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The typological plan of Zaragoza for the typological process of the medieval city

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Abstract

Studies on the formation process of building types delineate a long term transition in the form of the city. The findings of the excavations done in Palmyra and Bet Shean have revealed that the transition from the late Roman period to the Umayyad one happened with strong continuity of the built environment (Raymond, 2008). The evolution of building types has been expounded by Caniggia (1979) in Naples as the formation of courtyard houses over the Roman Domus substrata. Meanwhile, no trace of transition from Roman Domus was found in parts of central Italy (including Rome), southern Italy (excluding Naples), and Provence (Petruccioli, 2008). This paper aims to describe the typological process subsistent in the development of medieval Zaragoza with reference to the forces shaping the building blocks and their organization. The city of Zaragoza was founded by Caesar Augustus as a colony after the victory of the Roman Empire in the Cantabrian Wars in 14 BC on the site of an Iberian city named Saldube. In the VIII century, the Roman city was included in the Umayyad caliphate. Previous theoretical reconstructions based on archeological evidence cast the urban tissue of Caesar Augusta into a grid plan with special buildings and courtyard houses as the leading residential type. This study evaluates the territory as a historically identified organism (Strappa, Carlotti, Camiz, 2017) by mounting the individual building survey plans done by Dionisio Casañal y Zapatero for the Geographic and Cadastral Institute of Zaragoza in 1911 into a typological plan in order to individuate the typological process within the medieval city.

Keyword: *typological process, typological plan, medievalisation*

Introduction

Caesar Augusta, a free colony on the site of former Iberian city Saldube, founded by ancient Iberian tribe Sedetani, is situated in the district of Edetania which is housing fifty-five nations Pliny the Elder (AD 23- AD 79). The city was founded by Caesar Augustus after the victory of Roman Empire in the Cantabrian wars in 14 BC. In 5th century AD the city was captured by the Visigoths. In 8th century the city became a caliphate with conquest of Umayyads under name of Saraqusta. Until Alfonso I of Aragon conquered the city in 1118 the city was under rule of different Muslim Arabic and Berber states. Between 756 and 1013 the city was ruled by Umayyads of Córdoba, from 1013 to 1110 by Taifa Kingdom of Zaragoza, from 1085 to 1145 under Almoravid rule, and under the Second Taifa period from 1140 to 1203. The aim of this research is to identify if these centuries under Muslim rule changed the form of the urban tissue of Caesar Augustus completely or if it is possible to identify the formation process of the city from the establishment of Roman colony.

According to Raymond (2008) the term of “Muslim” city was forged between 1920 and 1950 by the French Orientalist school of Algiers, by William and Georges Marçais and, after them, by Roger le Tourneau to define

the Arab towns. Le Tourneau wrote “nothing is more alien to a Muslim city of the Maghreb than the rectilinear avenues of a Roman city, or of a modern city. The aerial photograph of any Muslim city gives the impression of a maze or labyrinth.” (Le Tourneau, 1957). With further researches of Grabar on the territory of Muslim world from Morocco to China, and from Central Asia to tropical Africa (Grabar, 1983) the difficulty of using the concept of “Islamic” while considering the phenomena and production in various regions is clearly stated. Also the attempts to search for elements in the Quran or in Muslim tradition, have not resulted with general prescriptions about the protection of private life or the constraints of neighbourhood (Raymond,2008). The only significant text found about production of space is the oft-invoked hadith of Muslim: “If you are in disagreement about the width of a street, make this of seven cubits” (Hakim, 1986). After finding out the distinctive criterions that was thought to be particular to Muslim towns such as irregular road system and the cul-de-sac (found in the ancient East), the house with central courtyard (also found in Antiquity) and the division of the city into quarters was also found in different areas of the world, Eugen Wirth (1982) concluded that the suq, the central business district is “the only and fundamental distinctive criterion for the Near Eastern City which can be considered as Islamic cultural heritage.” Considering the Roman town Caesar Augusus underneath the Muslim Saraqusta and contemporary Zaragoza, illustrating the formation of quarters requires the understranding of the territory in long term.

Background

The school created by Saverio Muratori in Italy took active study of the region as a historically identified organism in the 1950s (Strappa, 2016). The main idea of this school (typo-morphology) was that all forms of the territory and city are the result of a process, of the progressive, systematic association of the parts, and that it only makes sense to break it down and investigate its components if we consider its essential unity and indivisibility (Strappa, 2016). Caniggia and Maffei used the term typological process to describe the progressive differentiation of building types within a cultural region (Caniggia & Maffei, 1979). The progressive variations and adaptations of existing buildings are the cause of the change in type. During the medievalisation process, builders who built on top of old ruins and using spolia (remnants) from ancient ruins regarded those remains as materia signata, or designated matter (Strappa,2018). After losing its significance, it is being transformed into a base which man consciously acknowledges, he starts transforming and adapting it to his living requirements, to a substratum (Strappa, 2016). Substratum provides the foundation for new structures. The elements that formerly belonged to a structure lose their bounding relationship of purpose as time passes, and the continuity between many periods of change and development gives individual personalities to the new creations that emerge from that foundation. The city of Zaragoza, like Rome and Florence (Petruccioli, 2007, Caniggia & Maffei, 1979), has its own set of measurements.

Strappa (2018) defines the ‘substratum type' as the recurrent typical form that emerges from a group of characters that has been transmitted. The findings of the excavations at Palmyra and Bet Shean revealed a

continuous transition of forms from the late Roman to the Umayyad periods (Raymond, 2008). In modern Naples, Caniggia (1979) described the change of type as the construction of courtyard homes from the Roman domus substrata. Meanwhile, no evidence of the transition from Roman domus to current house type of the region has been discovered in parts of central Italy (including Rome), southern Italy (excluding Naples), and Provence (Petruccioli, 2008), but Lucio Barbera discovered a case of transition from Roman domus to medianum house in Ostia Antica (2018). When the street crosses through the courtyards, the Roman domus becomes a substratum, resulting in four medianum houses, a diachronic variation of type. The typographical plan of Zaragoza was utilized in this study to locate the substrata underneath medieval tissue that has been transformed into patio houses in time.

Methodology

The engineer and topographer Dionisio Casañal y Zapatero was authorized by the Zaragoza City Council in 1907 to draft the general plan of the city for the Hispano-French Exhibition the following year. His early enlargement plan, which he drew in 1905, was not accepted. With the permission of the Zaragoza City Council, Casañal published a 1:5000 scale plan of Zaragoza in 1908. This plan was a revised version of work completed between 1880 and 1899, focusing on the historical center and emphasizing the plan's commercial and advertising purposes (Abadía & Pardo, 2014).

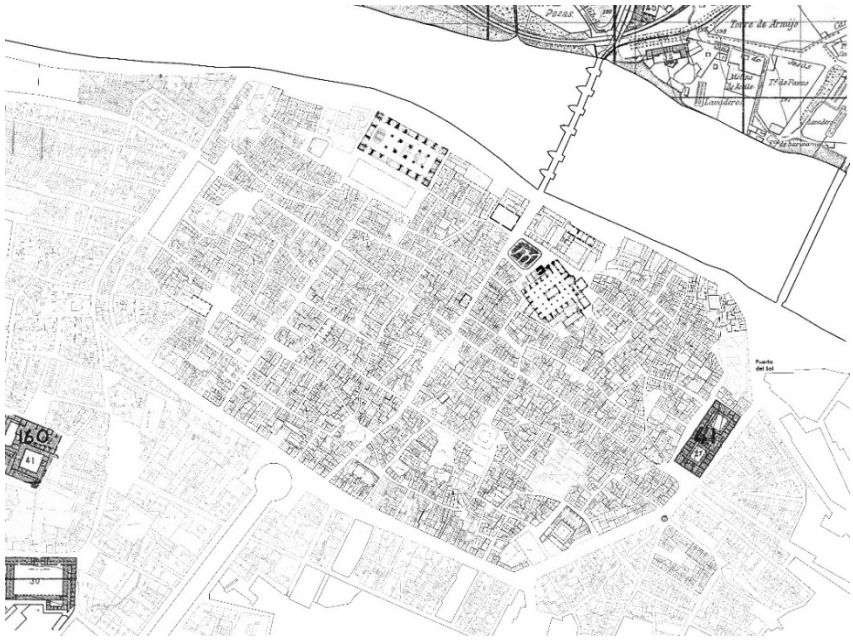

Figure 1. Typological plan of Zaragoza, prepared by the author.

The goal of this study is to look at how the presence of urban substrata affects variations in the base type. The floor plans derived from the archive of the Geographic and Cadastral Institute of Zaragoza done in 1911 by Dionisio Casañal y Zapatero are placed in the borders of relevant lots for the preparation of the typological

plan of the city (Figure 1), and later this plan has been investigated according to the typo-morphological approach.

Results and Discussions

In the Iberian Peninsula, Andre Bazzana (1992) recognized two types of patio houses: one that is "block-like" and the other that is "attached." The difference between the two kinds, according to Bazzana, may be explained by family economies: the outside courtyard was used by semi-nomads, while the inside courtyard, modeled after the ksar of the Sahara, was initially occupied by sedentary farmers. “Such a schematic analysis is doubtful,” says Petruccioli (2008), “because it is done at an insufficiently low level of typological specifity.” Homes with two side-patios, two centered-patios, or both with a side-patio and a centered-patio may be found in Zaragoza, regardless of whether the building plot is regular or irregular. There are houses with two side-patios, two centered-patios, or both with a side-patio and a centered-patio. According to the typological plan, regardless of the shape or location of the construction plot, the patio home can have a centered-patio or a side-patio.

Figure 2. Typographical plan of Zaragoza based on surveys of Dionisio Casañal,1898, superposed with remains of theater (El Teatro De Caesaraugusta, Estado Actual De Conocimiento, Miguel Beltrán Lloris, 1993) by the author.

The variance in location of the patio does not support a diachronic continuation from the courtyard home, which began at the "critical moment when in a precursor an area around a mono-cellular unit was marked off by an enclosing wall" (Petruccioli,2008). Rather, the irregularity of floor layouts and the size of building blocks show that the city still carries the characteristics of the Roman colony. The typological plan demonstrates that irregularities in the urban tissue are limited by road direction changes rather than internal organization or caused by the existence of the substrata (Figure 2). The patio houses emerged from the substrata of the theater of Caesaraugusta demonstrates that it is necessary to consider the form of Roman colony in the process of identifying building types.

Figure 3. Hierarchy of paths in Zaragoza by the author.

Analysis of the hierarchy of paths revealed some of the buildings are not constructed perpendicular to breakthrough routes, but their façades are perpendicular (Figure 3). Further examination of the dimensions of the building blocks reveals a degree of resemblance between them and brings the possibility of reuse of the remains of Roman domus. The junction of decumanus maximus and the boundary given by the ruins of the Forum area was used as a starting point. The location of the severs was used as a reference for the placement of the pathways in Caesar Augustus' street grid, which had dimensions of roughly 34 meters north-south and 66 meters east-west. The ruins of the Forum area offer a limit for the possible location of a Roman domus. The north-south length of the block (34 meters) allows the construction of a Roman domus with a long side perpendicular to the decumanus, while the width of the block (31 meters) allows for the construction of two more Roman domus in the same direction (Figure 4).

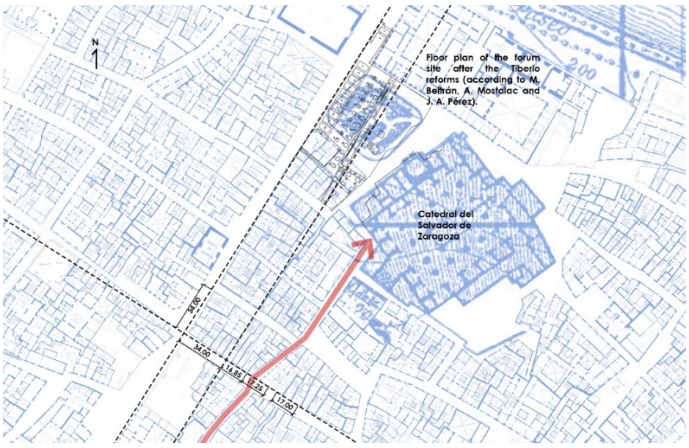

Figure 4. Dimensions and limits of the building block between decumanus and forum area, prepared by the author.

The street Calle Diego Dormer, which runs from decumanus (Calle Mayor) to the mosque, has the features of a reconstruction road (Caniggia & Maffei, 1979). The buildings on the left side of Calle Mayor have perpendicular walls, but their front facades are parallel to Calle Diego Dormer. Two buildings on the right

side have walls that are perpendicular to Calle Diego Dormer, whereas their adjoining building's wall is perpendicular to Calle Mayor. The buildings on the left were constructed before the construction of Calle Diego Dormer, whilst the buildings on the right were constructed in an empty area between the road and the buildings in the east.

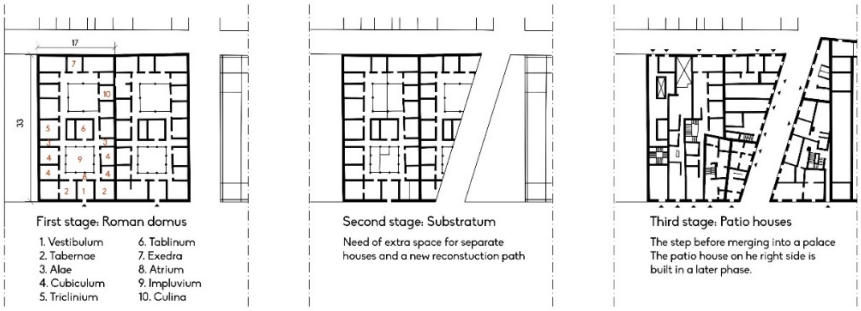

Figure 5. Hypothetical reconstruction of the ancient tissue between decumanus and forum area, prepared by the author.

The hypothetical reconstruction shows two Roman domus located perpendicular to decumanus (Figure 5). These structures were used as foundations for new buildings throughout the medievalisation era, and the fragments were used as building materials. While the domus on the left was divided into four new long plots, the domus on the right was encroached by a road and new structures. There is no given evidence of this hypothetical transition, therefore a Roman domus which was a part of extension of the Roman city outside of the walled medieval core was discovered on Calle Añón (Beltrán Lloris, 2008).

Another example of a possible partition of the plot of Roman domus into an insula with buildings for different purposes is identified in Colonia Celsa (Beltrán Lloris, 1991). The dimension of the wall perpendicular to road (35 meters) looks as if a domus was divided into four separate buildings (Figure 6).

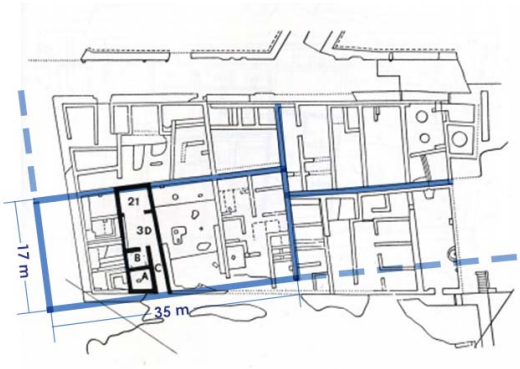

Figure 6. Dimensions of the insula, Colonia Celsa, following Beltrán Lloris, 1991.

The partition of the plot of a domus in 5th-6th century onwards was also observed by Alba Calzado (1997) in Augusta Emerita. In that example the plot of a Late Roman house with a bathing facility encroaching into street was reused for multiple subdivided houses. According to Osland (2017) many of the houses that were

demolished in the second quarter of the fifth century (before c.440) appear to have remained unoccupied until the third quarter, when new buildings developed across Augusta Emerita. He states that in Emerita around the fifth century, the Late Roman house lost its centrality to the institutions of public and private life. This seemingly little change, from big, well-decorated mansions to utilitarian residences with only a few rooms, reflects a profound cultural transition, hinting to deeper currents in the expression of identity and status throughout the time (Osland, 2017). Such division of plot requires allotment of land ownership, which might be the result of a new law between Romans and Visigoths. In Lex Romana Visigothorum, Book X, VIII. Concerning the Division of Lands Made Between Goths and Romans, stated, "… no Roman shall take, or claim for himself, any part of the two thirds of said land allotted to a Goth in said division; nor shall any Goth dare to seize, or claim for himself, any of the third part of said land allotted to a Roman…" (ed. S. P. Scott).

Conclusions

The hypothetical reconstructions of patio house depicted in this article are the first stage towards re-establishing the hypothetical urban tissue within the city walls. They demonstrate the potential of long-term transitions in city form, not just in abandoned towns where excavations have revealed the transition of forms from the late Roman to the Umayyad periods. Further studies can examine the curvilinear roads and paths rotated at a different angle than the rest of the tissue to see if they indicate the disappearance of some buildings or a town square. After reconstructing the entire tissue with the findings of this study, further studies can examine them through the typological plan of the city.

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Edited by

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Urban Design Studies Unit
Department of Architecture
University of Strathclyde

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Foreword

Dear Authors, esteemed Readers,

It is with deep satisfaction that we write this Foreword to the Annual Proceedings of the XXVIII International Seminar on Urban Form held virtually in Glasgow, United Kingdom, between June 29th and July 3rd 2021.

When, at the closing of ISUF2019, the Urban Design Studies Unit at the University of Strathclyde in Glasgow (UK) was announced as the host of the XXVIII International Seminar on Urban Form, the world was indeed very different from what, in just few months, we all came to know, and in ways which, at the time, we could not possibly imagine.

Due to the protracted impact of the Covid-19 pandemic and related restrictions to travel and in-person gathering, we found ourselves to forfeit our plan to host the conference in our beautiful and welcoming Glasgow and, very much like our colleagues in Salt Lake City, to deliver the event as fully online instead. We were truly sorry not to be able share a drum of Single Malt Scotch Whisky, have you taste Scottish haggis neeps and tatties, or take you for a spin at an evening Ceilidh in our Dear Green Place. In addition to this, just few days before the opening of ISUF2021, we were shocked and saddened by the unexpected loss of Emeritus Professor Jeremy Whitehand, founding father of ISUF, leading scholar, inspiring educator, and dear friend to many.

But despite the odds being stuck against us, and while our community is still mourning this great loss, we believe we achieved the feat of delivering a thought-provoking and engaging event, continuing the long and prestigious tradition of the International Seminar on Urban Form, while also doing our best to remember and honour Professor Whitehand as he deserved.

A difficult goal, this one, that we could achieve only thanks to the valuable experience of our colleagues in Salt Lake City, the involvement of a formidable team of colleagues and students who volunteered their time to help through all the phases of this complex event and the guidance of the ISUF Council and, to Jeremy himself who, with his meticulous and impeccable planning, granted all of us a once in a lifetime opportunity to have him at ISUF2021 after all and in many different forms, through the voices of his fellow scholars and, quite extraordinarily, through his own recorded voice.

We were able to reach a wide audience of over 370 delegates presenting and attending from some 52 countries around the world, allowing us to bring urban morphology and its values to new colleagues and friends, as well as to audiences that would not have been able to join us in Glasgow, or that would normally not consider attending a conference. We held a total of 95 sessions - including keynotes, round tables, opening and closing sessions - each moderated by a chair and supported by a host, for over 230 hours of live content. All the sessions were also recorded and made available to conference delegates for a period of 60 days after the conference, allowing people attending from different time-zones to listen to each and every one of them at their own pace. Surely, we missed informal gatherings, tours, meals, and parties but we did our best to give all delegates the best of the Scottish hospitality, through virtual walking tours prepared and delivered by current and former students of the Department of Architecture at the University of Strathclyde and lectures delivered by representatives of the Glasgow City Heritage Trust.

And now, after little over six months from the end of ISUF2021, we are finally able to release to the public the Annual Conference Proceedings of the XXVIII International Seminar on Urban Form: “Urban Form and The Sustainable and Prosperous City” a work curated by Dr Alessandra Feliciotti and Dr Martin Fleischmann. The contributions collated in this edited book illustrate the great variety of research streams investigated within ISUF and represent the heterogeneous geographical distribution of contributions, both telling aspects of this florid and growing interdisciplinary field, characterised by deep solid roots as well as vigorous far-reaching branches.

We believe these Proceedings will provide urban form researchers and practitioners of the world with an excellent reference book on the latest advances in the broad area of urban morphology, stimulate new connections and research partnerships, and be an impetus for further research.

We thank all authors and participants for their contributions.

Dr Alessandra Feliciotti

Conference Organiser of ISUF2021

Urban Design Studies Unit (UDSU)

Department of Architecture

University of Strathclyde

Dr Martin Fleischmann

Geographic Data Science Lab

Department of Geography and Planning

University of Liverpool

Preface by ISUF2021 chair

The 28th ISUF Conference was organised by the Urban design Studies Unit at the Department of Architecture of the University of Strathclyde in Glasgow, from the 29 of June to the 3rd of July 2021. The weather was excellent in Glasgow in those days, with a daytime high of around 20 degrees Celsius and no rain throughout. Too bad we could not enjoy it, for all the good reasons that travelling had been a question mark all year round and despite all our commitment we just could not take any other decision than going fully online. Which we did, and it was a dizzy jump into the unknown for us all. Things got sorted out, eventually, and in style, thanks to Alessandra and Martin and all our incredible folks here at UDSU, the Department of Architecture and the University at large, ISUF's support and the enthusiastic contributions of splendid guests who committed themselves to enrich the environment of the conference – though virtually – with invaluable and unreplaceable insights of the real place.

We decided to focus on "Urban Form and the Sustainable Prosperous City". The more we study cities, the more we realise that their form is never neutral. On the contrary, space is active: how it interacts with social, economic, environmental and economic systems, is central to their success. On urban form also depends cities' capacity to be and remain successful and engaging in time. Form is central across all scales of urban systems and we are at a stage in which our capacity to study social, economic and environmental systems can be related to the analysis of urban form like never before. Furthermore, new technologies, as well as new interpretative frameworks that put time and resilience at the heart of cities' life, have grown in clarity and capacity over the past years, helping immensely our understandings of these complexities.

Theories, methods and practices in the study of urban form were explored in the conference, with two special focuses proposed: "The resilient city: ecological perspectives in Urban Morphology" and "Urban Morphology for SDG 11". Sustainability and resilience are terms often used interchangeably, while they can be regarded as complementary in capturing both normative and descriptive aspects of change. As associated to urban form, these terms are still open avenues of research as well as promising areas of growth in the ability of urban morphology to further inform urban policy and practice.

Urban morphology is an inherently multi-disciplinary field of research, and each of its many convergent strands of knowledge brings its own set of tools and practices. To the foundational backbone of the discipline, still solidly developing around the Conzenian and Muratorian historico-geographical and morpho-typological living traditions, as well as to the more recent space-syntax quantitative-configurational approach, new impulses have been shaping up in the last few years that have conspicuously marked their presence in this 28th edition of the ISUF conference: these are quantitative approaches building on geographic data science, which rely on advanced techniques of data processing to push the boundaries of large-scale analysis to unprecedented levels, and – even more importantly – without compromising the richness of information. Which is fundamental: urban morphology's core-scale, that of the building/plot, street and neighbourhood, requires information at that scale. That is why other quantitative methods that look at the form of the city as a whole, or beyond to the metropolitan or regional forms of urbanisation, have always struggled to fit in, and contribute to, the development of urban morphology. The unprecedented flood of papers in this area of studies characterized the event. They also seemed to seamlessly and even delicately find their own place and meaning in the rich flow of the urban morphology discourse, building on – and making value of – its quantitative side. In fact, "metrology" studies of urban form have always been part of the discipline since its very foundations in the 1960s. This was also the focus of Jeremy's own contribution to the round table at the conference, entitled "Urban Morphometrics in Urban Morphology: Disciplinary Roots and New Perspectives", where he explored these roots drawing them back to the inter-war period and Herbert Louis' precursory studies at the Geographical Institute in Berlin. A young geography student at that time in Berlin, MRG Conzen was there in attendance before leaving to Britain in 1933. This red thread of urban morphology metrology studies is now quite clearly evolving into novel "morphometric"

methods of reading and understanding urban form, under the impetus of new technologies, processes and large-scale, fine-grained geo-data.

Jeremy would have liked to bring this point of view in person to the round table, with his usual crystalline open mindedness and genuine generosity. We'll miss him dearly.

Prof Sergio Porta

Chair of ISUF2021

Urban Design Studies Unit (UDSU)

Department of Architecture

University of Strathclyde

Preface by ISUF Presidents

Over the last three decades, since ISUF's first meeting in Lausanne in 1994, our knowledge about the physical form of cities has substantially increased. Today, we know more about the different elements of urban form, how these are combined generating different patterns, and how these are shaped by different agents and processes over time. We also have a better understanding of urban form's influence on the social, economic, and environmental dimensions of our cities. Multiple concepts and methods as developed by founding scholars such as M. R. G. Conzen, Jeremy Whitehand, Saverio Muratori and Gianfranco Caniggia have proven to be quite effective in describing and explaining urban form, resulting in their widespread adaptation by urban morphologists today. Examples of these foundational tools for urban studies include town-plan analysis, fringe belts, morphological regions, typological processes, basic and special buildings, poles and nodes, to name just a few. Findings surrounding applications of morphological existing methods coupled with new tools for urban analysis continue to evolve further enriching our interpretations of urban environments. We realize how street systems can influence movement, social interaction, and the location of economic activities. We use new geometries and new mathematical models where agents have a key role and where the different elements of the urban landscape can be transformed into cells, enabling the simulation of alternative scenarios of development.

While the early years of an organization are challenging by nature, for ISUF the last five years brought unprecedented challenges. The organization of our annual conferences was first faced with significant political barriers in a world with so many authoritarian regimes. It is with great sadness and concern that we see Ukraine being invaded by Russian forces at the time of writing this Preface. On the other hand, since early 2020 the Covid-19 pandemic has completely changed our lives. And yet, between 2018 and 2020, Irina Kukina, Nadia Charalambous and Brenda Case Scheer have successfully overcome these tremendous challenges, offering us three enlightening conferences in Krasnoyarsk, Nicosia, and Salt Lake City (online conference). As the pandemic has continued to inhibit in person gatherings and international travel, the organizers of the Glasgow conference have exhibited resilience by offering ISUF's second fully online conference.

One day after the 2021 meeting of the ISUF Council, and two days before the official opening of the Glasgow conference, we were shocked to learn of Jeremy Whitehand' sudden passing. Until the last weeks before the conference, Jeremy was working with us on a Task Force on Teaching Urban Morphology, on two special sessions (on the relation between research and practice, and on quantification in urban morphology) and on a keynote speech for this conference entitled 'The nature of urban morphology' (Whitehand, 2021). Jeremy was central in the creation of ISUF in the mid-1990s, and he has always been at the centre of our organization over the last three decades. He organized two conferences – the first open event in Birmingham, in 1997, and the Newcastle / Glasgow conference, in 2004, together with Michael Barke. For over almost 25 years he has edited with singular rigor the journal 'Urban Morphology'. Jeremy's legacy (see Oliveira, 2019) will always be part of our organization and of our morphological research.

Two generations of notable and committed researchers based at the University of Strathclyde collaborated over the past two years to organize ISUF 2021. They include Sergio Porta, Alessandra Feliciotti, Ombretta Romice and Martin Fleischmann. This book of proceedings, as the conference itself, is framed by the on-going debate about the role of urban form in creating sustainable and prosperous cities. Sergio and his colleagues propose a fourfold structure for debate including four main themes that are fundamental for ISUF and for urban morphology as a field of knowledge. Theory and method are the first and second of this set. Urban morphologists should be able to establish an open, but coherent, body of theories and methods for understanding the structure and functioning of cities. In addressing these two challenges, we must find a common ground, allowing each one of us to learn from each other, while maintaining the specificity of his own work. The third theme is practice. We must continue to search for effective ways of moving from morphological research to practice in planning,

urban design, and architecture. In this task it is not enough for urban morphologists to simply assert their relevance and claim that they could play a part, if only they were asked (Barke, 2021). It is not enough to create single events of interaction; we must create effective processes, involving many moments for researchers to understand and engage into real practice, and for practitioners to be exposed to and get involved in research on streets, plots and buildings, and how these change over time. Finally, the Glasgow team proposes a focus on sustainability. Urban morphologists must be able to show the relevance of urban form to several key aspects of our daily life in cities, and in the design of strategies for adaptation and mitigation.

This book of proceedings is built from the participation of over 350 researchers from more than 50 countries, presenting their work in almost 100 sessions – including keynote, round tables, and opening and closing sessions – representing almost 250 hours of live contents. The publication of this book takes place in between the realization of the Glasgow (June/July 2021) and Lodz/Cracow (September 2022) conferences. We owe a debt of gratitude to Sergio, Alessandra, Ombretta and Martin for their remarkable work. The second conference, led by Anna Agata Kantarek and Malgorzata Hanzl, is expected to bring us back the possibility of meeting face-to-face to restore place-based collaboration, presenting our investigation, establishing and reinforcing research networks, and visiting and exploring the physical fabrics of cities – the privileged object of morphological inquiry.

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Barke, M. (2021) 'Foreword', in Oliveira, V. (ed.) *Morphological research in planning, urban design and architecture* (Springer, Cham) v-viii.

Oliveira, V. (ed.) (2019) *J.W.R. Whitehand and the historico-geographical approach to urban morphology*, Springer, Cham.

Whitehand, J. W. R. (2021) 'The nature of urban morphology' (prerecorded video), *28th International Seminar on Urban Form*, Glasgow, 29 June – 3 July.

Organization of the Proceedings

The Annual Conference Proceedings of the XXVIII International Seminar on Urban Form: "Urban Form and The Sustainable and Prosperous City" collates 178 papers, and 3 posters and 1 viewpoint. In keeping with the structure implemented during submission, review and presentation of individual contributions, the present book is divided into four main sections: Theory, Methods, Practice and Focus. Within each section, papers were further grouped in a number of themes, as defined below.

Section I, **Theory,** contains contributions deepening our understanding of existing morphological and typo-morphological theories, models and concepts as well as exploring new avenues of knowledge and perspectives from affine disciplines, linking them up to established or original morphological theories. Themes in the theory section include:

- **The epistemology of Urban Morphology:** retracing the evolution of a discipline and charting new research paths.
- **Towards a descriptive science of urban form:** old and new models explaining generative and transformative processes driving complex trajectories of urban evolution.
- **New trans-disciplinary perspectives in urban morphology:** new hybridisations for a holistic understanding of complex city systems.

Section II, **Methods,** looks at existing and innovative tools and procedures for the reading and understanding of urban form and its dynamics, encompassing both qualitative and quantitative approaches. Within the Methods sections, contributions are divided into the following themes:

- **Innovations in qualitative research in Urban Morphology:** methodological perspectives linking to classic Conzenian and Muratorian traditions, with an emphasis on qualitative research methods.
- **Innovations in Urban Morphometrics:** perspectives bringing new quantitative methods into Urban Morphology building on the rise of the digital age, including digital cartography, big data and remote sensing.
- **Engaging with the social, cultural and institutional discourse:** novel and original research methods capturing the interaction of urban form and human life engaging with complementary disciplinary fields.

Section III, **Practice,** looks at urban form as an active player in shaping tomorrow's cities and at the world of professional practice, policy and education. Contributions within this section address the following themes:

- **Urban Morphology for design, planning and policy:** the practical role of urban form towards the sustainable and resilient, safe and inclusive cities for all.
- **Urban Morphology, Architecture and Heritage:** preservation, reuse, valorisation of built heritage as asset for future prosperity.
- **Teaching Urban Morphology:** methods, experiences and lessons learned to shape the next generation of architects, planners, urban designers and policy makers.

Section IV, **Focus**, reflects on urban morphology in light of emergent global drivers and in relation to the wider debate on Sustainable Development and Climate Change. Contributions within this section revolve around two main topics:

- **The resilient city: ecological perspectives in Urban Morphology:** perspectives and approaches linking urban form to the overall resilience of urban systems.
- **Urban Morphology for SDG 11:** contributions relating urban form to sustainable development goal targets.

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Table of contents

The epistemology of Urban Morphology

Title	Authors	Page
Urban Architectures: a design inquiry	Fabrizia Berlingieri	25
Quantification Is Not Enough: The Analysis of The Complexity and Uncertainty of Urban Form Evolution	Yuyang Chen, Feng Song	31
Justification of the optimal landscape and planning structure of Krasnoyarsk through the study of territorial and planning development of the city	Natalia Unagaeva	39
"Transitional Morphologies" studies. An agenda for 2030 between Europe and China	Li Bao, Marco Trisciuoglio	48
THE DIALOGICAL GENESIS OF CITY FORMS	Josep Muntañola Thornberg, Magda Saura Carulla,	55
Application framework of urban morphology in planning practice: A case study of Beijing	Wencheng Yu, Ziyun Sun, Na Gao, Xiaodong Zhang	63
Continuity and discontinuity in the urban form	Paolo Carlotti	72
Camillo and Siegfried Sitte – a father-son relationship in urban planning theory	Stefan Johannes Kubin, Angelika Psenner	79

Towards a descriptive science of urban form

Title	Authors	Page
Evaluating Shanghai new towns' maturity of urban form: an exploration index based on new urban data	Dan Qiang, Yue Liu, Liwen Zhao,	89
Infrastructure landscapes: automobility and granularity in São Paulo and Detroit	Conrad Kickert, Heraldo Borges	97
Forma Quadrata Britanniae: the case of Londinium	Giancarlo Cataldi, Giulia Cataldi, Laura Visentin	107
Comparative Study of Urban Form of Colonial Cities as a Method: Case Study of Quebec and Krasnoyarsk.	Daria Belova, Paolo Carlotti	115
ON THE ORIGIN OF ITALIAN RENAISSANCE RADIO CENTRIC CITIES: A GRAPHICAL REVIEW	Ricardo Alvira	125
Study on Spatial Form Types of Industrial Remains in High-density Cities: A Case Study of Suzhou Creek Area in Shanghai	Chu Tong, Pro Zuo Yan	136
A tale of "two streets": changing land-uses and media contexts on Oxford Street, 1970 and 2019 compared	Farbod Afshar Bakeshloo, Sam Griffiths,	146
The role of sensory experience design in public spaces	Cesar Wagner	154
Urban strips: the case of two streets in Łódź, Poland	Małgorzata Hanzl, Maria Gajek	165
Healing urban tissue damages using artificial morphogenesis	Zoltán Bereczki, Éva Lovra	173
Study on the morphological evolution of Chinese urban cemeteries in the process of rapid urbanization: a case study of Nanjing	Meichen Li, Hao Deng	181
Generic tissues in the US: developing a systematic classification based on endurance.	Brenda Case Scheer	192
Adaptability of Urban Grids: Patterns of Morphological Change	Onur Tumturk, Justyna	201

Title	Authors	Page
and Persistence in Midtown Manhattan, 1884-2011	Karakiewicz, Fjalar De Haan	
Market Halls as Activators of Public Space. Barcelona's metropolitan food system	Eulàlia Gómez-Escoda, Pere Fuertes	211
Nested Networks	Urs Primas	219
Morphological characterization of landscape using context-rich geometrical features extracted from path centre lines	Karimi Kayvan, Eduardo Rico, Iacopo Neri	229
Morphological Transformation of Boston Park System During 19th Century and Its Reasons	Liu Xinyu, Wang Xiaojun	239
The Study of Urban Form as an Archipelago: The Case of Ankara	Ezgi Nur Güngör, iğit Acar, Giorgio Gasco	246
Tendencies of the city structure development (case of Krasnoyarsk)	Irina Kukina	254
A quantitative study of urban form and its spatial character	Huimin Ji, Wowo Ding	261
Urban form and socio-spatial segregation in Santa Catarina Brazilian Cities	Otavio M Peres, Renato T Saboya	269
Comparative Urban Morphological study of Rome and Leuven	Jiayao Jiang	282
Fringe belts structure and transition economy: morphological patterns and present-day changes. A case study of Krasnoyarsk, Russia	Elena Logunova	290
Regenerative design processes in urban morphology	Marco Maretto, Chiara Finizza, Alice Monacelli,	296
The influence of urban design practice in the transformation of the built environment of Montreal: the contribution of three recent projects associated with sustainable development	Francois Racine	306
The pattern in The social logic of space (1984) and in A Pattern Language (1977).	Adriana Nascimento, Ana Cristina Faria	315
Plan by evidence: targeting territory's talents	Giorgio Amadei, Alessandra Feliciotti, Davide Nicolini	323
The Influence of Water Form on Urban Fabric – A Case Study in Nanjing Baguazhou	Ying Liang, Quan Liu	338
Measuring variations in streetscape skeletons under zoning regulations of the building coverage ratio: a theoretical approach	Hiroyuki Usui	346
Analysis and Modelling of the Multilevel Transport Network: The Metro and Railway System in Grater London	Po Nien Chen, Kayvan Karimi	354
Earth Observation + Morphometrics: towards a systematic understanding of cities in challenging contexts	Jiong Wang, Martin Fleischmann , Alessandro Venerandi ,	363
Nonlinear relationship between the urban form and street vitality: A data-informed approach involving twelve Chinese cities	Yun Han , Yu Ye , Chunpeng Qin	371
Towards a Quantitative Approach to Morphological Regions in GIS	Mariana Diniz, Miguel Serra	381
Towards A Sustainable Urban Form: A Comparative Analysis on Urban Regeneration between Crewe (UK) and Barahona de	Mazin Al-Saffar, Antonio Blanco Pastor, Zhale	391

Title	Authors	Page
Fresno (Spain)	Tezer,	
Evolution of the Block Morphology: Comparative Case Study of the Block Scale Between Chinese Megablock and Other Area	Yixuan Peng, Darren Nel, Gerhard Bruyns, Ping Wang,	399
A study on the urban form of landmark buildings in Shanghai based on visual preference evaluation	Mengmeng Zhao, Jian Zhang, Jun Cai	406
The Compact City and Contemporary Urbanization Processes: Discussing Alternative Interpretations of Urban Compactness	Henry Endemann, Gerhard Bruyns, Joern Buehring	414
A Parametric Urban Design Model to Optimize Life Cycle Carbon Footprint of Green Open Spaces	T.M. Leung	424
Urban Transformation of Fotang Town in the Recent 20 Years — A sample in Small City Fostering Program of Zhejiang Province, China	Jia Li, Xiaoling Dai	432
Preference and visual texture as a measure of performance: articulating the principles of biophilia.	Jon Cooper, Karl Kropf, Gholamreza Oskrochi	443
Analysis and classification of open public spaces, a method using perception and measurable indexes	Hortênsia Maia, Daniel Cardoso, Aléxia Brasil	451
Vulnerability and Resilience: A Framework of Development for Poor Urban Communities	Hassan Zaiter	459
Understanding Form beyond Form-alization: Problematizing the Culture of Teaching [Urban] Form in the Design Studio	Abu Talha Farooqi, Simran Raswant	467
The “hidden” city: morphological developments and knotting phenomena in the commercial fabric from the passage to the mall	Marco Falsetti	477
Hong Kong as a contemporary laboratory for the future scenarios of vertical growth	Pina Ciotoli	486
Agency in the formation of West Lake Landscape: the governance of Hangzhou 1949-2006	Luchuan Deng	495
Increasing level of detail of buildings for improved simulation of 4D urban digital twin	Dimitri Bulatov, Marie May, Eva Strauß, Francesco Mancini,	503

New trans-disciplinary perspectives in urban morphology

Title	Authors	Page
Transforming Slums Through Urban Intensification	Khalafalla Omer, Athina Moustaka, Gregory Watts	514
Incremental production of the informal urban landscape: A typology in intermediate cities of the Peruvian coastal area	Stella Schroeder, Elizabeth Abanto Sánchez	526
Balancing Urban Security, Accessibility and Urban Quality in ‘Heritage Open Space in Transformation’	Dimitra Babalis	534
The Visual Structure of Fictional Space in Video Games: A wayfinding research in games based on real world cities	Kahraman Eskidemir, Ayse Sema Kubat	542
Reading the change in local urban forms under global processes. Towards the definition of a hybrid lens	Zeynep Tulumen	551

Title	Authors	Page
Trans-disciplinary perspectives between people and environment: a case study of open public spaces in Rio de Janeiro	Diego Crescencio, Patricia Drach	560
How urban form influence urban heat island: perspectives and strategies from different scales and disciplines	Xiao Wei, Xiaojun Wang	568
Exploring the Relationship between Compact Urban Form and Green Infrastructure	Lixu Liu, Falli Palaiologou, Robert Schmidt-III	576
City Information Modelling (CIM) - Morphological conceptualizations and digitizing urban design practices	Todor Stojanovski, Hui Zhang, Christopher Peters,	584
Intelligibility of French historical towns: assessing the impact of 19th century urban interventions.	Alice Vialard	598
Urban morphology in support of disaster risk reduction: toward theory and methods for a spatial approach to tackling urban vulnerability to earthquakes.	Monia Del Pinto, Falli Palaiologou, Ksenia Chmutina,	610
The microclimate performance of urban form: A quantitative morphological approach	Daniela Maiullari, Marjolein Pijpers-van Esch ,	625
Tourism-boosting Rebuilding of Historic Buildings and Urban Form: The Case Study of Yanghe Tower and Its Urban Morphology in Zhengding, China	Qian Liu, Laura Pezzetti	634
Horizontal densification: portraits of alternative cities	Domenico Chizzoniti , Elisa Maruelli	642
Built form and cultural identity: Exploring spatial information to understand different spatial cultures	Vinicius Netto, Edgardo Brigatti, Caio Cacholas	650
Thinking places: towards application of place-based GIS in urban morphology	Liudmila Slivinskaya	658
Urban landscape in relation to building cycles and bid-rent curves.	Sigríður Kristjánsdóttir, Lúðvík Elíasson	664
Integrating energy and wind performance reasoning in urban form type design for an educational district in Singapore	Ekaterina Vititneva, Zhongming Shi, Pieter Herthogs,	670

Innovations in qualitative research in Urban Morphology

Title	Authors	Page
Assessing urban grain fineness and density potential – A case study for Korean urban regeneration	Emilien Gohaud, Thorsten Schuetze	679
Cyclical inversion of limits and centres: the formation process of the Regio quartadecima, Constantinople	Alessandro Camiz	687
The form of the informal: a type-morphological analysis of the urban fabric of Paraisopolis favela	Alessandro Tessari, Angelica Benatti Alvim	695
The Morphological Evolution of High-rise Residential Building Plan in Shanghai under Urban Social Changes	Dixin Zhang, Yong He, Chenchen Jia , Weiran Wang	703
The typological plan of Zaragoza for the typological process of the medieval city	Özge Özkuvancı, Alessandro Camiz	711
The Invisible Morphology of the Loss: Convergence of urban forms and divergence of ecology	Ezgi Küçük Çalışkan, Özge Sivrikaya, Görsev Argın, İrem	719

Title	Authors	Page
	Kurtuluş	
TYPOLOGY, TOPOGRAPHY, TECTONICS. Urban forms in transition	Rossella Gugliotta, Marco Trisciuoglio	728
Grounded patterns: creating a socio-spatial language for residents' participation in cohousing landscapes.	Aimee Louise Felstead, Kevin Thwaites	732

Innovations in Urban Morphometrics, digital cartography, big data and remote sensing

Title	Authors	Page
Exploring urban street types and their impact on spatial people's aggregation in Nanjing	Mingyang Lu, Ye Zhang	746
Evaluation of the Quality of Life. Case Studies of Modernist Housing Estates in Baluty, Lodz	Jakub Misiak, Malgorzata Hanzl	755
Anatomy of the Critical Urban Mixedness: the Barcelona Eixample Grid during the Lockdown 2020	Eulàlia Gómez-Escoda, Carles Crosas	768
Mapping Transitional Urban Forms From Afar	Ana Ricchiardi	776
Remote Sensing the Urban Sprawl in South Korea: The Effects of Sprawl on Spatial Inequality	Jihun Mun, Saehoon Kim, Jae Seung Lee	786
Exploring the Urban Form of Qom (Iran) at the Local Scale: Movement-Activity Pattern versus Network Centrality	Vahid Zamani, Mahmoud Ghalehnoee, Mahmoud Mohammadi	794
Is illegal dumping associated with some urban designs? Evidence from Fix My Street data, Brussels.	Madeleine Guyot, Isabelle Thomas, Sophie O. Vanwambeke	802
Urban density, accessibility, and proximities: Mapping and understanding the relationship between urban densities and cycling accessibility to grocery shops in the 10-minute city in the context of Stavanger metropolitan area	Todor Kesarovski, Fabio Hernández Palacio	810
Twin-cities over the Messina Strait: a discussion on Reggio Calabria and Messina road-networks linkage.	Diego Altafini, Andrea da Costa Braga, Valerio Cutini	821
Typological research on the spatial forms of small towns in the Pearl River Delta, China	Shuya Yang, Yinsheng Tian	829
Land plot data usage for urban transect zones delimitation in case of Tula	Dmitry Boyko, Alexander Zuev, Danila Parygin	837
Urban digital twins, morphology and open data: an initial analysis in Madrid	Javier Barros Guerton, José María Ezquiaga Domínguez	847
Ageing and Urban Form in Aix-Marseille-Provence Metropolis	Joan Perez, Alessandro Araldi , Sébastien Bridier	855
Diachronic investigation of the urban form of Qom (Iran) through morphometric approach	Alessandro Venerandi, Vahid Zamani, Sergio Porta	864
Multi-scale gridded urban morphometrics for settlement classification and population mapping	Warren C. Jochem, Andrew J. Tatem	876
The City and the Metropolis: Urban Form through Multiple Fabric	Giovanni Fusco,	884

Title	Authors	Page
Assessment in Marseille, France.	Alessandro Araldi, Joan Perez	
Classifying urban form at national scale: The British morphosignatures	Martin Fleischmann, Daniel Arribas-Bel	895
A Taxonomy of Towns: An unsupervised machine learning approach to classify towns in England and Wales.	Kimon Krenz, Alan Penn, Tasos Varoudis	906

Engaging with the social, cultural and institutional discourse

Title	Authors	Page
Risks and strategies in tackling pedestrianisation process in the development of future sustainable cities	Donatas Pilka, Dalia Dijokiene	920
Computable and Incomputable Patterns: The Dialectics of Urban Form and Urban Life in Keszthely, Hungary	Melinda Bognár	928
Spatial network morphology and social integration of the elderly: the socio-spatial 'embeddedness' of community-based elderly care facilities	Xiaoming Li, Kerstin Sailer	936
Transformation of Municipal Squares in Early Reform-era China, 1994-2006	Min Jiang	946
PLAYABLE URBAN FORM – A FRAMEWORK OF BUILDING PLAY-FRIENDLY NEIGHBORHOODS FOR CHILDREN	Yang Lin	954
Morphogenesis of residential development units of Krasnoyarsk: density, form, function	Alexei Lipovka, Irina Fedchenko	962
The Tales of Two Sacred Buildings in Urban Pattern of a Transportation Hub: The Case of Üsküdar, İstanbul	Ferdag Gocek Karabey, Irem Kurtulus, Ayse Sema Kubat	970
Intersectoral debate on urban mobility on a medium scale. Some guidelines.	Adriana Nascimento, Camila Nolasco	979
Gourmet and vitality: analysing the restaurant and urban vitality in the old city of Beijing based on multi-source big data	Mingbo Wu, Yishan Chen	987
Three-dimensional morphological research on the alley space of Lilong Housing — A comparative study of Japanese and French Concession in Tianjin, China	Xinrui Wang, Ying Zheng	995
A diachronic investigation of social inequality and spatial segregation in the District of Columbia	Ilgi Toprak, Fatma Pelin Ekdi	1003
THE EVOLUTION OF URBAN MORPHOLOGY IN THE CREATIVE INDUSTRY-DRIVEN RENEWAL OF EXISTING RESIDENTIAL AREAS - TAKING THE URBAN DESIGN OF ANSHAN NEW VILLAGE IN SHANGHAI AS AN EXAMPLE	Liang Zhao	1012
Billy's Sailortown stories: Unpacking the dense and compact city through graphic anthropology	Agustina Martire, Aisling Madden	1020
From Reclamation to New City: A Case Study on the Mechanism and Development Strategies of Town Spatial Expansion in Hangzhou Urban Fringe	Yufan Chen, Jing Zhao	1028
Space and Social Life: Morphological Self-evolution of Urban Villages in Hangzhou	Jing Zhao, Yufan Chen	1036

Title	Authors	Page
Informal Settlements and International Migrants: The city of Rome (Italy) as Case Study	Saira Abbasi, Cristiana Lauri	1044
Towards Diversified Street Life: The Social-spatial Research of Central Inner City's Mixed District, Nanjing c.1900s-2018	Yichang Sun, Li Bao	1052
The examination of land use and morphological characteristics of small settlements and the relationship between human presence through the example of the Őrség region of Hungary	Ágnes Bertyák, Kornélia Kiassfazekas	1062
Morphological Change of a Republican Capital: The Case of Ankara, Turkey	Melike Boz Günay, Ayşe Sema Kubat	1071

Urban Morphology for design, planning and policy

Title	Authors	Page
Urban Morphology and Urban Design Competitions in Serbia: between Substantial and Procedural Aspects	Vladan Djokić, Aleksandra Djordjević , Mladen Pešić , Aleksandra Milovanović	1080
The temporary and typological potential for new interaction and publicness	Jiawen Han, Zixuan Zhang	1088
Urban Morphology Repertoire for the Good Living	Beatriz Martins Arruda, Emilia Wanda Rutkowski,	1099
Urban Form and Sustainable Mobility Choices - Analyzing Energy Use and Carbon Emissions from Transportation in Typical Swedish Neighborhoods	Todor Stojanovski	1106
Building height regulation: is it still relevant for the 21st century city?	Dalia Dijokiene, Inesa Alistratovaite-Kurtinaitiene, Matas Cirtautas	1120
Urban identity in Hong Kong's New Town: A case study of Tung Chung's urban morphology	Inge Goudsmit	1126
How can morphology contribute to urban management – A case of Daegu city, South Korea	Emilien Gohaud, Sanghyun Lee, Thorsten Schuetze	1134
Evaluating the impacts of possible outcomes on urban design projects: Three layers of Taksim Square and Gezi Park, Istanbul	Ayse Sema Kubat, Kahraman Eskidemir	1142
Promotion of education with temple property - Study on the Influence of Confucianism and Buddhism on the Spatial Morphology of Temple-hosted academy in Hanyang Town	Yang Wang, Ranting Zhao,	1151
Evolution of Danwei System and Urban Landscape in China's Socialist Practice after 1949: a case study in SUNCUN, Shandong province	Qianhui Zhao, Feng Song	1162
The urban form analysis through the morphological transformation study of the urban villages and city integration in Indian context	Swati Madhukar Bahale	1170
Urban coding in transition. A morphological perspective on contemporary Italian city: the case of Rimini	Martina Crapolicchio	1178
How to rediscover the public square in the contemporary city: the experience of Lisbon	José Narciso, Mafalda Sampayo	1189

Title	Authors	Page
Resilient urban form addressing pandemic crisis	Alessandra Buffa	1199
Investigating the Role of Urban Morphology in Designing Resilient Cities	Elham Karbalaei Hassani	1216
Industrialisation and its Urban Impact: Morphological Analysis of the Pulp and Paper Industrial Landscape in Quebec (1880-1930)	Maxime Nadon-Roger	1224
Place Royale in Quebec City: preservation by morphological inaptitude	Luiza Santos, François Dufaux	1233
Study on Traditional Gardening Methods in “Sharing Boundary” of Community - Taking Changli Garden as an Example	Ningcongying Li	1241
The Stadium as Generator of Urban Form. The Case of the Panthessaliko Stadium in Volos	Fabiano Micocci	1245
The effect of new urban design action on promoting the public space vitality in the inner city	Momen Foadmarashi, Francisco Serdoura	1253
Learning urban morphology from emergencies	Ludovica Gregori	1261
Characterization of Urban Heat Islands based on the treatment of the urban planning regulations of the French Local Urban Plan	Magalie Técher, Hassan Ait Haddou, Rahim Aguejdad	1277
Integrated Design Strategy of Building Water-green Environment Based on Urban Form	Lin Wen, Quan Liu	1285
Urban form related to historical patterns, morphogenesis, and transformations. The case of “La Tola” in the city of Quito, Ecuador	Gonzalo Hoyos Bucheli	1294
Urban morphology and temporary uses: exploring the relation between reading and designing	Ambra Migliorisi	1302
Civil society participation in building resilient cities: Ipiranga neighbourhood, city of São Paulo, Brazil	Thiago Luiz Salvadeo Santos, Helena Napoleon Degreas	1310
Public Service Facilities Implantation Mode Research For Existing Communities Based on ArcGIS Analysis	Xiaoyang Wang, Xiaomu Li, Wenzhu Li	1318
Of form and feeling: correlating urban form and feelings of insecurity in Porto, Portugal	Miguel Saraiva, Ana Amante	1326
The morphology of placemaking – from urban guerrilla and formal street experiments to mobility and metropolitan regions	Verônica Natividade , Ana Rivas, Benjamin Büttner, Todor Stojanovski	1335
Street morphology analysis citywide: a bi-dimensional approach	Nicolas Palominos	1344
Sustainability of the Oldest Squatter Settlements of Bursa: A Study on Mollafenari and İvazpaşa Neighbourhoods	Ikbal Berk, Cânâ Bilsel	1353
The Effect of Urban Form on Functional Organization of Space: A Critical Perspective on the Role of Configuration in Urban Planning by Comparing Three Districts in Ankara, Turkey	Ebru Sevik, Hulusi Eren Efeoglu	1361

Urban Morphology, Architecture and Heritage

Title	Authors	Page
Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Education: Between best practices and real conditions	Vladan Djokić, Milica Milojević, Aleksandra Milovanović, Aleksandra Djordjević, Mladen Pešić	1373
Impact of heterogeneous reuse on heritage value under the perspective of scale subdivision – Two modern theatres in Nanjing as examples	Yikuan Han, Xiaoxi Li	1381
The ancient village of Sottomarina in the Venetian lagoon and the demolished Church of Saint Martin Bishop	Enrico Pietrogrande, Alessandro Dalla Caneva	1389
The study of public escalator/elevator and its surrounding as a micro-urban form on a hillside city	Zitong Wang	1398
“Sharing Mosaic”: Study on Regeneration Strategy of Industrial Heritage in Urban Design ——Take Hanyang Iron Factory as an Example	Yuqiu Liu	1407
The Memory of Architecture and its Continuity Behind the Urban Memory	Yuliia Batkova, Domenico Chizzoniti	1415
Sharing Historical Districts under Limitation: An Acupuncture Renewal Design on a Block in Hengshan Road-Fuxing Road Urban Conservation Area	Ang Li	1423
Effects of the Modern Railways Construction on the Change of Area and Urban Function in Wuhan	Jiaqi Zhao, Kyungchan Lee	1431
Protecting the past and planning the future: conservation planning and urban change in historic city centres.	Heather Barrett	1439
Urban landscape in relation to building cycles and bid-rent curves.	Alberto Malabarba, Laura A. Pezzetti	1454

Teaching Urban Morphology

Title	Authors	Page
Form and configuration, as the universal language in teaching urban morphology theory and practice	Éva Lovra, Zoltán Bereczki	1464
TO-NJ Round Trip (into a Room). A comparative urban morphology based design teaching experience between China and Italy at Politecnico di Torino	Ana Ricchiardi, Marco Trisciuoglio	1472
The Pedagogies of Morphology and Gamification; Linking Gamification with Spatial Concepts	Gerhard Bruyns, Peter Hasdell, Diego Sepulveda, Lei Qu,	1481
Urban Morphology within Architecture and Urban Planning Curricula: The Case of Educational Programs in Turkey and Northern Cyprus	Sebnem Hoskara, Nevter Zafer Comert, Ozge Selen Koc	1489

The resilient city: ecological perspectives in Urban Morphology

Title	Authors	Page
Simulating the impact of urban morphology on energy demand in blocks- A case study of dwellings in Nanjing	Chuan Shang	1505

Title	Authors	Page
Research on the Micro-renewal of Urban Residential Communities in the Post-Epidemic Era	Liujun Chen	1513
The Effects of Urban Morphology on Enriching Thermal Experience: Microclimates of Courtyard Spaces in Cambridge	Zhikai Peng, Ronita Bardhan, Koen Steemers	1522
Towards a networked open space for seismic resilience: a case study of Sulmona, a historic city in Italy	Wenying Song, Anis Gharsallah	1530
Adaptability in the Invisible Urban Slum: Case Study of Sub-divided Units in Hong Kong	Maggie Ma Kingsley	1542
The Sustainable Mediterranean City: Perspectives for Prosperous Urban Landscapes	Giulia Annalinda Neglia	1550
The influence of rainwater drainage related to legislation in the configuration of the urban landscape in Belo Horizonte, Brazil	Maria Cristina Teixeira, Stäel Costa, Elisabete Andrade,	1558
RPL Cluster 6: Buildings and Support Facilities, in Cities, Streets and Neighbourhoods	Hajo Neis Pamanee Chaiwat,	1567
The triple legacy of Olympic cities: a morphological assessment of Olympic stadia	Laura Brown, Alice Vialard	1576
Organic growth as a process to reach a resilient and sustainable city	Rosalba Belibani, Deborah Lefosse	1588
RPL Cluster 8: The Refugee WORK and WORK-LEARNING	Pamanee Chaiwat, Hajo Neis	1596

Urban Morphology for SDG 11

Title	Authors	Page
Towards a sustainable urban development: the satellite city project of Kigali, Rwanda	Manlio Michieletto	1606
Urban form and the resilience of Chinese villages during rapid rural-to-urban transformation	Lukas Utzig, Philipp Misselwitz, Laura Vaughan	1614
From Enclave Urbanism to Sustainable Cities: Comparing Gated and Non-gated Housings Form in China from Syntactical and Morphological Perspectives	Yufeng Yang	1622
Assessing the types of urban growth and shrinkage based on indicators of population and economic activity	Young Eun Kim, Saehoon Kim, Jae Seung Lee	1630
Quantitative variations of schoolyard sizes	Matilde Kautsky	1638
A study of Chinese traditional Duotian settlement combining morphological analysis	Jiao Yang , Andong Lu	1646
Morphology Development of Chinese Danwei under Marketization Process: The Case of Wuhan Iron and Steel Company	Zixin Zhan, Yeshuo Shu, Feng Song	1654
Urban morphology and the sustainable development of cultural heritage in Serbia – between wishful thinking and reality	Ana Niković , Božidar Manić	1663