

ISUF2021

G L A S G O W

Annual Conference Proceedings

of the

XXVIII International Seminar on Urban Form

“Urban Form and the Sustainable and Prosperous City”

29th June - 03rd July 2021 - Glasgow, UK

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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 dram 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

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Department of Geography and Planning

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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's 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.

Prof Vitor Oliveira

President of ISUF

Research Centre for Territory Transports and Environment (CITTA)

Division of Spatial and Environmental Planning

Department of Civil Engineering,

University of Porto

Prof Emerita Wendy McClure

Former president of ISUF

Architecture Program

College of Art and Architecture

University of Idaho

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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Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Education: Between best practices and real conditions

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Abstract

This paper presents the initial findings of the project on the Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education (HERSUS), coordinated by University of Belgrade - Faculty of Architecture as a leading higher education institution, with partner institutions of Università Iuav di Venezia, University of Cyprus – Department of Architecture, Aristotle University of Thessaloniki – School of Architecture and University of Sevilla – UNESCO Chair on Built Urban Heritage CREhAR in the digital era. The paper will present the review of the best practices on educating sustainability and heritage, specifically regarding mapping representation of (1) various scales in education, building practice and policy context in each country, and (2) scales across the consortium countries, aiming at identifying strengths connected to methods, materials and teaching experiences.

The purpose of this initial phase is to support the participating Architectural Schools in establishing high-quality standards in the terms of sustainability of the built heritage, through cross-cultural communication and solving problems in an international environment. The paper will present the best practices on educating sustainability of heritage in different schools within European context, hence map (1) the relation of selected teaching courses, built projects and policies in regards to different scales – Landscape planning, Urban planning and design, and Architecture, Construction and Interior design, and (2) provide valuable insight for the context of Serbia regarding teaching and policy recommendations. Having in mind that majority of Serbian Network of Urban Morphology members are participating in this project, as well as the project leader, the special emphasis will be on the morphological perspective. The paper will highlight parallels of conditions and educational practices from different countries with the morphological tradition, observable through the existence of UM regional networks.

Keyword: heritage, sustainability, urban morphology, education, UM regional networks

Introduction

With the intention to preserve historical parts and enable continuity of urban form, and at the same time to enable urban form to cope with everyday challenges, dealing with Heritage and Sustainability from the perspective of urban morphology is more important now than ever. Additionally, in recent years, J.W.R. Whitehand and Kai Gu (2010) reflected on the scale of cultural heritage, elaborating on the shift from individual structures to historical landscapes due to the recognized cultural, educational, intellectual, and economic values. This shift had a twofold impact: (1) it opened a broad field of questions, challenges, and possibilities in protecting various urban tissues, and (2) it challenged traditional higher education of architecture, and urbanism to seek interdisciplinary, multidisciplinary and transdisciplinary approaches.

The paper aims to contribute to the debate of the importance of urban morphology when teaching and learning about Heritage and Sustainability and to present its worth and operative role in architecture and urban design of built heritage while having in mind morphological traditions and relation to the contextual policies of urban development. In the first segment, the paper briefly presents the background and goals of the HERSUS as an overarching research project, and Methodology describing paper conceptual framework and the relation to the results developed within the project. The research segment presents the selected case studies, proposed and analysed by consortium partners, while offering a specific mapping of the cases in relation to the country, scale, and relation between built case studies, educational projects, and policies, hence testifying about contextual conditions, problems and challenges to the treatment of heritage in relation to the sustainability of the built environment, and its understanding within an academic setting.

About HERSUS project

The research is produced as a part of Erasmus+ project titled Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education (HERSUS), realized within the Strategic Partnerships for higher education action type. Through establishing high-level expert groups project aims to analyse critical topics for the modernisation and development of higher education in the field of architectural and urban design across Europe, specifically with the focus on the social and educational value of European cultural heritage.

HERSUS project brings together 41 researchers from 5 countries (Serbia, Italy, Cyprus, Greece, and Spain) which gathered around the mutual goal to design and develop the courses and disseminate them through international training courses, workshops, and a jointly built Sharing Platform. The collaborating organizations are Università IUAV di Venezia (UNESCO Chair: Heritage and Urban Regeneration) - IUAV, University of Cyprus (Department of Architecture) - UCY, Aristotelio Panepistimio Thessalonikis (School of Architecture AUTH) - AUTH, Universidad de Sevilla (UNESCO Chair on Built Urban Heritage in the digital era) - USE and University of Belgrade (Faculty of Architecture) - UB-FA as the lead organization in this project.

Urban morphology, Heritage, and Sustainability

In 2015, J.W.R. Whitehand provided the viewpoint on Conservation, heritage, and urban morphology, highlighting the seminal works of Conzen regarding historical urban landscape (1966) and Larkham on Conservation and the city (1996), but at the same time highlighting the evident gap and underrepresentation of urban morphologists within Heritage organizations, lack of international communication and lack of heritage representation within higher education curricula (Whitehand, 2015). Whitehand also recognized the great variation between countries in conservation and planning practice. Regarding western countries, Rodwell (2009) expressed the opinion that urban morphology is little understood and applied in the UK in contrast to Italy and France regardless of the fact if urban morphology is used as such or not. He also

recognized the acceleration and dynamics of development in historic cities in the Eastern Bloc of Europe, and recognized the possible role of urban morphology, seen in sustainable evolution and development of historic cities in various contexts. Although the focus of the HERSUS project is not solely on urban morphology, having in mind that the project leader is president of the Serbian Network of Urban Morphology (SNUM) and that the core of the UBFA team is made of SNUM members, there is room for deepening the relevance and importance of urban morphology, and for designing and developing curricula which will provide answers for recognized gaps regarding education.

Heritage, Sustainability and Education

The need for the integration of Sustainability and Heritage permeates through the statements of the leading organizations in the field of Architecture. Accordingly, European Association of Architectural Education- EAAE defines that „architecture and architectural education is at the service of the societies it is embedded within and it recognizes the value of heritage, tradition and the contemporary culture“ (EAAE, 2018). Additionally, the Charter UNESCO/UIA for Architectural Education highlights that „architecture, the quality of buildings and the way they relate to their surroundings, respect for the natural and built environment as well as the collective and individual cultural heritage are matters of public concern“ (UNESCO-UIA, 2017). The Charter highlights the need in Architectural education for Awareness of responsibilities toward human, social, cultural, urban, architectural, and environmental values, as well as architectural heritage (ibid). Following this line of reasoning, there is an evident interrelation between heritage and sustainability, but despite clear statements and expressed values, little has been done to shed light on techniques and tools for achieving these ideals within higher education.

Methodology

The paper starts from the assumption that there is a link between successful case studies of built urban and architectural projects, pedagogical and educational models and relevant policies adopted on the local context with the morphological traditions of the country. The conceptual framework is developed on two axes – the vertical that follows the abovementioned case studies and policies and the horizontal that enables mapping of scales (Figure 1). The research is based on the results of the first intellectual output presented in the form of Publication titled Review: Best practices in educating sustainability and heritage (Djokić et al, 2021) edited with the goal to present the local case studies and hence support the Consortium partners in determining high-quality standards regarding sustainability of the built heritage, through cross-cultural and international cooperation. The selection of case studies, data collection, analysis and systematization for the Publication were realized by each of the five HERSUS partners, and was supported by relevant associated partners, institutional representatives and individuals (architectural offices, local bodies, municipalities, etc). The Publication consists of three parts: (1) Pedagogical and Educational Models (4 courses from each of the 5 HERSUS partners – 20 courses in total) – Table 1; (2) Built Architectural and Urban projects (4 projects from

each of the 5 HERSUS partners – 20 projects in total) – Table 2; and (3) Influence of National Policies on the Sustainability of Heritage (one report per each partner organization – 5 reports). This material was the starting ground for the analysis employed in this paper, since it offered valuable overview of different contexts, various methods, materials and teaching experiences that can be further discussed and approached from various perspectives, such as urban morphological one.

Table 1. Selected Case studies of pedagogical and educational models.

Italy - Iuav	Serbia - UBFA	Cyprus - UCY	Greece - AUTH	Spain - USE
1. Integrated Design Lab – Focus 3 Regeneration and Conservation of Historic Buildings and Environments	1. Design Studio 06U	1. Architecture and the Critical History of Ecology	1. Architectural Design Studio II	1. Landscape, City and Architecture in Andalusia
2. Studio 2 Sustainable City Project	2. Green Construction – Lessons of the Past	2. History and Critical Theory of Conservation	2. Extended Design Studio 7: Architectural Design in Historical Context	2. Architectural History, Theory and Composition 3
3. Restoration Theories and Techniques	3. Among Scales: Programming the New Modernity of Belgrade	3. Special Topics on Recording and Documenting Buildings and Sites	3. Interdisciplinary Studio	3. Architectural History, Theory and Composition 4: City
4. Applied Petrography: Deterioration of Stone and Lithoid Building Materials	4. Energy rehabilitation and certification of existing buildings – case study	4. Capstone Design Project (Advanced Team Project)	4. Urban Design Studio (I, II)	4. Architecture and Heritage

Table 2. Selected Case studies of built Architectural and Urban projects.

Italy - Iuav	Serbia - UBFA	Cyprus - UCY	Greece - AUTH	Spain - USE
1. Punta della Dogana	1. Nebojša Tower, Kalemegdan Fortress	1. Urban landscape rehabilitation in Lefkara	1. Area of Hrimatistiriou Square	1. Casa Diáñez
2. H-FARM and H-CAMPUS	2. Senjski Rudinik	2. HYBUILD Multifunctional center	2. Kleious 24	2. Cerro de San Miquel
3. Ex-Panificio Santa Marta Area	3. Office building BULEVAR 79	3. Alexandrou Demetriou Tower	3. Building block defined by Adrianou, Vrissakiou, Kladou and Areos streets	3. El Caminito del Rey
4. Venzone (UD)	4. DR Plan for The Old Core of Zemun	4. Vernacular dwelling in Kapedes	4. Historic barracks in the Pavlos Melas metropolitan park	4. Antigua fábrica de Cerámica

Results and Discussions

Great disparities in countries regarding the tradition of urban morphology, its relevance and importance within academic institutions (study programmes), practice and regulations could be notable. It could be argued that different contexts produced different roles of researches regarding urban history and urban form. Italy that has most evident tradition regarding this question that was institutionalised as UM Regional network (ISUFItaly) established in 2007 - a decade before other ISUF local organizations in Serbia (SNUM, 2016), Cyprus (CyNUM, 2016), Spain (ISUF-H, 2015) and with no official organized UM Regional network in Greece at the moment. Each of the local organizations has its specific focuses and goals: (1) ISUFItaly with the main interest in "the relationship between the study of built landscapes and architectural design, particularly focusing on historical foundations" by involving members that are mostly architects that seeks to develop the Italian tradition of morphological-processual studies in contemporary terms; (2) SNUM with the focus on the evolution of Serbian town's urban form from the more general viewpoint while developing research and practice relations and teaching of urban morphology in academia by involving researchers and practitioners from fields of architecture, urban planning, transport engineering and conservation; (3) ISUF-H with research topics focusing on "medium-size cities, university campuses, urban heritage, informal cities, public space, the landscape of housing, indicators of sustainability and energy efficiency, green space, social space, and mobility and transportation", (4) CyNUM with aims to promote and develop "research on the urban form of Cypriot cities and to support its dissemination both throughout the island of Cyprus and abroad" engaging researchers who transcend the boundaries of the island itself.

Urban morphology, along with specific approaches is embodied in the building tradition, while the influence and strength of the ISUF regional network reflects on the influential and representation of the ISUF itself at the specific country, and the extent to which local researchers recognize the importance of forming a network for peer to peer knowledge exchange.

The examples of built cases provide insights of the (1) Luav, Italy. Reconstruction plan for the Centre of Venzo, based on the in-depth knowledge derived from the analysis by arch. Francesca Sartogo, prof. Gianfranco Caniggia and the photogrammetric surveys by Ing. Hans Forammitti (Sorbo, Tonello, in Djokić et al, 2021), (2). UBFA, Serbia: Plan for the revitalization of the Old Core of Zemun which main goals were reconstruction and restoration of the Zemun fortress and Millennium tower, Reconstruction and re-connection of public squares, and Reconstruction of historical streets and network reorganization (Živković, Popović, in Djokić et al, 2021); (3) UCY, Cyprus: Urban landscape rehabilitation in Lefkara based on restoration and recovery of the previously lost traditional elements of the buildings (such as the colour palette and traditional pavement) and restoration of openings in their original form (dimensions and type), (Hadjipetrou, Nodaraki, in Djokić et al, 2021); (4) AUTH, Greece: Upgrade of the greater area of Hrimatistiriou Square through open space revitalization, modification of car circulation network, development of cultural pedestrian paths and promotion of historical buildings, following principles of bioclimatic development (Chatzidimitriou in Djokić

et al, 2021) that introduced various space morphology studies; and (5) USE, Spain: Rehabilitation of the wall of San Miguel Alto and its surroundings by reinterpreting the materiality of the existing wall and establish the physical and constructive difference between the old and the new wall (García-Casasola, Pinzón-Ayala in Djokić et al, 2021).

The examples of educational practices that provide valuable insights for the education in the field of morphology refer to (1) Iuav, Italy: Studio 2 Sustainable City Project devoted to the analyses of the "place attachment" concepts based on the identification of the values and problems of the site as cultural expressions (Sorbo, Tonello, in Djokić et al, 2021), (2) UBFA, Serbia: Design Studio 06U that uses urban morphology, both as a theoretical framework and a practical tool, is used for site-specific design and context-sensitive research (Djokić, Milojević, Pešić, in Djokić et al, 2021), (3) UCY, Cyprus: Capstone Design Project combining Departments of Architecture, Engineering, Archeology and has providing students with the tools and methods for conducting historical and archaeological research and excavations, on-site design recording and systematic data analysis (Philokyprou, Hadjipetrou, Nodaraki, in Djokić et al, 2021), (4) AUTH, Greece: Architectural Design Studio II that focuses on the retrofit and reuse of the city's existing building fabric using the parameters of sustainable design and energy efficiency (Chatzidimitriou in Djokić et al, 2021), (5) USE, Spain: Landscape, City and Architecture in Andalusia where special attention is given to the use and appropriation of the past and the relationship between continuity and transformation (Peral, in Djokić et al, 2021).

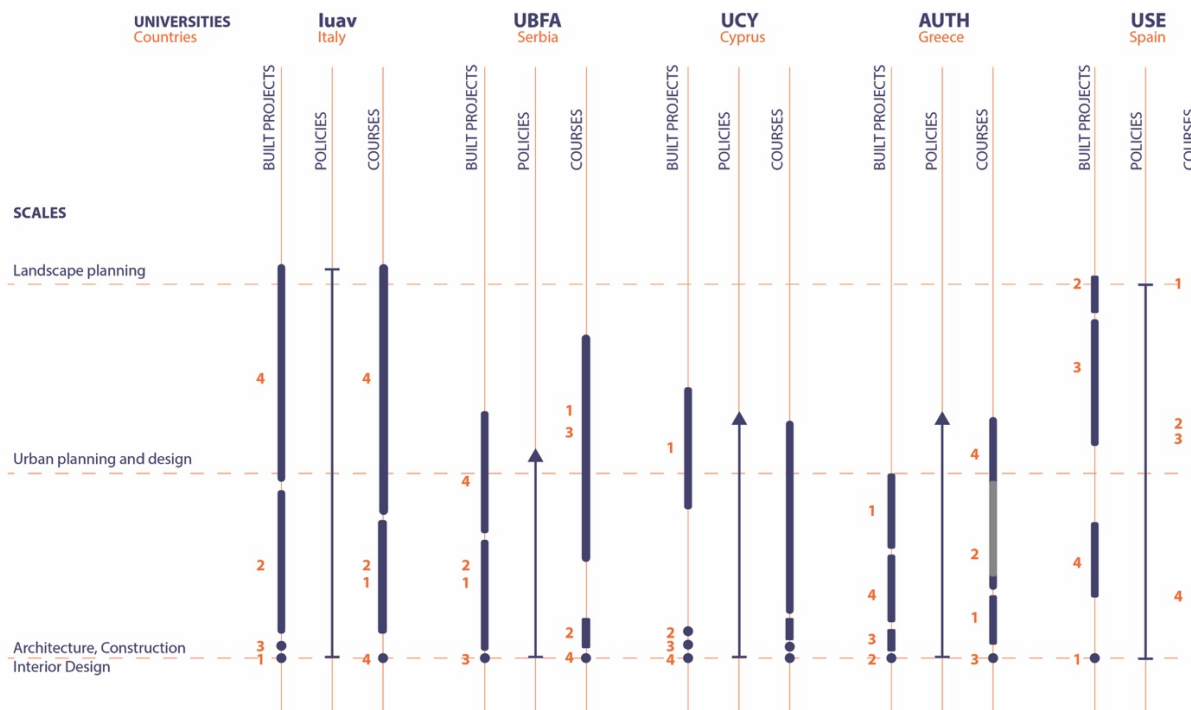


Figure 1. Mapping cases of good practice in relation to policies

The analysis of various contexts enables for key factors of the relation between urban morphology, heritage and sustainability to be drawn up. In regards to heritage and sustainability it is possible to recognize: (1) the tradition and both formal protection of the cityscape and landscape and existence of strong adopted norms (Italy), (2) endeavour to strengthen the connection between sustainability and heritage through laws, policies and strategic documents (Serbia), (3) high standards for reaching sustainability goals in regeneration and redevelopment in scales of urban design and architecture (Greece, Cyprus), (4) landscape sensitive approach in redeveloping projects (Spain). When it comes to observing morphological aspects in the presented case studies it can be noted that each school records specific approaches regardless of the fact are they are called morphology or not: (1) process typology tradition in practice and education (Italy), (2) typo-morphological perspective in education (Serbia), (3) greatly developed documentation and surveying tools and techniques (Cyprus), (4) Space morphology analysis (Greece), and (5) recognition of historical sequences (Spain).

Conclusions

Having in mind previous analysis it could be stated that morphological tradition and professional organizations that are devoted to these issues in each country could confirm the existing connections with academic and practical interest in urban morphology and continuity of urban form that is recognized in legal framework.

The first phase of the HERSUS project enabled the drawing of parallels between policy conditions, educational and building practice, and provided opportunity for each of the local teams to reflect on the existing state and the selected case studies. Different scales which are recognized in various contexts of built heritage, from landscape scale, over urban planning and design to the scale of the single architectural building and the construction detailing, there is an evident need for the multiscale approach in heritage treatment both in practice and education. Looking from the perspective of Serbia, the largest gap was recognized in the process of integrating urban heritage in the regulative framework, and consequently providing guidelines and formal rulebooks both for the understanding and the sustainable use of heritage on all scales. This note comes to the even greater importance if known that the valid Law on Cultural goods ("Official Gazette of RS", No.48/95), dates from 1995, by which tangible cultural goods are classified as cultural monuments, spatial cultural-historical units, archaeological sites and famous places, and as such does not recognize nor it is in line with strategic documents that deal with topics such as landscape, townscape, urban heritage, etc.

The second recognized crucial point refers to the experience of UM Regional networks and UM tradition that is not always visible nor formalized or disseminated on the international level, for which the cause can certainly be in lack of international cooperation and knowledge exchange, but it can be sought in language barriers as well. Having this in mind, it is of immense importance to determine urban heritage and other notions terminologically and discursively, and to identify heritage types, approaches, actions, tools and technics, which was set as a goal for the next HERSUS intellectual output titled *Statements for Teaching*

through Design for Sustainability of the Built Environment and Heritage Awareness. In this process, UBFA will give a special role to the insights and perspectives of urban morphology in terminological clarification of heritage in a multiscale manner and in relation to all three fields- education, regulation and practice.

Having in mind the aim of the HERSUS project is concerned with the production of new courses that will intertwine sustainability with heritage, it is crucial to cherish and exchange experiences of different schools and traditions of urban morphologies.

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