmented Reality
CISPOT	Centro Internazionale per lo Studio dei Processi Urbani e Territoriali
CNKI	China National Knowledge Infrastructure
CNU	Congress for the New Urbanism
CNUM	Chinese Network of Urban Morphology
CyNUM	Cyprus Network of Urban Morphology
EPFL	École Polytechnique Fédérale de Lausanne
GIS	Geographical Information Systems
GPS	Global Positioning System
IGC	International Geographical Congress
ISUF	International Seminar on Urban Form
ISUF-H	Hispanic Network of Urban Morphology
ISUF	Italy Italian Network of Urban Morphology
ISUF	Polska Polish Network of Urban Morphology
ITHA	Institut de Théorie et d' Histoire de L' Architecture
IUAV	Istituto Universitario di Architettura di Venezia
JCUD	Joint Centre for Urban Design
ML	Machine Learning
NLP	Natural Language Programming
NLS	National Library of Scotland
NNUM	Nordic Network of Urban Morphology
OS	Ordnance Survey
PE	Policy Exchange
POS	Plan d' Occupation des Sols
PNUM	Portuguese-language Network of Urban Morphology
SDI	Seoul Development Institute
SNUM	Serbian Network of Urban Morphology
SOLO	Structure of the Observed Learning Outcome
TNUM	Turkish Network of Urban Morphology
UK	United Kingdom

UMRG Urban Morphology Research Group
VR Virtual Reality

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Part I
Past and Present

Chapter 1

The History of ISUF and Urban Morphology



Vítor Oliveira

Abstract The origins, main developments and fundamental characteristics of urban morphology are addressed in this chapter, making evident the crucial role of the International Seminar on Urban Form (ISUF) in strengthening this body of knowledge over the last three decades. After considering the early manifestations of different morphological traditions, in the late-nineteenth and early twentieth century, and some seminal books published after the 1950s, attention is given to a sequence of events that would lead to the creation of ISUF. The Lausanne meetings and the first conferences in Birmingham, Versailles, and Florence, as well as the establishment of the journal *Urban Morphology* are examined. Two main challenges for ISUF are considered at the end of the chapter. The first is the balance between progressive globalization, after the first conference in the United States in 2001, and the emergence of several regional networks a few years later. The second challenge is the equilibrium between different generations of urban morphologists when, for the first time, the leadership of ISUF is being undertaken by researchers that did not participate in the creation of the organization in the mid-1990s.

Keywords Urban morphology · Urban form · ISUF · Historico-geographical approach · Process-typological approach · Versailles school

1.1 The Origins and Main Developments of Urban Morphology

1.1.1 Early Manifestations

The word ‘morphology’ was first proposed by Johann Wolfgang von Goethe, the German writer and thinker, who devoted part of his work to biology. Goethe used morphology to designate the ‘science that deals with the essence of forms’.

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Although it was proposed as a branch of biology, the general and abstract nature of ‘morphology’ enabled its subsequent application in many different fields.

A morphological perspective started to be applied in the study of human settlements in Central Europe in the late-nineteenth century. For almost four decades of systematic research, German-speaking geographers and historians developed a consistent morphogenetic reading of town plans, tracing the evolution of forms in terms of their underlying formative processes. Otto Schlüter and Walter Geisler were two of the most influential researchers in this period. Schlüter proposed a morphology of the cultural landscape, focusing on the urban landscape as the main object of research. Geisler’s work combined a ‘general’ comprehensive classification of German towns (sites, town plans, and building types) with the ‘particular’ and detailed analysis of one city, Danzig (Fig. 1.1). From the mid-1910s to mid-1920s, Hugo Hassinger, Hans Dörries, and Hans Bobek also made significant contributions to this morphogenetic tradition (Heineberg 2007; Hofmeister 2004; Whitehand 1981 1987).

The background of another important morphological tradition can be found in Italian architecture in the early twentieth century. In this tradition, urban morphogenesis is not only fundamental to the description and explanation of urban form and its change over time but is also key to assuring continuity of new architectural and planning projects. At the centre of this tradition is the concept of type as an abstract representation of several concrete objects sharing some fundamental characteristics. Gustavo Giovannoni was one of the most influential authors in this period. He systematically explored the relationship between new and old buildings, and between new expansions and existing urban tissues, in a view of the town plan as a palimpsest (Marzot 2002).

Throughout the first half of the twentieth century, further urban morphological studies emerged in other countries and the following paragraphs briefly address research carried out in France, Great Britain, and the United States. Additional information on the early stages of the disciplinary history of urban morphology in individual countries can be found in the series ‘The study of urban form in...’ published in the journal *Urban Morphology* (see, for instance, the latest review on Iran by Abaee 2022). Furthermore, the collection can be complemented by the special number of the *Serbian Architectural Journal* on Regional Perspectives on Urban Morphology published in 2023.

In France, these morphological studies had a robust historiographical focus. Some aimed at outlining a history of planning (the ‘general’ was more important than the ‘particular’), being mostly concerned with planned cities and devaluating ‘less planned’ settlements. Other studies were topographical histories of individual cities (in these cases, the ‘particular’ was more important). The work of Pierre Lavedan is an example of the first line of research, while the studies of Marcel Poëte and Raoul Blanchard illustrate the second (Darin 1998).

The early manifestations of urban morphology in Britain started in the 1920s and were mainly descriptive. HJ Fleure and RE Dickinson were two of the most relevant researchers, the first working on the form of European towns, the second on the urban form of towns in particular regions of England (Larkham 2006; Whitehand 1987).



Fig. 1.1 Danzig (Gdansk): map (a) and aerial view (b). Source Geisler (1918), Google Earth

In the United States, two distinct strands can be identified after the 1920s. The first is a cultural geography strand, sharing similarities with rural settlement geography and the Berkeley school. In this strand, John Leighly authored what was probably the earliest manifestation of urban morphology in English academic publishing (Leighly 1928). The second strand was a socio-economic perspective, emphasizing land-use studies (Larkham 2015; Whitehand 1987).

1.1.2 *Historico-Geographical Approach*

In the late 1950s, there was already significant evidence of the failure of modernist planning and architecture. In just three years, five classics in urban morphology and urban studies were published. In addition to the influential books by Kevin Lynch (1960), Gordon Cullen (1961), and Jane Jacobs (1961), two morphological masterpieces that would be at the core of two schools of morphological thought were published—the studies on Alnwick, by MRG Conzen (1960), and Venice, by Saverio Muratori (1959).

The work of MRG Conzen was clearly influenced by Central Europe's morphogenetic tradition. MRG Conzen emigrated to Great Britain in the 1930s and in the mid-1940s he started teaching in what would become the University of Newcastle upon Tyne. In *Alnwick, Northumberland: a study in town-plan analysis*, MRG Conzen established one of the most comprehensive frameworks, that had been proposed so far, to understand the physical form of cities. This framework includes both the functional and morphological dimensions of the city/town, first exploring its economic and social significance in a regional context, and secondly analysing the townscape as a combination of town plan (streets, plots, and the block-plans of buildings), building fabric, and land uses—Fig. 1.2. In the morphological analysis of the townscape, the town plan has priority as it constitutes the structure for the other man-made features, linking these with the physical site, and the past existence of the town. While focusing on the town plan, the analysis links up with the building fabric and land uses, that together form a complete analysis of the landscape (MRG Conzen 1960).

The analysis of Alnwick revealed how streets, plots, and buildings are combined in different ways in distinct areas of a settlement. The uniqueness of each combination is based on site circumstances, and it establishes a measure of morphological homogeneity. Each distinct combination represents a plan unit. The analysis of homogeneity takes place at distinct levels or orders—in Alnwick, plan-divisions were grouped into four distinct orders. The plan unit is a key concept of MRG Conzen's framework. This would be further developed in the studies that followed. It was in the first study of Ludlow that MRG Conzen moved from plan units to morphological regions, incorporating the building fabric and land uses in his urban landscape analysis (MRG Conzen 1975).

Another important concept in the process of urban development, explored in Alnwick, is the fringe belt. The fringe belt is a belt-like zone originating from the temporarily stationary or very slowly advancing fringe of a settlement and composed of a characteristic mixture of land-use units initially seeking a peripheral location. It is a region that derives its unity, not from homogeneity of form as other regions but, from certain common factors that influenced its original location. In settlements with a long history, the geographical result of major urban dynamics is often a system of successive concentric fringe belts separated by residential regions.

In the years following, our knowledge on fringe belts was significantly expanded. Jeremy Whitehand extended the geographical scale and scope of fringe belts and,



Fig. 1.2 Mediaeval Alnwick: street system and plot patterns. Source MRG Conzen (1960)