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# BOOK OF ABSTRACTS

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XXIX CONFERENCE  
INTERNATIONAL SEMINAR ON URBAN FORM  
Urban Redevelopment and Revitalisation  
A Multidisciplinary Perspective



LODZ-KRAKOW 2022

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The project involves the organisation of the twenty-ninth edition of the annual International Seminar on Urban Form Congress in Łódź and Krakow. Every year since 1994, the congress has brought together scholars from all over the world interested in issues related to urban morphology. Past editions of the Congress took place in European cities, the Americas, Asia and Australia. The current edition marks the first Congress in Central and Eastern Europe. The proposed theme addresses issues of urban structure transformation and revitalisation in a multidisciplinary perspective. The themes of the congress are part of the range of issues that constitute fundamental challenges for the spatial development of Łódź and Kraków and other Polish cities.



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# RESEARCH PAPERS





# **IDEOLOGICAL RECONSTRUCTION, MODERNIST NEOINTEGRATION, NEUTRAL RESTRUCTURING AND POSTMODERN RETROVERSION. APPROACHES IN THE POST-WAR REBUILDING OF HISTORIC TOWNS IN THE SILESIA REGION**

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## **Abstract**

Silesia is a significant historical region in Central Europe with a complex and multicultural history. Since 1945 its largest part lies within the borders of Poland. Most of Silesian towns, about 120, were founded in the Middle Ages, on the basis of the German law. Repeatable features of their historic urban structures are: a plan determined by geometry, a checkered grid of streets, regular blocks of development and a centrally located market square. Over centuries these towns evolved in terms of spatial features while maintaining their functional profile. The historical continuity of development was broken in 1945 not only due to material damage brought by the war, but political and state changes as well. The post war rebuilding has been carried out in four stages and encompassed several approaches: reconstruction, neointegration, restructuring and retroversion. These approaches, in specific cases, were combined, complemented, or followed each other. The process of rebuilding has not been fully completed with urban blocks left undeveloped in many towns.

This study aims to present the approaches used in the post-war rebuilding of Silesian historic towns, in the area of their medieval layouts, from 1945 to recent developments. The main objectives are to: compare the approaches on the basis of criteria and case studies selected, assess their impact on the towns' urban structure and identify morphological changes generated. The research also examines the issue of Silesian towns' identity and individuality.

The research methodology involves historical and interpretive research, logical argumentation based on analysis and synthesis, as well as the comparative case study.

The study reveals the strong need to recreate constitutive elements of the lost heritage determining Silesian towns' identity. On the other hand, the protection of historic town also means an implicit consent to introduce inevitable changes according to the rules of sustainable development.

# TOWARDS UNIVERSAL CLASSIFICATION OF BUILT-UP TYPES: THE LITHUANIAN CASE

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## **Abstract**

Built-up typologies are one of the main research topics of urban morphology and classification of urban tissues is one of the major research problems. However, this is not only a scientific but a practical problem as well. In pursuit to eliminate various “wounds” of the physical and functional fabric of cities left by modernist planning practices, lately the shift towards a form-based coding within urban development regulations is noticeable. Traditionally, the main source of knowledge about built-up types has been the study of site-specific historical artifacts, their interactions, and the extent of transformation. The findings of such studies are directly applicable in townscape management processes and urban conservation projects. Although there have been attempts to characterize the constantly evolving fabric of contemporary cities using traditional approach and investigative techniques, the success of these efforts is limited. Firstly, the differences in local conditions lead to the diversity of the built forms, but a particular urban site seldom possesses a complete set of built-up types. Secondly, research outcomes are often influenced by the research goal, making it difficult to compare and apply the results of different studies. These challenges highlight the growing need for a universal classification of built-up types. The presented research is based on the current urban development and planning regulatory trends in Lithuania, which is characterized by still dominant land-use zoning and fragmented initiatives to guide the production of more defined urban form. A conceptual framework developed by the authors is used to map and compare the general and specific cases of built-up typologies implemented within the national regulatory system. Based on the identified peculiarities an innovative approach (procedural modelling) is applied to test the possibility to derive a universal classification of built-up types that would meet current and future challenges of urban development in Lithuania.



# **THE STUDY OF URBAN FORM AT THE PORTUGUESE NATIONAL LABORATORY FOR CIVIL ENGINEERING (LNEC): RESEARCH METHODOLOGIES**

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## **Abstract**

In the early 1960s, when research in architecture and urbanism was integrated at the Portuguese National Laboratory for Civil Engineering (LNEC), a young generation of architects-researchers took the opportunity to experiment research methodologies which were already in practice by international referential research centres. Consequently, the study of urban form developed in Portugal, at LNEC, resulted from the adoption of different methodological practices and urban form analysis techniques. This presentation introduces the main research methodologies approached by LNEC researchers regarding the study of urban form, for the time period 1961-1974. This is a paradigmatic moment of urban form thinking, as it coincides with the emergence of a new discipline, urban design. The research that has informed this presentation results from an ongoing postdoctoral research, and was informed by a comprehensive analysis of the reports produced by LNEC's researchers between 1961 and 1974, as well as contributions from recent interviews conducted by the authors of this presentation to LNEC's former researchers. The presentation identified the methodologies adopted by LNEC's architects-researchers, the respective disciplinary areas that have informed such methodologies, but also the thematic areas within which such methodologies were applied, and the adaptations performed to such methodologies, considering the specificity of Portuguese urban and architectural contexts. In particular we recall the studies of urban form regarding housing, a thematic line that engaged LNEC's architects-researchers to test the use of research methodologies from three different sciences: 1) Social Sciences, through the collection of information based on surveys, questionnaires, and the fulfilment of databases; 2) Formal Sciences, through mathematical and computational approaches; and 3) Applied Sciences, through the use of design and schematic drawing. Through this work, we aim to examine and exhibit to ISUF community the different research methodologies and approaches applied, in the 1960's and 1970's, at LNEC.

# PARAISÓPOLIS FAVELA, SÃO PAULO, BRAZIL: URBAN MORPHOLOGY THROUGH THE BRITISH SCHOOL

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## Abstract

Favelas (slums) are characteristic elements of the urban landscape of the main Brazilian cities, internationally associated with the Rio de Janeiro landscape, but mainly of the metropolitan regions, favelas have been the places that the poorest are forced to gather to live in the urban areas, in a process that continuously takes them more and more to the peripheries. Considering the metropolis of São Paulo, the landscape of Paraisópolis favela is mostly formed by the individual action of each resident, who builds the house and gives shape to what is seen today, with the buildings constructed by the government on the edges of the community the main breach of continuity in the formal aspect. Considering this formal discrepancy, and the apparent homogeneity of the fabric, this article seeks to understand the complexity of the urban form of this favela, inserting itself in the theoretical field of urban morphology, presented by Pereira Costa and Gimmler Netto (2014) and Oliveira (2016), and especially in the procedures developed by the geographer Conzen (1960), considered the creator of the English school of urban morphology. Through the proposed analysis, it was found that the urban form undergoes different types of changes according to the socioeconomic periods, which are superimposed on the current city. A correlation was noted between the results obtained in the study carried out in Paraisópolis and the study carried out by Conzen (1960) for the city of Alnwick, England. The database consisted of old cartographies and aerial photos of public planning bodies that were redesigned and georeferenced. The attempt to understand the favelas through morphological studies is not new, however the advantage of this work is to remain within the spectrum of more consolidated research.

# **TAXONOMY OF CONTEMPORARY URBAN FORMS IN FRANCE: TOWARDS AN URBAN ATLAS THROUGH MULTIPLE FABRIC ASSESSMENT.**

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## **Abstract**

Bridging Southern and Northern Europe, France is known for its very diversified urban landscapes, combining vernacular cores, modernist developments, sprawling suburbia and very specific exurbs. Traditional urban and rural landscapes were different among French cultural regions, whereas more recent ones are apparently more homogeneous throughout the country. Research in urban morphology and heritage conservation produced considerable knowledge of French traditional urban forms. On the contrary, attention to more recent forms and non-residential areas, to their perception from public space and their contribution to contemporary French cityscapes is more recent.

The identification and characterization of France's urban fabrics and morphological regionalization of French cities remained for long a complex task, traditionally based on in-depth but qualitative assessments and restricted to specific, mainly historical, geographical and cultural contexts. Recent advancements in morphometric analysis propose innovative computer-aided protocols overcoming these limits (Berghauser Pont et al. 2019, Fleischmann 2021 etc.). Among them, Multiple Fabric Assessment (MFA, Araldi and Fusco 2019) is a computer-aided streetscape-based urban morphometric protocol for morphological regionalization (Conzen 1960). First presented at ISUF 2017, MFA has already been applied to several urban areas in different sociocultural contexts and geographical scales (Fusco and Araldi 2017, Perez et al. 2019, Guyot et al. 2020, Fusco et al. 2021). Based upon these experiences, MFA has been further developed and upscaled to analyze and compare even wider study areas. This paper presents its implementation at the national level, allowing a multiscale comparative analysis of French urban forms. A taxonomy of urban fabrics in France is proposed. The outcome of these analyses is a first contribution to a national atlas of morphologically regionalized metropolitan areas. Being explicitly streetscape-based, the MFA atlas is particularly well suited to understand the spatial organization of visible urban fabrics for pedestrians and car-users moving on the street network (Lynch 1960).

# **RESEARCH STUDY: ON QUALITY PUBLIC SPACE PROJECTS: COMPARATIVE URBAN STRATEGIES**

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## **Abstract**

The polycentric, compact city with quality public spaces constitutes an implicit urban model in the Sustainable Development Goals (SDGs). The New Urban Agenda promotes the quality of public space as a common good. Therefore, it is pertinent to reconsider the quality parameters and investigate its development potential. This article is based on a theoretical and methodological reflection on the quality of public spaces, taking into account the contributions of the urban tradition. With this perspective, a selection of public space projects in the European sphere has been analyzed. This has made it possible to identify a series of parameters that are subsequently applied to nine representative examples in three Spanish cities: Madrid, Barcelona and Zaragoza. The objective is to carry out evaluations on the quality of public spaces and determine to what extent they are in relation to the conditions of security, accessibility and inclusivity that they offer.

# **STUDY ON A PARADIGM OF MICRO-REGENERATION OF URBAN COMMUNITY -TAKING 3 CASES OF HOUSES UPGRADING IN XIAOXIHU TRADITIONAL BLOCK IN NANJING**

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## **Abstract**

The rapid and large-scale urbanization experienced by Chinese and Asian cities over the past few decades has fragmented and demolished urban fabric, functional structures, spatial environments and even social relations. Various urban diseases have emerged consequently and urban transformation is required to achieve more sustainable development. The micro-regeneration of urban community orientated on residents' demands can be an approach to balance the urban development and preservation, to seek a harmony between historical heritage, cultural revitalization, urban distinctiveness, market profit and local lives as well.

The micro-regeneration is a kind of positive intervention during the transition of both urban morphology and social ecology, in terms of material and humanities perspectives. It is becoming the professional fields of architects towards future urbanism.

This paper will take 3 research-based projects of housing renovation in Xiaoxihu Community in the traditional quarter of Nanjing as the examples of such micro-regeneration. Upon the interactive 'Learning- Research-Practice' mode, the author has focused on value fostering, multilateral cooperation and integrated multidisciplinary design, while having paid equal attention on history, culture, space and social ecology. these projects have further explored inclusive decision-making mechanisms that take both urban regeneration and community revitalization into account, the strategical integration of top-down planning with bottom-up self-generation, and an incremental, small-scale transformation approach as well. It has formed a pedagogical and pragmatic paradigm which may be a reference to architectural education and practice for the cities which are facing similar urbanism challenges.

# **BUILDING TYPOLOGY FOR ADAPTIVE REUSE. A METHODOLOGICAL OVERVIEW**

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## **Abstract**

**Aim of the review** Building typology has been considered as a theoretical frame to investigate architectural heritage and the unregulated urban form. This article focuses on building typological classification to address sustainable reuse strategies on a wide scale. Adaptive reuse is based upon the assumption that buildings are not designed simply to host one use during their life cycle. Thus, the typological approach enables tackling underused or vacant existing buildings independently from their obsolescent functions. In this context, building typology recognition is a lens to reconsider buildings as dynamic entities.

**Search and review methodology** The review explores recent research based on the typological classification of stock of buildings for regenerative purposes. In particular, this investigation focuses on research aimed at identifying groups of buildings with similar spatial or performance weaknesses and potentials for a given purpose.

**Findings** The review identifies different ways in which the building typology is used as a conceptual frame to face regeneration. A first group comprehends research that is focused on technical performances of the buildings (e.g. seismic, heat loss...). A second group focuses on dimensions and distribution to evaluate new uses (e.g. regeneration of homogeneous stocks like movie theaters, schools, shopping malls). A third group includes public-private urban interfaces typological assessment (e.g. ground floor distribution classification regarding setback, access, transparency).

**Conclusions and Implications** This approach can support in defining priorities of intervention for the reuse of heterogeneous and extensive estate stock, often excluded from heritage conservation policies and scattered in the urban fabric.

# RE-SCHOOL. A REGENERATION METHOD FOR THE ITALIAN SCHOOL BUILDING STOCK

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## Abstract

**Background** In 2020 the health emergency put school buildings to the test, highlighting the limits of a dated heritage, in need of urgent interventions. The approximately 40,000 buildings that make up the Italian school infrastructure are a layered and widespread legacy throughout the country, which requires rethinking also in light of the social, demographic, and pedagogical changes of recent decades. The opportunity to invest in the existing school building stock, fueled by national and European funds, needs an extended effort of exploration, analysis, and measurement of the school building heritage.

**Aim and objectives of the study** In this framework, the Re-school research project was born to provide tools and systematize knowledge on the school infrastructure. The main objective is supporting the public authorities in strategic planning to activate a process of regeneration of the school building stock on a territorial scale.

**Method** To do so, the research team has been developing a model to integrate the recurring typologies of school buildings with the specificities and potentials of different territories. Quantitative and qualitative analyses based on national and regional datasets enable the identification and qualification of recurring criticalities (e.g. concerning the issue of sustainability and energy efficiency) and spatial resources (e.g. surplus space in schools in non-urban areas).

**Findings** The early result of this research is a working method to explore the transformative potential of school buildings, thus allowing the adaptation of the existing infrastructure to face quickly changing situations (e.g. the pandemic or the drop of demographics).

**Conclusions and Implications** In a framework in which tools and funds are and will be available for a substantial restructuring of the Italian school infrastructure, this research could support the vitality and capacity for initiative of local authorities through the development of an effective and replicable operative model.

# **TOPOLOGICAL RELATIONSHIPS AND URBAN COMPLEXITY: ARE MASS-PRODUCED DEVELOPMENTS LESS CAPABLE TO ADAPT FROM THE WAY THEY STRUCTURE?**

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## **Abstract**

Planned urban developments tend to be seen as missing the level of urban complexity found in more traditional urbanisations, which links to their dynamism and resilience. And while some originally planned environments become more complex as they adapt together with their context, many mass-produced sprawled and suburban areas remain unaltered for longer, risking their liveability. The way to approach this keeps focusing on how the morphological elements themselves have been simplified, and in a lack of diversity in their shapes and uses. Yet the spatial arrangement of the elements, their topological linkages, and the layout's capacity to change from those receive scant attention. Network analysis and other forms of relational studies have been widely used in the social sciences, and within the structuring of elements such as street networks. However, their application is still limited regarding exploring the layouts' organisation from their connections across elements and scales, and how that might affect their flexibility to construct complexity over time. This research seeks to distinguish the topological structure of mass-produced developments from their traditional counterparts, and even from other forms of planned layouts. This aims to understand better the impact of certain forms of development on urban complexity, from the role of the elements' arrangement in the potential of the system to develop new connections and overlaps. The exploration focuses on the neighbourhood scale, inspecting the way components such as buildings entrances, street segments, public spaces, and even building additions relate in space, and how the organisation gets affected by probable new additions. The study applies graphs and hierarchical trees in a novel way to sample areas in traditional cities showing largely unchanged planned expansions. The results uncover specific patterns in later mass-produced growths, lying behind their conservatism and dislocation from the city observed in previous studies.



# URBAN REGIONS UNDER STRESS: THE CASE OF MADRID AFTER THE LOCKDOWN

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## Abstract

**Background** Urban density has been one of the main indicators in urban planning since its modern formulation. Since the COVID-19 pandemic began, some voices have argued that cities, as dense concentrations of population, are natural hotspots for the illness. The knowledge acquired over the last two years provides a longer perspective to test the links between density, mobility and health. The case of Madrid is well suited for such an analysis due to its 5 million population and rich public open data landscape.

**Aim and objectives of the study** Our aim is to test the link between urban density, urban mobility, revenue and pandemic incidence. The objectives are to determine whether on a regional scale density is that much correlated to the spread of COVID-19, and to which extent this is linked to other factors.

**Method** Our method will rely on the measurement, over a set of morphological zones over the weeks from June 2020 (end of lockdown) and November 2021 (surge in omicron variant), urban density (dwellings, built area, residents and jobs per hectare), urban mobility (daytime / nighttime population ratio), revenue and pandemic incidence. Mobility seems relevant as social distance is recurrently presented as a tool against contagion. Revenue will be analyzed in order to test the hypothesis that lower paid workers have suffered more not having a choice to work remotely. The data collected during the pandemic will be compared with data from October 2019

**Findings** The analysis will help identify the way in which the urban region adapted to the crisis and provide a knowledge of its “barebone” functionality.

**Conclusions and implications** Conclusions will help provide input for future work in models regarding the use of open data in monitoring and urban digital twins, as well as insight for planning works at regional scales.

# **PROTRACTED TRANSITION. MANAGEMENT OF RESIDENTIAL BUILT HERITAGE IN THE HISTORIC CENTER OF ROSTOV-ON-DON, RUSSIA**

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## **Abstract**

Residential heritage is perhaps the most challenging in terms of its management and protection due to many contradictory values associated with the buildings to be protected as a common good and the buildings to be lived by the individuals. The complexity of Heritage management increases when the relationship between common and individual is changing dramatically, and the evolution of rules defining this relationship is not complete. In the last thirty years since the USSR collapsed, large Russian cities have transformed radically due to the privatization of land and real estate, commercialization of urban space, and the increasing role of non-state actors in urban development. At the same time, most of these processes are not finalized. There are “ownerless” land plots, buildings, or infrastructures in a highly fragmented urban fabric and many contradictions or gaps in the legal framework related to responsibilities, obligations, and rights in the field of urban development. Based on the case of the historic center of Rostov-on-Don, a large southern Russian city, our paper examines which institutional approaches define the current state of the residential heritage (listed and non-listed) use, management, and preservation. To collect data, we used a mixed-method research approach that includes the analysis of the institutional and legislative setting of control, management, and transformation of the existing built environment; analysis of the approved strategic, planning, and local regulatory documentation; observation and mapping of the existing practices of the residential heritage transformation; semi-structured interviews with the local and regional formal and informal actors. Our findings demonstrate that the transitional context largely determines the existing practices to residential heritage use and management, and the local institutions cannot overcome the existing gaps and contradictions in legislation, property rights definition, and management.

# TRANSFORMATIONS IN URBAN FORM OF PLANNED AND SEMI-PLANNED SIBERIAN CITIES

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**Prof. Paolo Carlotti**

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## Abstract

**Background.** The character of transformation processes of spatial structures in historical settlements can largely inform architectural and urban practice. The given paper is a part of a broader comparative research, which explores transformations of cities sharing similar urban form and environmental situations.

**The aim** of this part of the research is to investigate the formative process of several cities in Siberia that have had a partly spontaneous and partly planned development.

**Method.** The study, based on the typomorphological reading, presents the analysis of a chronological sequence of changing urban form of Siberian cities.

**Findings.** Three case studies in the district of Siberia, three cities along the routes of the Siberian Tract and Trans-Siberian railway are characterized by a similar environmental morphological context. Despite this relative initial similarity, cities have been developed differently: some demonstrated relative resistance to the regular planning of the XVIII-XIX centuries, some were completely rebuilt.

**Conclusions.** Laboratories of "trial and error" - Siberian cities demonstrated adaptation of various colonial models. For instance, the foundation of cities can be attributed to the primary step of colonization of the territory of Siberia and corresponds to the initial model of colonial city; the stage of adoption of regular plans corresponds to the second stage of colonization and is characterized by the interweaving of the regular plan and vernacular tradition, individual for each city; the Soviet period brought third-order models.

# ON THE SEARCH OF A TRANSPARENCY IN BETWEEN CONTEMPORARY DESIGN AND HISTORY OF THE PLACE

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## **Abstract**

How and why is history useful to the architect in today's world? The research focused on the role of designers in bringing back the historical precedents to bear on the present practice. To develop this matter, the dialogical model is presented as a strong theoretical paradigm. From different cross-disciplinary points of view this has been broadly accepted.

The main objective of this research work is to elaborate a useful methodology to understand the urban form, the buildings and the public space at present, looking back to understand the meaning of things, and to illustrate with examples that history, as context or precedent, throughout different periods of time, had been a design tool which allowed the architect to encounter the balance between permanence and change when modifying a site and offering users a new place where memories and hope could converge.

In order to explore the link between the architectural design and the history, the urban form of Morella, in Spain, was analysed through pictures, historical drawings, plans, ethnographic reports, and in the current and ancient cartography. Furthermore, urban morphology, space syntax and direct observation in the city were used as part of the methodology.

The result is a longitudinal study about Morella as the main case study in which the morphological configurative studies, the design poetic act and, finally, the social use of space converged. The methodology used proved to be extremely useful to elaborate a new architectural interpretation of Morella, and to explain how and why the city took the shape it currently has.

In conclusion, *the architect as historian*, *-(re)reading the built environment-*, and *the history as a source material* to design contemporary architecture *-providing prototypes subject to adaptations to new contexts and situations-*, make transparent the dialogic relationship between contemporary design and history of the place.

# URBAN PROJECTS IN CASABLANCA: NEW URBAN FORMS IN EXPERIMENTATION

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## **Abstract**

Casablanca, the economic capital of the country, is a city where several urban forms coexist. Casablanca has specificities compared to other cities in Morocco, but like many of them, this metropolis has varied urban forms that bear witness to the economic, social, and urban history of the city.

These urban forms, including the old medieval core “Medina”, the city center, the new medina “Habous” and the worker housing estates of colonial heritage, as well as the modern urban cores resulting from post-protectorate regulatory town planning, are the result of the successive transformations of the city.

The city of Casablanca is currently experiencing an urban development marked by the emergence of major urban projects to international standards which mark the transition from purely regulatory urban planning to operational town planning. These urban projects produce new urban forms that are part of a “dense and varied city” approach. This approach advocates a typological diversity that is combined with a great diversity of urban and architectural quality. These new urban morphologies are new tools for urban planning, health-friendly urban planning, and climate change urban planning.

This communication deals with the evolution of the urbanization modes of the city of Casablanca and highlights the different characteristics and contributions of these new urban forms experimented in Casablanca, through the case study of the urban renewal of Casa Anfa.

# THE EFFECTS OF POST-INDUSTRIAL REVITALISATION ON SHIELDFIELD, NEWCASTLE UPON TYNE

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## **Abstract**

**Background:** Revitalisation of post-industrial cities has been a significant pressure on residential neighbourhoods situated at the periphery of the historical city centres. This pressure causes new developments with different functions in these areas and a substantial change in the physical and social contexts. In this perspective, Shieldfield, which is a small residential area at the edge of Newcastle city centre in Northeast England, is selected as the case study. Its built and social environment has been altered over the last ten years with an increasing number of private student accommodations. Due to social forces and unrelated physical structures, this multinational settlement has lost various tangible and intangible values that make it an English neighbourhood.

**Aim & Objectives:** This study aims to investigate the effects of contemporary physical and social forces on the urban form and social life of Shieldfield.

**Method:** The change of urban texture will be analysed with mapping comparisons and residents' thoughts and ideas for the area gathered in a participatory design workshop, which the author and the community organisation will organise.

**Findings:** The outputs of the analysis will reveal the morphological change in Shieldfield caused by the university campus and student accommodations and also their social impact on residents and their everyday life.

**Conclusions & Implications:** As these forces made the residents enthusiastic about involving in the decision-making process, it is essential to analyse the conflict created by given parameters. It is aimed to elucidate how physical and social frameworks can affect each other in a developing post-industrial neighbourhood in the UK context.

# RESIDENTIAL REAL ESTATE FINANCING AND URBAN FORM IN LATIN AMERICAN MEDIUM-SIZED CITIES: COMPARATIVE STUDY BETWEEN CONCEPCIÓN (CHILE) AND MENDOZA (ARGENTINA)

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## Abstract

**Background** The evolution of the residential real estate market in Latin America during the last ten years has not been foreign to the process of global financing carried out by banks, pension funds and large investment funds in certain sectors of the national economies. This change has produced profound changes in urban forms growth. This transformation affects both the type of residential building and the intensity and scale of the new housing. The effect has been studied within the framework of the continent great capitals, but how has this process impacted the form of medium-sized cities? What kind of real estate products exist in the new residential landscape of these cities?

**Aim and objectives** This work compares the recent evolution (2010-2020) of housing developments in two intermediate cities in the Southern Cone: Concepción (Chile) and Mendoza (Argentina). Beyond achieving a comparison and an analysis of both cases, the research tries to establish the link between the investment capacity of the promotions and the preferred models. Ultimately, it is a reflection on the model of the contemporary city.

**Method** The methodology is based on the comparative analysis of the available data of these new residential enterprises and the geographical analysis of their location, relating this information to the characteristics of real estate companies operating in local markets.

**Findings** A few residential models have been identified, showing some differences between Concepcion and Mendoza but also significant similarities.

**Conclusions and implications** The results show how most of the new residential growth has been shaped by the combination of the private sector and a weak public land regulation in the studied areas, resulting in a lack of variability in the supply of the real state market.

# **A MORPHOLOGICAL ANALYSIS FOR THE INCLUSION OF SOCIAL HOUSING PROJECTS IN THE CENTER OF GUAYAQUIL, A RESTRICTION OR AN OPPORTUNITY?**

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**Prof. Juan Carlos Torres**

*University of Guayaquil, Ecuador*

## **Abstract**

Urban centres revitalisation is a task undertaken by the governments of Latin American countries decades ago, following the trends of European nations. The high cost of peri-urban development, the deterioration of urban centres, and the sub-use of existing urban infrastructure ignited interest in city centre revitalisation. Guayaquil is no exception to the above. In a city with a continuous expansion of its urban boundaries at a high economic, social, and environmental cost, it becomes essential to consider housing projects to revitalise its urban centre. The purpose of this study is to analyse possibilities or restrictions for including social housing projects in the city centre, based on the analysis of existing urban tissues. A combination of methods is used, including the study of conceptualizations, a morphological analysis of urban variables and a walkability assessment at the urban fragment level. Besides, land use instruments with a social focus are included for promoting and securing land for housing developments to contribute to urban centre revitalisation. Results indicate the relation between urban form, variables and possibilities for urban centre revitalisation through the inclusion of social housing projects. The study concludes with a critical reflection regarding the possibilities or restrictions of the selected approach to include new revitalisation proposals and how the different visions of the city could be integrated and included in the existing urban pattern.



# **A QUANTITATIVE ANALYSIS OF THE EXOADAPTIVITY OF BUILDINGS IN LONDON**

**Mr. Liam Bolton**

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## **Abstract**

Designing for adaptability is a means by which to increase density and facilitate sustainable development. In recent years, adapting existing buildings by constructing additional storeys on rooftops, or airspace development, has been advocated by government and industry as a sustainable solution to the housing crisis in London. Making use of existing resources by building upwards is an alternative to carbon-intensive sprawl and demolition. Using text mining and data from the planning system, this study measures the adaptability of buildings in London, focusing on the distribution of upward densification through airspace development between 2008/09 and 2018/19. It draws on the concept of 'exoadaptivity' to describe the extent to which buildings are externally adaptable. By comparing the external adaptability of different functional uses, this study finds that residential and non-residential buildings adapted in different ways to upward densification. In the process, it demonstrates new quantitative techniques by which to measure and map the exoadaptivity of the built environment. The results have implications for the design of cities that are adaptable, high-density and sustainable. In an era of rapid urbanisation, exoadaptive design could play an important role in addressing climate change.

# **FEAR AND TRUST AT THE URBAN GROUND FLOOR: A CONTRIBUTION TO (RE)THINK THE PUBLIC-PRIVATE INTERFACE FROM THE GROUND UP**

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**Dr Conrad Kickert**

*Assistant Professor of Architecture, University at Buffalo*

## **Abstract**

Urban form and architecture shape and are shaped by the relationship between public and private life in cities. This paper presents an integrated and reciprocal view of public-private interface. It examines the interrelation between formal, spatial, and environmental configurations of the public-private interface on one hand, and the social, economic, political, and cultural dynamics on the other. Specifically, the paper investigates how the urban ground floor interrelation between built environment and its inhabitation results in morphological changes over time.

To show the broad scope of the interrelation between urban form, buildings, and their urban ground floor, this investigation studies the changing urban ground floor morphology in São Paulo, Brazil and The Hague, Netherlands.

São Paulo's 20<sup>th</sup> century suburban single-family housing subdivisions show how the interface between buildings and the city is informally shaped due to societal shifts. Originally their buildings had legally mandated setbacks. However with the increase of urban violence during the 1990s, walls and fences began to be installed resulting in an opaque and insecure streetscape. Over time, the need for local amenities created another edge condition, as these walls were illegally deconstructed or perforated for retail stores.

On the periphery of The Hague's urban core, a former industrial and working-class neighborhood was transformed into an introverted office district in the mid-20<sup>th</sup> century. Over time, the resulting severance between public and private space has been healed through various formal efforts to reinvigorate street life, including the demolition of introverted offices and the construction of street-level retail and other amenities.

These case studies demonstrate the reciprocal interrelation between built form and urban life and show the limits of top-down intervention to shape this interrelation. They reinforce the urgency of studying and (re)thinking the public-private interface from the ground up towards a more resilient and sustainable urban environment for all.

# **AN ACROSS SCALE COMPARATIVE MORPHOLOGICAL ANALYSIS - MAPPING THE LANDSCAPE STRUCTURE OF LINGNAN AND JIANGNAN**

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**Ms. Hanlu Liu, Ms. Xinying Liang, Mr. Yuxin Lin, Ms. Qi Wang**

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## **Abstract**

Urban landscape is a complex system. The understanding of the underlying mechanism of each subsystem and their dynamic interaction is quite crucial for human intervention regarding future development. This requires a systematic scientific approach. The author takes a morphological stand and proposes a cross scale analytical framework which integrates the Dutch morphological school technique -reduction drawing and layer approach to systematically interpret the urban landscape. In order to exemplify the potential and the generic property of the approach, the research applies heterogeneous case study. Explorative analyses were performed on two cases in different region in China. The production landscape in Pearl River Delta and Tai Lake region are mapped on geography, landscape, settlement, and architecture and public space scale respectively. Their form and formation are discussed with the maps. Comparison and discussion regarding the form of the water, pond, difference of typologies, and the scale and form of the settlements are made. Research shows the dependence and interrelation between scales. The author believes that mapping is an effective analytical and design process as well as well-presented products. The logic of the complex space and design strategies reveals itself along the process. The cross-scale mapping facilitates a comprehensive understanding of urban landscape. It is a prerequisite of design.

# THE INVENTION OF ONE OLD CITY. THREE PROJECTS FOR LÜBECK

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**Dr Pierfrancesco Sacerdoti**

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## Abstract

According to the principles of *critical reconstruction* introduced in the European debate starting from the 1970s, the recent rebuilding of the mediaeval Gründungsviertel (Founders District) in Lübeck has become a positive example for a didactic experiment in the Master's Degree at Politecnico di Milano, developed in 2020/21 together with Prof. Annegret Burg. After an in-depth analysis of the historical morphological structure of the urban form of one of the oldest Hanseatic cities of northern Germany, the research project has developed design proposals aimed at replacing out-of-scale or poor quality buildings from the post-war reconstruction period with new morphological structures, based on the original form, still legible today, thanks to historic maps.

One of the selected areas is the Marktplatz – the main square with the mediaeval town hall – whose residential buildings, built after the war without any reference to the pre-existing houses, has been the object of typological proposals of substitution. On the north side, opposite the Marienkirche – one of the religious symbols of the 13<sup>th</sup> century city – two other urban blocks have been revitalised through infill interventions, according to the ancient *parcellarium* and the original typologies. In particular, one of the two blocks is characterised by the presence of the so-called Buddenbrookhaus, which belonged to Thomas Mann's family and where his famous novel *Buddenbrooks* was set.

The common ground of the different proposals is the reconstruction of the existing historical fabric, through a rethinking of the system of paths – according to the typical *Gänge* – the historic passages that once crossed the blocks and put them in communication with the public system of streets and squares. The re-proposition of mixed use buildings – residential, cultural and commercial – is aimed at revitalising the historic centre of the city, now in a partial state of decay.

# **A REFUGEE PATTERN LANGUAGE CLUSTER 9: DESIGN AND CONSTRUCTION FOR REFUGEES**

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*University of Oregon*

## **Abstract**

This paper is part of a larger project the 'Refugee Pattern Language.' In chapter 9, we present nine patterns of design and construction that help refugees rebuild a new life in a host country. These patterns address design approaches, fabrications, building construction techniques, and building regulations for both first responses such as design for temporary structure and the second responses of a permanent solution. These patterns also investigate construction in a resettlement site from environmental, economic, and social perspectives that benefit both refugees and local populations. This research is based on fieldwork, case studies, literature, and PL methods.

1. Adding a living unit for refugee
2. Pre-fabrication and Re-deployable Temporary Structures
3. Participatory design and refugee labors
4. Remodeling buildings for refugees use
5. Locally Buildable shelters and housing
6. Façade design- creating positive dialects
7. Adjusting Zoning and Construction Rules
8. Creating transverse spaces and preserving open spaces
9. Rebuilding ones' country: Design and Construction skills for returning to home country

Design and construction for refugees starts with RPL 9.1-RP L9.3 especially for individuals to help provide refugees home and shelter. This can be achieved by maximizing one's house capacity and employing construction techniques suitable for adding a unit to host refugees. Then in RPL 9.4-9.6 explore designing in neighborhood and city scales to accommodate these populations while promoting spatial integration. Through utilizing existing buildings, supporting a local economy, and creating productive dialects; building and construction can help refugee rebuild their safe space and positive relationship in a host community. RPL 9.7 and RPL 9.8 look at accommodation potentials from a planning scale including increasing density, easing construction rules and creating constructive open spaces. These patterns are particularly important at a governmental level to encourage successful refugee-receiving situations. Lastly, this cluster concludes with a pattern on equipping refugees with skills to rebuild their home country upon their return.

# **DOES HISTORY MATTER? A DIACHRONIC ANALYSIS OF SOCIO-SPATIAL DYNAMICS IN THE CITY OF NICOSIA**

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## **Abstract**

The social make-up of Southern European cities has been changing rapidly due to significant levels of migration. Newly emerging and often uncontrolled settlement patterns arise in these cities, resulting in distinctive geographies which reveal specific concentration of demographic, social and cultural homogeneity or diversity. Analyses of Cypriot cities' urban growth have pointed out that rapid changes often lead to an uneven expansion of urban form, creating a fragmented structure, as well as leading to spatial inequalities between increasingly heterogeneous populations. Although change per se can be a positive evolution if it enhances the sustainable characteristics of a city, there is a need to understand the possible impact of developments on a city's existing urban form, and to assess its ability to adapt to such changes, through an understanding of its urban development.

This paper explores the dimension of time and the role it plays in the way Nicosia's urban form has reacted to change and development. It investigates patterns of urban concentrations of social factors during the growth of its urban form. The complex relationship of spatiality and sociability is approached from a variety of analytical perspectives. Firstly, the syntactical characteristics of the city are examined at six points in time (1883, 1933, 1956, 1990, 2001 and 2014), assessing its spatial properties, problems and the ways it has reacted to change. The spatial data is then discussed against quantifiable social data, while the historical review of the city's development provides the context of the changing socio-spatial dynamics.

Such an approach a) further facilitates an understanding of the ways in which urban form relates to social phenomena and vice versa, b) explores whether socio-spatial urban patterns may be better understood as being conditioned by the interaction between "inherited" spatial configuration and contemporary life and c) assesses and informs proposed urban developments.

# THE IMPACT OF COVID-19 ON THE ECONOMIC RESILIENCE AND SPATIAL VITALITY OF URBAN COMMERCIAL DISTRICTS

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**Prof. Jae Seung Lee**

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## Abstract

**Background** In recent years, the threat of COVID-19 unprecedentedly forced countries to implement policies to minimize mass infections for the health of citizens. Such policies have significantly activated e-commerce rather than visiting retail shops. Previous studies have reported that COVID-19 increased online trade and foster changes in travel time, store patronage frequency, in-store duration, and shopping destinations.

**Aim and objectives of the study** This study aimed to investigate the characteristics of commercial districts with high economic resilience during the pandemic. Specifically, the research focused on changes in online sales before and after COVID-19 and how the pandemic impacted the vitality of commercial districts.

**Method** Using panel modeling, the study explored the interrelationship between sales changes and characteristics of the districts – land use, floating population change, proximity to public transport, and policy – during the pandemics. For the research, credit card payment for food consumption data was used to evaluate the vitality of the commercial districts in Seoul, Korea.

**Findings** The overall traditional market economy contracted as the number of visitors decreased, however, there were differences in the growth rates of e-commerce and conventional retail according to regional characteristics. The study found that commercial districts with a high ratio of business facilities and a mix of residential and commercial areas indicated a complementary relationship between online and physical retailing, as in-store sales have been maintained and online sales have increased. On the other hand, the tourism-oriented commercial districts indicated an alternative relationship, as in-store sales have decreased while e-commerce has increased.

**Conclusions and Implications** The study implicates that the spatial imbalance caused by COVID-19 may change the economy and vitality of commercial areas. This suggests that the changes can lead to a gap in the economic resilience of the local economy for the evolution of urban morphology for revitalization.

# **HUMAN-CENTERED URBAN DESIGN ANALYTICS INTEGRATING DATA-INFORMED AND EVIDENCE-BASED APPROACHES: A MICRO-RENEWAL CASE IN SHANGHAI**

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## **Abstract**

This study proposes an analytical approach for quantitatively evaluating the human-scale street quality and providing precise design interventions, which usually depended on expert subjective experience and intuition. With the help of multi-sourced urban data and wearable biosensors, both data-informed and evidence-based approaches have been integrated to achieve the measuring of spatial activities and space perceptions. For the dimension of spatial activities, Location-based Services (LBS) data was applied to construct a target user portrait, and Unmanned Aerial Vehicle (UAV) images were applied to efficiently record spatial behavior. For the dimension of space perception, a series of biosensor devices, including ProComp Infiniti Encoder, E4 Wristband and Eye-tracker were applied to collect data of skin conductance (SC), electromyography (EMG), electrodermal activity (EDA) and eye focus. A road from a Shanghai new town was selected for case study, which was initially built around 1990s and now requires micro-scale renewal. It is a useful representative for many Chinese new towns. By evaluating these key dimensions precisely, this approach could act as an efficient method for site analysis and propose appropriate design interventions. In short, this study contributes to the development of human-centered urban design by providing a new perspective integrating the large and small data.



# **PROMOTING DESIGN INNOVATION THROUGH A COLLABORATIVE PROCESS: THE CASE STUDY OF HIGHSTREET REGENERATION IN HUYTON VILLAGE, THE UK**

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**Ms. Sandy Britton**

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*Architectural Emporium*

## **Abstract**

High quality design and innovation in architecture and urban design has been a pursuit in design governance for place-making and sustainability. Good design adds economic social and environmental values that benefit not only the investors, but also the regulators and end-users (Bartlett School of Planning, 2001). Measures to promote good design often include design competitions, design guidance, planning incentives and designers' capacity-building etc. Public participation is also recognised as an effective way to enhance design quality and, in particular, to aid the implementation of design (Coenen, 2009). However, the literature suggests that design outcomes vary significantly in participatory design projects involving the public and other stakeholders and it is not always clear what design process would best support design innovation. This paper reports a collaborative effort involving students in XX School of Architecture, local residents, architects, urban researchers and the local authority, to understand the challenges faced by the local highstreet in Huyton, and to offer innovative design solutions. At different stages of the design process, particular parties of the stakeholders contribute in various ways to shaping the design outcomes. These include roundtable design critics, social media based public survey, exhibition and debates. During the process, six urban design performance indicators have been identified and contextualised in the Huyton Village: land use and programme, environmental and social sustainability, permeability of street network, identity and heritage, street frontage and public realm. Local memories and expectations are captured and translated in design outcomes. This process is beneficial for facilitating innovative design and helps the regeneration of the highstreet. It may require adaptation in other contexts to cater for specific stakeholder relationships, but the reflection on our process contributes to the design governance literature.

# **A RESEARCH STUDY ON THE CORRELATION OF ARCHITECTURAL FORMS UNDER THE INFLUENCE OF MIGRATION**

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**Prof. Yuan Zhu**

*School of Architecture, Southeast University*

## **Abstract**

Migration is always happening in the human history. There are similarities and differences in the architectural characteristics of the two places connected by the migration, which reflects the interactive relationship between the migration and architectural forms. This relationship is clearly reflected in the immigrant settlements. This study will make a comparative analysis on the architectural characteristics of the traditional settlements that the settlers are immigrants from Southern Henan to Jiang Nan, by marking the literature information on the map, drawing diagrams by type and other methods, combined with literature reading and field research. The correlation of the architectural forms of the two places is found. The similarity is summarized as: village and pond, house and courtyard, materials and workmanship, and the differences are summarized as the group direction, spatial boundary and structural practices. The final result is hoped to provide new ideas for the development of migrant settlements in the rural transition period.

# STUDY ON THE EVOLUTION OF THE RELATIONSHIP BETWEEN URBAN HOUSING SPACE AND TOPOGRAPHY IN CHONGQING'S MOUNTAINOUS OLD-TOWN RIVERFRONT IN CHINA'S REFORM ERA: AN ENVIRONMENTAL HISTORY'S PERSPECTIVE

**Dr Liran Chen**

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## **Abstract**

**Background** Before China's post-1978 reform era, the riverfront slopes of mountainous cities in southwestern China accommodated vernacular housing landscape intertwined with mountain-water topography. During the reform, such relationship between housing space and topography changed drastically, which remains understudied.

**Aim** Taking Chongqing's riverfront as an example, this research investigates the changing relationship between housing space and topography in the reform era in southwestern China.

**Method** Environmental history investigates the history of human-nature interactions, applying social division analysis to study how different groups developed their relations when occupying natural resources, and cultural construction analysis to study how humans developed their understandings about nature. This research combines environmental history's research mode with urban history.

**Findings** In the 1980s before housing marketization, Chongqing's riverfront housing form and riverfront local residents' daily life adapted to mountain-water topography, interpreted by the mass as representing Chongqing's traditional mountain-water cityscape. In the 1990s, housing marketization motivated intense riverfront high-rise housing development, flattening riverfront slopes and seducing wealthy groups to replace local residents to live in riverfront housing with river view, interpreted as Chongqing's loss of traditional mountain-water cityscape. After the late 1990s, Chongqing government started preserving the remaining riverfront mountainous vernacular housing, but driven by commercial motives, such top-down preservation produced commercial areas themed with "traditional mountain-water cityscape" and relocated local residents, turning topography into a static cultural symbol detached from local residents' daily life.

**Conclusions** The changing relationship between housing and topography signified that Chongqing's riverfront mountainous cityscape making shifted from the grassroot-oriented to the elite-oriented, from serving the mass' needs to serving the elite's interests/visions, due to the combination of a strong Chongqing government and an unchecked neoliberal market. The paper suggests future Chongqing's riverfront housing renewal return riverfront slopes to the public's daily life, and preserve the intimacy between the mass' daily activities and topography.

# FROM FEUDALISM TO SOCIALISM: SOCIALIZATION PROCESS OF MONUMENTAL SPACE IN OLD CITY

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## Abstract

Monumental space, otherwise known as ritualized space, is an important type in Aldo Rossi's definition of "Primary element".

- It has special significance for shaping urban culture, constructing collective memory and leading urban development.

This kind of commemorative space is an important symbol to highlight urban power structure and construct political intention, which has a distinct spatial structure and hierarchy system.

- From the beginning of the ten Books of Architecture, architects began to focus on temples, theaters and other public buildings, and pay attention to the relationship with other areas, social background and urban historical process.

Under the urban development and social change background, the spatial organization logic of monumental space changes with the change of usage and accessibility.

- Specific performance in core element, streamline, element organization, structure and so on, closely related to the change of use.
- In the form of the following two forms: ①Breakthrough of plot pattern, ②Breakthrough of the accessibility.

In this paper, two case studies corresponding to the above breakthrough processes were carried out in Beijing, which were both located in the central axis of Beijing, experienced the historical change from feudal to modern society.

- Ti'anmen Square from a ceremonial palace to people square.
- Shouhuang Palace in Jingshan Park from worshipping ancestors to youth extracurricular activities to cultural exhibitions.
- The morphological processes under socialization were studied.

We think that the findings can reflect the relationship between morphological transformation and urban social reform.

- In the process of socialist China's remodeling, the monumental space and ritual space under the original feudal system are being remolded accordingly.
- Along with the reshaping of society and citizens.

An influence mechanism between the renewal of monumental space and the political, social and cultural conditions should be established.

# **THE IMPACT OF DAM STORAGE AND HERITAGE PROTECTION ON TOWN FORM: A CASE STUDY OF SHIBAO TOWN UNDER THE INFLUENCE OF THREE GORGES PROJECT**

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## **Abstract**

With the construction of the Three Gorges Dam, the water level of the Yichang-Chongqing section of the Yangtze River channel has risen to 175m, and the new hydrological environment has had a profound impact on the historical towns along the river. At the same time, the Chinese government has carried out resettlement projects and cultural relics protection projects. These factors called Three Gorges Project have caused rapid changes in the urban form of the Three Gorges Reservoir Area. This paper chooses Shibao Town, located in the Three Gorges Reservoir area, as a case to reveal the impact of the construction of large-scale water conservancy facilities on the urban form. The universality of this case is that it can outline how the relationship between people and the environment is reconstructed in the process of relocating the town. The second reason is that the in-situ conservation project of Shibaozhai preserved some historical buildings, which can explore how the new town interacts with traditional elements. This paper will analyze the factors that affect the evolution of Shibao town, such as inland river trade, urbanization, and dam construction. Then, it will discuss the reconstruction of residents' social relationships, especially the conflict and cooperation between businessmen and farmers. Finally, it discusses the evolution of the relationship between Shibao town and Shibaozhai, which is a famous relic.

# RESIDENTS' PERCEPTION OF COMMUNITY DECLINE IN INDUSTRIAL CITY IN NORTHEASTERN CHINA

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**Prof. Yong He**

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## Abstract

**Background:** In the context of rapid urban development, some small and medium-sized cities in northeast China are experiencing a continuing demographic and economic decline. These social problems have led to a decline in the built environment of some of the city's communities. A range of subjective assessments of community decline are associated with residents' perceptions of environmental decay. The area of perception of the built environment has been extensively researched in various countries. In China, however, there is a lack of research in this area.

**Objectives:** This article presented a survey of how residents perceive the decaying built environment in their communities.

**Method:** The most economically depopulated cities in Northeast China in the last five years were selected for research in more representative communities in the city centre. The research was carried out using participatory visual methods—photovoice. Each person takes ten photographs based on the questions and briefly describes the reason for taking them. A total of 31 interviews and 291 photovoice contributions were thematically analysed.

**Findings:** Several key findings were as follows: 1) Based on the translation and coding of images and texts, the study captured five categories of community built environment themes: buildings, facilities and roads, greenery and landscaping, public spaces and living atmosphere elements. 2) Tidiness was perceived most frequently by residents. 3) Residents were most concerned about the impact of the decay of the external community environment on their physical and mental health.

**Conclusions and Implications:** The external environment of a community is not only the physical space, but also the residents' expectations and perceptions of their own lives. In the top-down transformation of communities in China, the experience of community residents' use is the most important voice to be heard.

# **THE MULTICENTRIC RENEWAL OF SMALL CITIES THROUGH PUBLIC SPACE. THE POST-EARTHQUAKE SITUATION OF MONTORIO AL VOMANO (TE) – ITALY**

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**Dr Elisa Maruelli**

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**Dr Tommaso Lolli**

*Università degli Studi di Roma - La Sapienza*

## **Abstract**

The current pandemic situation pointed out the housing potential of small and medium-sized municipalities, however outlining a gap between the high livability and quality potentialities compared with their actual condition, with few services and often in a progressive state of abandonment. This historical condition intercepts, for several municipalities in Central Italy, the reconstruction needs following the earthquakes of L'Aquila (2009) and Amatrice (2016). The issue is therefore extremely topical, given the possibility for several municipalities to access EU funds to rebuild, and therefore also potentially to reinvent, a new condition which starts with reconstruction but aims to the repopulation of historic nuclei and the structuring of a multicentric network. If it is necessary to postulate a subsidiary and mutualistic organization in order to structure the municipalities in an overall city-territory, it is also essential to have precise revitalization strategies for the small municipalities themselves. The paper will discuss the case of Montorio al Vomano, emblematic because involved in both earthquakes, and will attempt to draw a strategy for the renewal of the village. The work will concern both the preservation of identity nuclei of the city (i.e., the restoration of monuments, the recognition of the morphological invariants of the urban fabric, the protection and valorization of natural areas such as the river and the woods), both the identification – in abandoned areas and in the interstitial marginal green – of spaces available for urban extension and completion, mainly through the insertion of new public and collective spaces. Considering these as the primary epicenters, they will be connected by a network both ecological and of soft mobility, translating on the territory the sense of the city built by parts, in order to create multicentric structures and identify generalizable strategic hypotheses for the revitalization of small and medium-sized villages.

# **EVOLUTIONARY STUDY OF THE URBAN FORM OF HISTORICAL DISTRICT FROM THE PERSPECTIVE OF THE INDUSTRIAL AGGLOMERATION PROCESS: A CASE STUDY OF EAST BEIJING ROAD HARDWARE STREET IN SHANGHAI**

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## **Abstract**

Historical districts are formed by overlapping urban forms in different periods, which have protection and research value. The urban forms of industrial specialized historical districts show dynamic characteristics with different stages of industrial development.

This paper takes East Beijing Road Hardware Street in Shanghai as an example, which reviews the process of industrial agglomeration, and divides the development of its hardware industry into four stages: germination period, maintenance period, prosperity period and transformation period. Then through the four elements of "building footprint, road network, building form and function combination" constitute a morphological analysis framework, corresponding spatial morphological types and characteristics are obtained, and the influence of industrial change on urban form is verified. Finally, it summarizes its evolution law and discusses the influence mechanism of industry on urban form, in order to provide reference for the sustainable transformation of historical districts.



# **HISTORIC NEIGHBORHOODS PRESERVATION: APPLICABILITY OF MORPHOLOGICAL REGIONS AS A TOOL TO PROTECT THE URBAN MEMORY AND URBAN SPACE OF A BLACK COMMUNITY NEIGHBORHOOD IN UBERLÂNDIA, BRAZIL**

**Prof. Glauco Coccoza**

*Federal University of Uberlândia*

## **Abstract**

The article relates morphological aspects with the preservation of urban space, architectural heritage, and social and cultural memory of a historic neighborhood in Uberlândia, Minas Gerais, Brazil, applying a morphological analysis in the neighborhood originally known as Nossa Senhora da Aparecida, current Patrimônio, a black community built at the end of the 19<sup>th</sup> century, after the end of slavery. The neighborhood was encompassed by the growth of the city, it is in an accelerated process of transformation and de-characterization, and runs the risk of completely erasing an important urban history, of struggle and recognition as a social group. The main objective is to analyze the morphological aspects of the neighborhood and thus identify the morphological regions that emerged with the transformation and configuration process of the neighborhood, and thus, propose new legal parameters for the development and preservation of the neighborhood characteristics, confronting them with the actual legal parameters. The article presents the urban formation of this small area isolated of the urban fabric, its urban evolution, the constructive aspects, and how the current urbanization processes of the city de-characterizes the neighborhood and erases an important urban memory. The research uses the methodology of morphological regions identification to distinguish the different areas of the neighborhood, differentiated through their building elements and typological patterns. The work ends by presenting simulations of possible scenarios to occur, if new legal provisions uses morphological parameters, proposing new urban restrictions that would guarantee the preservation of the historical characteristics. As a result, the study shows how the urban environment behaves in terms of development, and what would be the ideal scenario according to the morphological characteristics of each region.

# **HISTORICO GEOGRAPHICAL AND PROCEDURAL TYPOLOGICAL APPROACH IN URBAN RENEWAL: AS A CASE LOURIJINA, NORTHERN CYPRUS**

**Dr Nevter Zafer Cömert**

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## **Abstract**

The study of urban form is a field that embraces different professions and researchers within different languages and disciplines such as ; geography, architecture, planning, anthropology, sociology, cultural studies. M.R.G Conzen put forward a theoretical basis for urban conservation grounded in the functional development of the urban landscape and based on the recognition of townscape. According to Conzen the town plan is a combination of three distinct but integral plan elements; they are the streets and their street system, the plots and their plot pattern, and the building arrangement within these patterns. In addition to this he explained the present structure of a town plan by examining its historical development. Within this context he put forward a theoretical basis for townscape in the functional development of the urban landscape, which is plan unit, land utilization and building utilization. Later, Whitehand developed his ideas not only in the field of urban conservation grounded based but also the socio-economic development of the industrial and postindustrial towns by the means of understanding the transformation of urban form.

In line with two theories, the aim of this study is to explore Historico Geographical and procedural typological approach in different geographies in order to find a comprehensive methodology for one of the traditional towns renewal by conserving the form of the Lourijina in Northern Cyprus. This entails to see the finding within the concepts of urban land utilization, genetic plan units and historic building types are still applicable today towns in different geographies. Secondly it tried to discover the typological procedures transformation at traditional town renewal especially how the delimitation of townscape have hanged through time.

The findings give a systematic methodology for assessing the traditional urban form renewal in practices.

## DESCRIBING AND PRESCRIBING. TRANSITIONAL MORPHOLOGIES IN RIMINI, ITALY

**Mrs. Martina Crapolicchio**

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### Abstract

The mutation of urban structures is inevitable as it reflects the regenerative processes of the city influenced by political, social and economic factors. However, this transformation must not be stemmed but guided. For these reasons, in the Italian historical centres, the strategy aims not to preserve the ancient forms through restoration but to select and choose those that can remain active in a new context due to their intrinsic strength. In order to avoid indiscriminately planning a conservation programme, one of the possible solutions is to provide an active role in the urban regeneration of each morphological category. The study presented here starts from the aforementioned arguments. It aims to formulate directive and implementation guidelines in the form of regulations for the historic centre of Rimini, Italy. The research question asks the relationship between description and prescription. In this case, the descriptive part is based on the urban reading through a morpho-typological investigation with a diachronic and transitional approach. This method allows understanding the connection between the network of settlements and the territory and how the original arrangement has been transformed through innovations guided by new factors and new settlement models. The analysis was carried out on five morpho-typologically homogeneous areas. In inter-scalar reasoning, the choice of analysing five samples of the urban fabric is instrumental in verifying whether the reasoning conducted *a priori* can be applied to the existing urban fabric. Nonetheless, the need to define even more in detail some possible strategies to favour urban regeneration in a widespread way requires a targeted study of every building in the historic centre. Finally, it is possible to set up an operative matrix to define the knowledge base to reformulate and overcome the existing rules and codes.

# **FROM LAND-USE PLANNING TO MIXED-USE CONFIGURATION. SIMILARITIES AND DIFFERENCES IN THE CENTRAL GRID OF BARCELONA**

**Dr Carles Crosas**

*Professor*

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*Barcelona Urbanism Laboratory. LUB-UPC-BARcelona TECH*

**Mr. Enric Villavieja**

*Ms. Architect*

## **Abstract**

The city of zoning, inspired by the principles of the Charter of Athens, soon generated some rejection in the urban debate of the second half of the twentieth century. Since then, it has been an increasing awareness of the need for the mixed-use urban composition to remediate the inherited monofunctional areas, looking for more sustainable and more efficient metropolises.

Thus, contemporary urban planning and design must provide empirical and objective approaches to the different variables that characterize the city and its fragments. This paper presents a 3-year urban research project linking mixticity and proximity with the aim to understand some of the clues on the mixed-use configuration in compact urban areas.

Taking central Barcelona as the main case study, the complex relationship between density, topology, and accessibility is explored through an x-ray analysis, which mixes GIS mapping and morphological drawings. A series of graphics on three selected samples (around 25 hectares extension) depict novel views of the districts and emphasises differences and similarities among the urban fabrics of the compact city.

The research evaluates the concentration (number and distances) and intensity (area and variety) of different services and programs and the territorial service that is provided to inhabitants (density and balance) in a comparison among the three representative fragments, from the very basic land-use reading to the complex mixed-use configuration of the urban form. In sum, the measurement and understanding of the proportion of different uses and their location in each fragment is aimed to provide a valuable tool for the assessment and promotion of the mixticity in other cities.

# **URBAN FORM AND SUSTAINABILITY. NEW ADAPTIVE AND RESILIENT TOOLS AND STRATEGIES FOR THE REGENERATION OF TERRITORIES OF UNAUTHORIZED PRODUCTION**

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## **Abstract**

The prefiguration of new strategies and tools for the regeneration of the territories of unauthorized production constitutes a field of research full of perspectives for the construction of new physical and intangible assets and configurations, capable of raising the levels of settlement and environmental quality, inclusion social and economic growth.

In the current phase characterized by the increase in environmental fragility, by fragmentation and territorial dispersion, by the risks due to global climate change, and by the economic and socio-health crisis caused by the Pandemic, these objectives require the implementation of a unified strategy, integrated and inter-scaling, capable of promoting new planning tools based on adaptive and resilient strategies, aimed at recomposing the morphological-functional characteristics of the fabrics and building the spaces and infrastructures of the public city. A perspective in which interventions capable of increasing the complexity of the urban structure, increasing the relationships between the parts, finalizing the design of the voids to the demands of sustainability, investigating the relationships between plan and project, between architecture, city and territory, play a fundamental role research of new urban morphologies and settlement models. In this frame of reference, the paper intends to outline the characteristics of the "Roman case", particularly characterized from a historical, morphogenetic and dimensional point of view, highlighting the procedural, methodological and operational approaches, the limits and criticalities, but also the evolutionary paths that could affect the overall process of urban regeneration and territorial rebalancing. The contribution adopts an integrated and inter-scalar approach, divided into phases, iteratives corresponding to the synthetic recomposition of the themes investigated around three disciplinary needs: a need to contextualize the framework of the approaches and the main theoretical-disciplinary contributions, a need for operational and interpretation constituted by the analysis of the case study, and a need for critical and proactive reflection.

# **MORPHOLOGIES OF MASS-PRODUCTION IN THE LISBON PERIPHERY. URBAN DESIGN AND CONSTRUCTION PATTERNS IN THE ICESA URBANIZATIONS**

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**Dr Patrícia Bento d'Almeida**

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## **Abstract**

Demolitions and redevelopments of social housing from 1950s-1960s English Brutalism have galvanized an upsurge of interest on the architecture of this era and its key ideas. However, this is often restrained to architecture and to postwar Britain. Here, we contradict both aspects, emphasizing the implications of those ideas in urban design and morphology; and presenting a case-study located in a different context – Greater Lisbon.

Indeed, the emphasis on raw materials integrated a larger vision of urban expansion or reconstruction using industrialized elements and types of buildings or public spaces capable of mass-(re)production. Construction materials and industrial techniques laid at the basis of an architectural aesthetic, but also of a new approach to urban design.

While Portuguese cities did not suffer war destruction, by the mid-20<sup>th</sup> century they presented problems of housing shortage and dereliction, worsening as industrialization advanced. In the mid-1960s, ICESA, a construction company, introduced housing urbanization through industrialized heavy prefabrication, supported by research developed at the National Laboratory for Civil Engineering, who evaluated the design of housing spaces and several construction aspects.

The first ICESA's scheme experience started in 1965, at Santo António dos Cavaleiros, a town in the Lisbon periphery, partly for private market and partly for social housing. The social housing project was later reproduced in other locations: Vialonga, another peripheral town, and Quinta do Morgado, within the Lisbon city. These were built by making use of industrialized elements and repeated typologies, echoing British ideas of 1950s-1960s, but also allowed to test its limits. Is a housing urbanization repeatable? How much morphological diversity can be obtained from a limited set of elements?

A comparative morphological analysis of the three above identified ICESA urbanizations, aims to target such questions and understand these examples and their underlying ideas to contribute to inform future processes of housing urbanization.

# **A STRUCTURAL AND MORPHOLOGICAL ANALYSIS OF THE ROAD NETWORK OF ANCIENT MOUNTAIN TOWNS: A CASE STUDY OF CHINA'S LONGXING TOWN**

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**Prof. Wenyong Tan**

*School of Architecture and Urban Planning, Chongqing University*

## **Abstract**

The morphological evolution of the road network of the ancient mountain town is the dynamic expression of the regional characteristics and the social and economic development. Based on the integration, integrated core and intelligibility of spatial syntax, this article analyzes the topology and the morphological change of the road network at Longxing town in Chongqing, China in 2009, 2016 and 2021. The morphological analysis is combined with the road network density, turning degree, the turning ratio and twisting ratio. The quantitative analysis demonstrates that: (1) The overall road network of the ancient town grows in a network, but the dependence on the central road is gradually increased, and the whole expands to the south. (2) Its integrated core also moves south with the southward expansion of the road network. Consequently, the attraction point changes to the south, and the attraction of the original integrated core becomes lower. (3) Its density is increasing year by year, while the turning degree is decreasing year by year. In consequence, the morphological evolution of the road network of the ancient mountain town is regularized. Finally, based on the above structural and morphological analysis, and natural factors and social factors of its morphological development, we propose the corresponding protection and development strategy of the road network in the ancient mountain town.

# SHIFTING SPACES OF RESISTANCE: A PROCESSUAL STUDY OF THE RECENT PROTESTS IN THE EVERYDAY IN DELHI

**Ms. Arpita Dayal**

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## **Abstract**

This paper studies the recent shift in spaces of resistance from designated to non-designated, peripheral, and everyday public spaces in Delhi, the political capital of India. It further argues that this shift is essentially a state-driven phenomenon instigated by preventing access to public space administered as a mechanism to diminish resistance against state activities. The study critiques the shrinking nature of democratic spaces in Delhi, thereby exposing how the city has been, in many ways, reorganized around the idea of preventing or subjugating protest. Drawing from an ethnographic study of the spontaneous anti CAA protests at Shaheen Bagh in 2019-20 and the Farmers protests against the three farm bills at the borders of Delhi in 2020-21, the research analyses how new forms of resistance emerge in these sites chosen and reclaimed by the public barred from institutional channels. By analyzing the organic processes involved in the movement, occupation, and identity formation, it examines the unique urban morphologies of transience, formed during the social and spatial evolution of the protest site. In doing so, findings reveal the transformative potential associated with these protests, thereby questioning the idea of permanence in their transience. This has implications on the definitions of a true protest and represents how such spatial acts of resistance are manifestations of people's aspirations and anxieties, where new communities of citizenship formed at protest sites are characterized by inversive processes of in-betweenness. The study thus attempts to redefine the everyday as a boundless space that allows for diversity, complexity, and simultaneity in extraordinary situations as opposed to the dominant authoritarian narrative of the planned public space. Therefore, this paper situates within a larger discussion about alternative space-making processes in the city from the ground-up which reflects in the long-standing ontological debate over use and value of public space.



# **URBAN CORNERS IN GUANGZHOU: DESIGN, MORPHOLOGY AND EVERYDAY USE, 1757–1949**

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**Dr Fei Chen**

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## **Abstract**

Urban street corners are a form of public space. They provide the setting for the 'street culture' of urban commoners while also being often a targeted space for top-down urban design interventions in Chinese cities. Yet to date, little has been written about how this type of space has emerged and developed from an historical perspective. Addressing this gap, this paper presents a historical study of the spatial forms of urban corners in Guangzhou, China. Inspired by the Everyday Urbanism paradigm, the paper aims to explore how urban design and everyday life brought about and reacted to changes of the morphology of urban corners. The study has proposed a three-fold framework through which three key dimensions of analysis would be carried out: design governance, morphological characteristics, and everyday use. This examination is built on the transformation process of urban form in the city from 1757 to 1949, using such historical sources as historical maps, official planning documents, old photographs and drawings, private written records, and relevant literature. Findings suggest that there were various types of urban corners, such as 'main street corner', 'city-wall corner', 'bridge-front corner', and 'alleyway corner', emerging in the traditional urban form of Guangzhou. These spaces were dramatically transformed in the early twentieth century, a transformation that resulted from the contest between the Modernist planning strategies of local authority and the tactics of ordinary citizens. It concludes by discussing the urban corner as an alternative approach that helps us better understand the social production of space and support people's daily life.

# URBAN DESIGN THINKING OF EARLY MODERNIST PIONEER ARCHITECTS

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**Prof. Hao Deng**

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## Abstract

Before the Athenian Charter advocated by Le Corbusier, for the early modernist architectural pioneers, modernism was a new style of architecture that conformed to the spirit of the times, and did not touch on the transformation of urban planning. After the Athens Charter, the existence value and evolution logic of classical urban texture began to be questioned and then subverted. Modernist ideas were not only reflected in architecture, but also began to be reflected in urban planning, and then quickly spread to the pattern of urban form. A historical phenomenon that may have been overlooked should perhaps draw our attention to the fact that the early modernist pioneer architects, despite their distinctly different formal character from classical architecture, did not work in isolation from the city, but in a clear response and synergy to the overall context and surrounding buildings, encompassing a simple urban design thinking and urban form ideology.

This paper will analyze the works of early modernist architects Adolf Loos and Giuseppe Terragni from an urban perspective through case studies, literature studies and historical comparisons.

The background of classical architecture education and the acceptance of modernist ideas make the architectural creations of early modernist pioneer architects show a characteristic, that is, the building itself has a distinct modernist style, but at the same time it focused on harmonising with the urban fabric and street interface.

Modernism has the rationality of the times, and it harms the existing traditional urban form more in the way of naive functionalism than on the architectural scale. The exploration of the urban thinking of early modernist pioneer architects will help us to understand modernist architecture more comprehensively from the perspective of urban morphology, and remind contemporary architects of the importance of understanding the overall thinking of the city and guide their practice.

## **RE-THINKING THE PHENOMENON OF CITYSCAPES IN MASS HOUSING DISTRICTS (VILNIUS CASE)**

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**Mr. Simonas Kazlauskas**

*Aketuri architektai, UAB*

### **Abstract**

The phenomenon of industrial mass housing construction, which was born under the influence of the ideas of modernism, acquired an unprecedented scale in the socialist countries in the second half of the 20th century. The legacy of the construction of that time no longer meets the needs of modern society and forces us to rethink the fate of such neighbourhoods. The study examines the peculiarities of the external and internal cityscapes of industrial mass housing areas and states that the external cityscapes of these areas are sufficiently characteristic and recognizable, but the interiors are leveled and almost indistinguishable from each other. The authors of the research identify and compare valuable / unique characteristics of traditional and modern cityscapes and their unjustified / negative features. A toolbox that can be used to rethink the urban architectural concept of such districts is suggested.

The research is carried out in Vilnius. The Karoliniškės residential area (construction year 1970-1976) is chosen to apply the means of rethinking measures to the aforementioned phenomenon, hiding, under the standardized architectural expression of the district, the motivations which are carefully considered by the authors K. Balėnas, G. Balėnienė and which may serve the further shaping of the visual identity of Vilnius.

# RIABITARE ALICIA. THROUGH DIFFERENT SHAPES AND SCALES OF URBAN REGENERATION IN SALEMI

**Prof. Roberto Dini**

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**Dr Valerio Della Scala**

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## Abstract

The Belice area - which historically constituted an isotropic aggregate in terms of productive vocation, population density and settlement models - is today the result of the transformations following the tragic earthquake (1968). Nowadays, these micro-region characteristics appear significant within the national reflection on the inner areas in Italy. A reflection where Salemi may be considered as a central node during the last few decades for a series of regenerative experiments. The traumatic event undermined the consolidated relationships between the elements of the system, generating new transformative margins: new forms of living, new hierarchies and connections. In this frame, the local administration adopted a policy of acquiring urban lots, pushing for a possible recovery of the historic centre, formerly called Alicia. The research *Riabitare Alicia* - started a few years ago through didactical actions and on-field work, and subsequently formalized in 2020 with funding from the Sicily Foundation - aims to shape a vision for the future of the ancient village: a series of strategic images presenting variable scales and geometries, from territorial to urban and architectural dimensions. Salemi is therefore considered as an open-air urban regeneration laboratory: if on the one hand, the problematization of some issues on a micro-regional scale contributed to the construction of different transformation scenarios for the city - tourism and culture, research, food and wine production - complementary to each other, on the other hand, we proposed a series of guidelines that insist more on the shape of the space, with the precise intention of considering the tools characterizing the project itself. Indeed, the research focused on the link between physical and actor networks, between economies and landscape, single building and urban system, trying to stimulate possible reactivation responses through the lens of the architectural project - understood as an increasingly complex entity.

# **ISUF VS. HERSUS GLOSSARY: CORRELATING URBAN MORPHOLOGY TO HERITAGE AWARENESS AND SUSTAINABILITY OF BUILT ENVIRONMENT**

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*University of Belgrade - Faculty of Architecture*

**Dr Mladen Pešić**

*University of Belgrade - Faculty of Architecture*

## **Abstract**

This paper builds on the intellectual outputs of the project titled *Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education* (HERSUS), coordinated by the 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 the University of Sevilla – UNESCO Chair on Built Urban Heritage CREhAR in the digital era.

The focus of the paper is in mapping the index of concepts between ISUF Glossary and the glossary produced within HERSUS project, that will enable the comparison of the discourse in Heritage and Sustainability with the discourse of Morphological Research. The purpose of this paper is to see through the comparison of the terms from both glossaries and hence contribute to the discussion of terminology, specifically regarding RE-terms (reuse, resilience, reconstruction), that were initially set as guiding tracks of the HERSUS project.

The conclusions related to the interlink between ISUF and HERSUS glossaries will be perceived as important inputs for tag matrix upgrade, relevant for the future use of HERSUS Sharing platform (open repository of ideas), that could strengthen the role of morphological approaches in research and in architectural and urban design projects related to heritage awareness and sustainability of built environment.

# **INTELLECTUAL HERITAGE OF MORPHOLOGICAL STUDIES IN BELGRADE, SERBIA: REVIEW OF ACADEMIC AND PRACTICAL THOUGHTS AND ACTIONS TOWARDS UNDERSTANDING SPATIAL TRANSFORMATIONS**

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## **Abstract**

This paper strives to establish review of academic and practical thoughts and actions within the scope of urban morphology in Belgrade, Serbia challenging following research questions: (a) What kind of theoretical and methodological approaches have emerged in local context over time, and (b) On which manner these approaches reflect, confirm, or deny emerging interpretations around global research landscape in spatial transformation? The research has both practical and theoretical impetus and is based on the belief that research on locally specific approaches on the renewal processes is an important puzzle in understanding the global research agenda in the subject area and accordingly seeks to show the roots and precedents in the Serbian context.

The research engages literature review method through three steps: (1) selection of relevant bibliographic units (1969-2019), (2) content analysis of selected units, and (3) deriving key notions and actions. These sources will provide background for tracing the intellectual progression of the field on local level - key authorities and precedents. The paper will result – over the timeline – in the evolution of theoretical and practical reflection on morphological studies in a local context, in order to provide a new theoretical perspective for understanding past research and for guiding future actions, contributing to critical visions and disciplinary discussion.

# **PUBLICNESS OF THE BACK-SIDE SPACE: EXPERIENCES FROM THE RAILWAY STATION AREAS IN TOKYO, JAPAN**

**Dr Jingyao Dong**

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## **Abstract**

In the Japanese context, the natural spatial reference of the front (“omote” in Japanese) and back (“ura” in Japanese) is of great significance in recognizing the urban space. It is the interwoven with both front and back-side space that makes up the various, ambiguous, and viable urban fabric in Tokyo. However, most of the previous studies only focused on the front-side space. The ignored back-side space should be taken into consideration in the discourse of the urban fabric, especially in the dense and highly mixed urban areas. Through analyzing the phased development process of the designated sites, and the usage and management of the back-side space correspondingly, this research attempts to reveal the potential of the back-side space as a public place.

Shibuya station area, Shinjuku station area, and Jinbocho station area were selected as the main research sites. By extended literature research and field investigations, 4-5 phases of development for each site from the viewpoint of front and back were teased out. Then, the usage and management of the back-side space during the event days and non-event days were investigated for comparing analysis of the publicness.

Consequently, the discordance of the places for certain activities and the acknowledged public space is demonstrated empirically. There are more and more restrictions towards the usage of the back-side space in general, while the publicness of some back-side space was highly increased, especially on the event days. This study argued the essential role played by the back-side space in the urban fabric in Tokyo and claimed their potential for public activities in the dense urban area. The results provide references for considering the existing back-side space during the urban revitalisation.

# DYNAMIC PLACE ATTACHMENT AS ENABLER IN REDEVELOPMENT PROGRAMS OF SINGAPORE PUBLIC HOUSING NEIGHBORHOODS

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**Dr Zdravko Trivic**

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## Abstract

**Background.** In Singapore, characterized by land scarcity, rapidly changing demographic conditions, and strong social and ethnic integration policies, over 80% of population lives in public-housing. Massive urban regeneration-induced displacement programs, including village clearance until 1990, Selective En-bloc Scheme (SERS) ongoing since 1995, and Voluntary Early Redevelopment Scheme (VERS) expected from late 2030s, have historically shaped the physical and societal environments, and are expected to intensify in the coming decades.

**Objectives.** Due to such rising uncertainty and change, this paper highlights the harmful disruptions to communities' place-attachment, and seeks to illuminate complex people-place relations. We hypothesize that the occurrence of place-attachment relates to presence, function and continuity of the adaptive socio-ecological system, which promotes it. We ask: What are the key-components and structure of this socio-ecological system? How can it promote dynamic occurrence of place-attachment and shape better redevelopment/relocation processes and impacts?

**Method.** We propose an original conceptual framework to capture dynamic nature of place-attachment at displacement, comprising four interdependent dimensions of the socio-ecological system, with a heart at their intersection, namely: *socio-spatial network*, *community ties*, *engagement/negotiation*, and *continuity/familiarity*. Through theories of assemblages and affordances we aim to explain dynamic interrelations between these components, and how residents negotiate the place to acquire affordances and construct place-meanings. A pilot study was conducted in Tanglin Halt neighborhood, currently undergoing its third displacement project. It included policy-review, spatial-mapping and analysis, first-person observations, 137 surveys with local residents and visitors, and 39 interviews and/or group discussions.

**Findings.** Key-findings indicate that displacement, as a major event in residents' lives, triggers both grief and anticipation. Furthermore, they highlight the continuous role of built-environment, socio-spatial heart in particular, in dynamically constructing place-attachment over-time, being the vital contributors to socio-ecological system's resilience.

**Conclusions.** Considering dynamic (rather than stagnant) nature of place-attachment can improve future relocation policies/processes and enable mobility.



# **RESEARCH STUDY: A MORPHOLOGICAL APPROACH FOR COMPARATIVE ANALYSIS BETWEEN HOUSING ESTATES AND THEIR ‘ORDINARY PERIPHERIES’**

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## **Abstract**

Housing estates, as characteristic modernist forms of urban growth, have been object of debate and criticism since their great profusion in the mid-twentieth century. Today, the discussion focuses on their obsolescence processes. However, in most cases these estates are still studied as singular objects, even when the urban fabric has grown and somehow absorb them. It is argued that the development of comprehensive diagnoses that can support the elaboration of integrated urban regeneration strategies, depends on the consideration of these forms of urban growth within their current context. This paper proposes a methodology to analyze two main processes of urban growth in the first residential periphery of our cities: i. the actions planned, projected, and built in a unitary way -housing estates-; and ii. the ‘ordinary periphery’, or the residential fabrics resulting from a gradual growth of the city, more or less planned, and closer to the traditional structures based on streets, street blocks and plots. An evolutionary and multi-scalar analysis is proposed, including the morphological study of the city, neighbourhood, and different fragments (housing estate and ordinary periphery), and addressing the perception and use of open space. The methodology is applied into three case studies in Zaragoza, Spain. It is argued that this morphological approach can contribute to a more comprehensive understanding of these urban forms and their dynamics of change.

# THE ROLE OF THE OPEN PUBLIC SPACES DURING THE PANDEMIC: A CASE STUDY OF “PARQUE IBIRAPUERA”

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## Abstract

2022 was the third consecutive year for which the COVID-19 pandemic has lasted. Social distancing, the main strategy adopted to prevent the spread of the virus, has intensified a behavior change described by Ascher (2001) in “The principles of new urbanism”: while people started to do their activities digitally - from working and shopping products and groceries online, to having meetings and attending conferences - the act of physically being present in a given place or situation grows in importance. To walk on streets, to meet people in parks, to see and be seen by others, and a myriad of other outdoor activities have become essential for maintaining civic behavior, mental health, and the tightening of interpersonal relationships. Understanding how these changes affect cities in its future transformations is crucial. Attempting to explore this domain in depth, this paper will do a case study about “Parque Ibirapuera” - the most visited park in Latin America, located in São Paulo (Brazil), the fourth most populated metropolis of the world - to show changes in its visitors' behaviors which have resulted in adaptations of the park's facilities. Photos, croquis, and news articles regarding the site before and during the COVID-19 pandemic will be used for comparative purposes amidst this analysis. A bibliographical revision of documents surrounding “Parque Ibirapuera”'s context and purpose for the city around it will be made in this research to achieve the best possible comprehension of the park's specifications, but also to highlight its importance in São Paulo, a global city. This paper aims to produce comparisons between the Brazilian city and other urbanities in other countries, and to support the construction of cities better suited to handle situations such as the incurring global pandemic.

# **DIRECTIONS OF URBAN REDEVELOPMENT OF POST-INDUSTRIAL AREAS IN ŁÓDŹ IN THE 21ST CENTURY**

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## **Dr Łukasz Musiaka**

*University of Lodz, Faculty of Geographical Sciences, Department of Political and Historical Geography and Regional Studies*

## **Dr Magdalena Baranowska-Deptuła**

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## **Abstract**

After the decline of the textile industry as a result of the political transformation processes in the 1990s, Łódź found itself in a huge socio-economic crisis. The shutdown of most of the factories have arosed the problem of degradation processes of an unused post-industrial fabric. One of the ways of urban regeneration of former plants was to launch revitalisation processes. Apart from the success of the functional and spatial transformation, many post-industrial areas in Łódź are still struggling with many problems and the lack of a coherent vision for the revitalisation process. On the example of two historic post-industrial complexes, namely Poznański's (today's Manufaktura) and Scheibler's (Księży Młyn) complex, the authors analyse the process of revitalisation of post-industrial areas in Łódź. They indicate the main directions of morphological and functional changes that took place after 1989 in this two famous industrial complexes in Lodz. The social, administrative and economic factors and processes influencing the different scope of revitalisation of the compared areas, in the context of an agent-based model, are also one of the research objects. Despite similar genesis and functions, the different scale of this former industrial complexes and different processes influencing their transformation resulted in extreme diversification of their contemporary functions, morphology and results of the revitalisation process.

# **NETWORKING PLACES FOR DAILY LIFE: SITUATION AND VISION OF MULTIPLE LEVELED PUBLIC SPACE IN SHANGHAI'S HISTORICAL NEIGHBORHOOD**

**Ms. Diya Fu**

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**Dr Kai Xu**

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## **Abstract**

Public space composed of elements in rich hierarchies is a key identification of Chinese historic cities, which is highly different from European ones. Such hierarchic system, which used to provide greatly diverse living scenes for daily life, is unfortunately neglected and harmed in the current urban development in China. Identifying, restoring and activating such system shall be recognized as main task of urban regeneration in Chinese cities, especially in those residential neighborhoods. This paper adopts the typo-morphological methods of the Conzen School and the Muratori School on 3 most representative historical residential neighborhoods in Shanghai: Caoyang Community, Xinhua Community and Siping Community, with the focus to explore the identifications of their public space system. The findings are: 1) Hierarchies in public space widely exist in these neighborhoods, which is composed by the road networks, which serve as main level of public space, and various types of public space which serve as secondary or tertiary level; 2) The morphological characteristics of public spaces at each level are greatly different. So are the mechanisms of their spatial organization; 3) The public activities undertaken by public spaces at different levels are different, and people's daily life mainly occurs in secondary or tertiary public levels of public space. The study proposes that, to enrich and improve such hierarchic system shall be the main goal of urban regeneration, while those public space in secondary and tertiary levels shall be given special attention. Following regeneration strategies are put forwards: 1) to activate urban nodes; 2) to activate unnoticed streets; and 3) to form inner streets within existing blocks. Urban regeneration cases are introduced and evaluated according to aforementioned criterions.

# MULTISCALE AND MULTI-TEMPORAL MODELLING OF URBAN CHANGE STRUCTURES IN THE SUBARCTIC EAST SIBERIAN METROPOLIS OF YAKUTSK

## **Prof. Sébastien Gadal**

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## **Abstract**

In the last twenty years, the Metropolis of Yakutsk has experienced significant changes characterised by intense urban growth, densification, and urban structure changes in a complex geographical environment: extremely low temperature during six to seven months, impacts of permafrost dynamics and relative melting, seasonal exposure to ice breakup on the suburban areas. The urban structure and land-use changes conditioned by the urban growth and environmental impacts are analysed at two geographic scales: the meso-urban level with the use of the Landsat-5 TM, Landsat-8 OLI, and Sentinel-2 MSI satellites images covering the period 2001 to 2021; and at the regional level with the DMSP-OLS PL (1995-2013) and VIIR-DNB (2015-2021) sensors. The recognition of the urban structures and land use transformations at both scales are based on the use of the combined machine and deep learning data processing. The results show that the trends that induced spatial variations in different land-use classes changed over time, revealing different spatial and temporal dynamics of land use in Yakutsk Metropolis: reduction of vegetation, forests areas (due to fire forests) and agriculture zones; the increase of bare soil, water surfaces and urban areas with news districts (blocks, dacha's suburbs, etc). The interrelationships between fire forests, environmental changes, and the urban expansion of the metropolis of Yakutsk are based on the association of two indexes: the NDBI and the NDVI calculated from the Landsat and Sentinel 2 data; with the HIS and VANUI indexes from DMSP and VIIRS images. The simulations of the urban structures and land use evolutions to 2030 at the meso-urban and regional scales by Markov chain cellular automata give similar results of the future trends of the Yakutsk metropolis. The results can be considered as effective support for the decision making in urban management and planning of the Yakutsk metropolis.

# THE USAGE OF THE "GENERIC CITY" CONCEPT AND ITS INDICATORS FOR A COMPARATIVE ANALYSIS OF BALTIC URBAN AREAS (PÄRNU, LIEPĀJA AND KLAIPĒDA)

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## **Prof. Kęstutis Zaleckis**

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## **Abstract**

The concept of "Generic City" is used in space syntax to model the levels of "functioning" (interactions, flows, impacts of spatial, urban, and territorial structures and organisations) of cities. Its associated indicators allow for additional comparison and classification possibilities of structural planning and urban structure's assessments, in a context where public policymaking requires more and more knowledge about cities in terms of connectivity, centrality, accessibility, etc.

In this presentation, we examine the "Generic City" concept relevance and its expansions, by comparing three Baltic cities (Klaipėda, Liepāja and Pärnu) and their respective administrative regions (Klaipėdos apskritis, Dienvidkurzemes novads and Pärnumaa). To explain the current urban structures, largely determined by the political and economic context of the last decades, we compare the angular integration and angular choice indicators of road networks of the three study areas. These indicators have been standardised to compare cities and regions of different sizes and subjected to the "Radius-Radius" method to eliminate edge effects. Their robustness has also been tested (Pearsons correlation with a significance of 0.01).

The results of the modelling show trend in terms of concentration, accessibility, intensity, intelligibility, and potential movement characterised by homogeneity and continuity of networks, and low fragmentation between city centres and peripheries. A weak correlation between the indicators of the "Generic City" and amenities (shops, leisure facilities, public services, etc.) shows the insufficiency and inadequacy of the concept modelled in terms of centre-periphery logic on urban structures emanating from the superposition of Prussian, Soviet, post-Soviet influences in the territorial organisation. This hypothesis is more relevant with the used of local indicators such as the Metric Reach, which demonstrates their robustness in the analysis of urban structures. The local indicators for the expansion of the model are proposed and validated in the presentation.

# MORPHOLOGICAL REGIONALIZATION FOR THE URBAN RENOVATION AGENDA IN DAEGU, SOUTH KOREA

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**Prof. Thorsten Schuetze**

*Sungkyunkwan University Department of Architecture*

## **Abstract**

Following the maturation of Korean cities, urban renovation has become the main concern of urban policies. While large wholesale redevelopment continues to address decay from a purely physical point of view, the new urban regeneration policies (Korean 'dosi jaeseng') propose a holistic threefold approach to urban decline: physical, social and economic. Redevelopment projects opportunistically target decaying areas with good economic prospects while regeneration projects tend to support areas that cannot get redeveloped. In both cases, project areas are defined by factors independent from urban form: adequate business size, successful negotiation with owners, generic statistical criterion, legal surface thresholds, project strategy, etc. As a result, the urban fabric is increasingly fragmented and losing its coherence. High-rise redevelopments appear at random in an overall low-rise fabric. Regeneration initiatives concentrate on a few project items rather than addressing the management of coherent urban entities.

The lack of acknowledgement of urban form – reduced to vague notions such as 'old city', 'congested residential area' or 'decayed region' – is damageable to the overall urban management agenda. To better connect urban renovation with urban form, it is necessary to better identify the various urban tissues composing large cities such as Daegu.

This research develops a large-scale morphological regionalization for the city of Daegu based on the numerical taxonomy process developed by Martin Fleischmann, cross-checked with historical and functional mapping as well as direct observation. The results are compared to the current urban project area in the city to assess correlations. Finally, propositions for more adequate project zoning, size and types are discussed.

# **PROXIMITY AND TEMPORALITY: THE ROLE OF WEEKLY MARKETS IN THE FOOD SYSTEM IN METROPOLITAN BARCELONA**

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## **Abstract**

Barcelona's food system responds to a unique supply model. The 36 municipalities that compose the metropolis have maintained a historic commitment to guarantee citizens' access to fresh food and has been strengthened over time: the infrastructure of food providers is supported by 90 public market halls and 73 weekly open-air markets. The offer is complemented by a scattered constellation of premises made up of grocery stores and supermarkets, so that food suppliers, in a number of 12,108 represent a 13.5% of the commercial metropolitan fabric.

This paper analyses the role of weekly markets in the food supply system, understanding their form, measures and urban role in relation to market halls and other grocery stores (to fill the gaps in the system or to complement existing nodes). The quantitative approach (in relation to the population they serve, the area they occupy, the distances they are from other providers) and qualitative (about what types of food and what variety they offer) is based on drawings made by the authors that try to capture the architectural and urban role of food suppliers.

At a time when proximity has set the agenda of urban interventions; and in which tactical and strategic urban planning are part of the ongoing transformations, looking at this ephemeral formalization of commerce seems to acquire a structural meaning for urban form. The topic addressed is part of an investigation started three years ago that relates the urban form of Barcelona with the food supply system. This look at the existing weekly markets aims to prove the effectiveness of these pieces as tools to strengthen the metropolitan food system.



# CHANGE IN URBAN FORM ALONG STREETS IN HISTORIC CITIES WITH RELIGIOUS CORES

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## Abstract

Many historic cities have traditionally developed around religious cores. These cities have tourist influx owing to their heritage value or religious rituals. With growing demands of tourists, urban form of the core changes. Research is needed to understand the change along streets in religious cores. The study objective is to understand the change in urban form along streets in historic cities with religious cores in different contexts. The research paradigm adopted is interpretivism and two cities- a Cathedral city of Europe (Trondheim, Norway) and a Temple city of Asia (Thanjavur, India) - are studied. In Trondheim, data collection involves photographs of existing buildings and historic data derived from archival sources. In Thanjavur, data collection involves photographs of existing buildings and historic data derived from questionnaire survey of residents. The findings show the nature of changes along streets, the possible causal change agents, and the differences in the two contexts. In Thanjavur, the change is triggered by gentrification induced by religious tourist influx. The religiousness of the core is found to bring about increase in specific type of buildings. However, the change is less triggered by the religious reasons in the case of Trondheim. Though both cities are historic cities with religious cores attracting tourists, the change is driven by different factors. The difference can be attributed to a social determinant of 'religious faith' in Thanjavur and absence of it in the secular conditions of Trondheim. The findings could add to theory by introducing a socially placed 'sacred' phenomena causing changes in urban form in Temple cities of Asia as opposed to Cathedral cities of Europe. There are few studies comparing the changes in urban form in historic cities with religious cores. The findings contribute to this niche and presents a methodology which can be used in future studies as well.

# **COMBINED ACCESSIBILITY INDEX (CAI) FOR PUBLIC TRANSPORT NETWORKS. THE CASE OF DONOSTIA / SAN SEBASTIÁN.**

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*RAZ. Digital tools for urban innovation*

## **Abstract**

In 2021, the city of Donostia / San Sebastián commissioned us to work on a project called *Datorren Donostia* (upcoming San Sebastian). Two new central metro stations are expected to be operational by 2025, and the city wants to rethink the mobility guidelines in the most central areas of the city. This implies the reduction of the space for cars but also the partial redesign of the bus network, which was our main task.

To properly evaluate the strengths and weaknesses of the existing and the designed public transport networks, we proposed a new Accessibility Index based on the accessibility indicators of the International Transport Forum (ITF). In the first part of the article, we argue the reasons behind the need to adapt the ITF indicators for this particular case, and we explain the formulation of the proposed index, which we called Combined Accessibility Index (CAI).

We used the CAI as an indicator for different scenarios during the redesign of the bus network. The Mobility Department of the City Hall of San Sebastian and several external advisors were also involved. The CAI, along with the graphic material generated, allowed us, on the one hand, to detect the most underserved trip motivations and neighbourhoods and, on the other hand, to assess our proposals during the bus network redesign process. In the second part of the article, we explain the stages of this process, including the initial findings, the main discussion topics, the final design decisions, and the data-driven graphic material.

The article concludes with a general reflexion about the adaptability of existing public transport networks, and about the need to propose innovative ways to evaluate them and to help them evolve.

# FROM MAPS TO DIAGRAMS. A MORPHOLOGICAL TOOL TO UNRAVEL TRANSITIONAL PROCESSES

**Ms. Rossella Gugliotta**

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## **Abstract**

Studying the regeneration and revitalisation of urban tissues means addressing transitional changes as processes throughout time.

Traditional methods in the Italian morphological theory aimed to develop a qualitative and conjectural approach to discover transitional law within the city. In their structural method, maps are a fundamental tool to study the process and to operate in the future urban regeneration. They provide a first interpretation of what changes and stays fixed inside the city. Nowadays, there is a shift throughout quantitative methods that use artificial intelligence and mathematics to define numbers in urban changes. However, a gap exists between traditional studies about quality and new quantitative methodologies. In this context, the research questions if the map is still a valuable tool in representing and understanding the city. The following research investigates maps developing their diagrammatical components to link traditional approaches and new perspectives on the field.

The starting point is the analysis of maps of three Italian cities: Venice (Saverio Muratori), Como (Gianfranco Caniggia), and Turin (Augusto Cavallari-Murat). In those cities, the masters of the Italian school developed an incremental diagrammatic approach to analysing and mapping urban phenomena. By decomposing the three maps, it is possible to define the temporal, symbolic and diagrammatic components that make these maps a tool for studying urban change within a future projection of the city's imagination.

The research improves map components that can help visualise the qualitative method more completely, working on diagrammatic elements of the tool. This approach is a starting point for developing a methodology and a tool on urban morphology focused on identifying transitional events. The final output is a matrix (in a diagram) to read the city that can fill the gap between the traditional method and innovative AI tools.

# CHINESE ECONOMIC TRANSITION AND THE EVOLUTION OF LIUHUA CLOTHING WHOLESALE DISTRICT IN GUANGZHOU

**Ms. Fangjie Guo**

*The University of Sheffield*

## **Abstract**

Communist country China's post-1978 radical economic transition led to extraordinary morphological and functional changes in urban space. Dramatic changes resulting from the economic transition from centralized administrative allocation to the commercialization of land, suddenly endow space with distinct capital values; accordingly, spaces are linked to different functions.

The Liuhua Clothing Wholesale District in Guangzhou offers the researcher an opportunity for the re-examination of morphological changes in accordance with these dramatic urban renewal processes under economic transition. It is the Liuhua District's position on the south of the large transportation hub Guangzhou Railway Station that started the rapid growth of a brand-new clothing wholesale district. The deficiency of urban planning (Yeh, 2004) created the local conditions for the development of an re-articulated, efficiently integrated, organic commercial district.

This research aims to unravel the impact of economic and functional changes related to Liuhua District's urban renewal processes with Actor-Network-Theory. For research design, grounded theory makes it possible to build up arguments on research data. Research data are obtained through methods including archive research, semi-structured interview and mapping. Archives including policies and historical maps enable the investigation of the Liuhua District's evolving processes and morphological changes. Semi-structured interview is adopted to collect information about experience and memories on economic and functional changes; the interviews were conducted with 40 people of distinct professions in Liuhua District. Mapping is adopted for recording and representing spatial changes. For data analysis, graphic and nongraphic materials are coded to draw themes. This research will contribute to a critical understanding on how economic and functional changes impact urban renewal processes in Chinese context.

# **VISIBLE AND INVISIBLE IMPACTS FROM SOCIAL FORCES: THE REDEVELOPMENT OF LIUHUA CLOTHING WHOLESALE DISTRICT IN GUANGZHOU, CHINA**

**Ms. Fangjie Guo**

*The University of Sheffield*

## **Abstract**

Discussions of social forces' influence on physical structures have conventionally centered on visible changes. However, social forces can bring physical structures not only visible changes, but also invisible spatial relation changes. Sometimes though physical structures maintain the same, the spatial relations have largely changed. To understand urban redevelopment process, discussions should be developed both on physical structures' visible changes and invisible spatial relation changes.

After the implementation of Reform and Opening Up policies in China in 1978, Guangzhou Railway Station attracted large flows of migrants for clothing wholesale around it. As a result, during 1990s, Liuhua District was transformed into a prosperous clothing wholesale district: new clothing wholesale buildings were constructed; existing buildings were repurposed for clothing wholesale. However, after years of redevelopment, the attraction of Guangzhou Railway Station is decreasing, and is no longer the most central actor in the district. Instead, the first clothing wholesale buildings become the most central actors with high attraction to customers from all over the world. The spatial relations of physical structures have changed in the urban redevelopment.

The research takes Liuhua District as an example to understand how social forces affect physical structures on both visible and invisible aspects with Actor-Network-Theory. The research design employs grounded theory; research methods include archive research, semi-structured interview, observation and mapping. Archives including historical maps are employed to investigate urban form changes. Interview and observation are used to collect traces of social forces; the interviews were conducted with 40 people of distinct professions in Liuhua District. Mapping is for recording and representing visible and invisible relations. For data analysis, graphic and nongraphic materials are coded to draw themes. Through this empirical study, it is possible to recognize urban redevelopment for what it really is: an open and continuing process of physical and social changes.

# **A HISTORICO-GEOGRAPHICAL APPROACH OF FRINGE-BELT PHENOMENA IN KADIKÖY, ISTANBUL**

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## **Abstract**

Fringe-belts are significant in determining the spatial growth cycles and relationships of poly-centric cities such as Istanbul, where the rapid urbanization accelerated with the land-use changes. Kadıköy, located on the Anatolian side of Istanbul, is not only a primary transfer-cultural center and secondary central-business-area with its various transportation infrastructure, cultural activities and trade-service sectors, but also a primary urban transformation area, according to its population and construction status. While forming the outer fringe-belt of Istanbul until the mid-19th century, Kadıköy has undergone a renewal process especially for the last 20 years and become the focal point of urban transformation and revitalization projects with discovery of the ancient city by the infrastructure works in the region, 2018. This study targets the analysis of formation and modification of inner and middle fringe-belts of Moda Cape as Kadıköy's historic center and its immediate surroundings with the fixation lines, by correlating it with the region's historico-geographical background and direct/indirect actors causing them. Concordantly, while the 'fringe-belt theory' constitutes the methodology of study, the land utilizations of fringe-belt zones in Kadıköy were analyzed comparatively by overlaying the historical city-maps and periodic satellite images using also written sources, archeological and historical photos, and obtained data were digitized. To better understand these processes, the land utilizations, private-public uses, plot-building relations and number of buildings were examined in more detail on the basis of two plots from the city center. As a result of the study, it has been observed that the fringe-belt zones and fixation lines are mostly exposed to alienation, except for the north-western part of Kadıköy and coastal areas. The findings, while revealing whether fringe-belts should be recognized in urban policy-making and planning for the megacities with historical and natural heritage, question the role of fringe-belts within the scope of ongoing and future urban projects.

# URBANIZING THE PERIPHERIES: INFORMAL SETTLEMENTS AND THE RENEWAL OF THE URBAN TISSUE IN 20TH CENTURY VIENNA

**Dr Friedrich Hauer**

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**Mr. Andre Krammer**

*TU Wien, Urban Design Research Unit*

## Abstract

**Background:** At the end of WWI, a large part of Vienna's 2 million inhabitants was struck by famine, cold, disease and desperate housing conditions. In this precarious situation, more than 100000 urbanites resorted to self-empowerment. Illegal forest clearings, vegetable gardens and squats with primitive houses and sheds were expanding in the Danube floodplain and the alpine foothills, in the fields and wastelands around the city.

Albeit reduced in scale, this informal "colonization" would reoccur during the economic crisis of the Thirties and in the precarious years after WWII. While some settlements were cleared by the authorities, from the 1950s to the 1990s most former illegal structures were upgraded, connected to water-, power- and traffic infrastructure and legalized in terms of zoning and construction law.

**Aims and objectives / Methods:** The research project "Wien informell" elaborates on this largely unknown history of Vienna. It covers the period 1918 to present and studies the impact of informal urbanization on today's urban form, featuring:

- 1) a city-wide spatial reconstruction and quantification of informal settlements by GIS (1918/1938/1956/1976/2020)
- 2) a morphological analysis of selected entities, drawing up a typology in terms of spatial structures and land use, e.g. layouts derived from forest clearance, squatted fields or allotment patterns.
- 3) a study of typical transformation phenomena, especially 1950-1990 when most settlements underwent processes of social and physical upgrading and legal consolidation.

**Findings / Conclusions:** Our study highlights the striking quantitative and qualitative importance of informal urban development for a 20<sup>th</sup> century European capital, especially in terms of structuring post-war suburbanization. Moreover, it makes an interesting case in terms of legal and administrative conditions for the renewal of urban tissues. Not least, the evolution of Vienna's zoning laws demonstrates how the "facts on the ground" fed back into the legal containers of urban form—and vice versa.

# A STUDY ON COLOR APPLICATION AND PERCEPTION IN URBAN NEIGHBORHOOD RENEWAL BASED ON SIMULATION COMPARISON

**Mr. Fang He**

*Tongji University*

**Prof. Yong He**

*Tongji University*

**Prof. Liang Sun**

*China University of Mining and Technology*

## Abstract

**Background:** Architectural color is an important part of urban form and one of the most important features of urban perception. In the urban fringe areas or micro-scale areas, color geography cannot effectively address the emotional needs of color diversity in the process of urban color renewal. It needs to develop a color research program combined with color psychology.

**Aim and objectives of the study:** For the emotional needs of architectural color diversity in the renewal of urban micro-scale areas, the correlation is determined between architectural color characteristics and main color perception, as well as the correlation is determined between different architectural color perception.

**Method:** First, this study based on several case studies to extracted the physical characteristics of architectural color in the renewal of urban micro-scale areas, then collected and established the semantic scale of architectural color perception. Second, the study extracted the typical spatial combination model to implanted 16 color schemes which in the urban neighborhoods as the experimental carrier. Third, the experiment was conducted on two occasions with 70 college students, which was an architectural color psychological perception experiment combined with VR technology and a questionnaire survey. Finally, statistical software was used to analyze the data.

**Findings:** In this study, the characteristics of architectural color design were discovered in the renewal of urban micro-scale areas. It was also discovered that different color schemes in the same urban space type will give people different emotional responses.

**Conclusions and Implications:** This study confirms that the changes in architectural color will produce emotional responses in the renewal of urban micro-scale areas, and explores the trends in color perception which are influenced by changes in architectural color features. While an effective way was found to quantify the difficult-to-control architectural color perception variables in the renewal of urban micro-scale areas. Fringe Belt Phenomenon in Chinese metropolis: A Case Study of Guangzhou



# FRINGE BELT PHENOMENON IN CHINESE METROPOLIS: A CASE STUDY OF GUANGZHOU

**Ms. Siliang He**

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**Prof. Yinsheng Tian**

*School of Architecture, South China University of Technology*

## **Abstract**

Previous urban morphology studies have proved that fringe belt has historical and cultural value, ecological value and recreational value. Due to the difference of economic and political system, the fringe belt has not been paid much attention in China, leading to the lack of indigenous case study that contribute to urban planning.

Guangzhou is the central city of South China, of which core area has remained unchanged for more than two thousand years. In modern era, the ancient city wall was demolished and roads were built on the wall base. The removed city wall had a persistent influence on the form and layout of the fringe belt. For another, the water lane in Guangzhou is dense, and the watercourse plays a great role in shaping the fringe belt. These factors make the formation and evolution process of Guangzhou fringe belt different from other cities, therefore it is a representative case of Chinese fringe belt research.

Based on the integration and analysis of historical materials of the city, author summarizes the morphological development background as well as divides the formation and transformation period of the fringe belt. In accordance with historical maps, remote sensing images and urban planning atlas, the evolution graph of fringe belt in diverse stages of Guangzhou were drawn, and the morphological characteristics and evolution mechanism of fringe belt in these stages were analyzed.

The study found that the most essential and major component of Guangzhou fringe belt is industrial land, and the waterway fixation line has a profound influence on the continuous industrial belt. Meanwhile, the proportion of open space in the fringe belt is increasing by years. By understanding the process of urban development and regeneration, rapid industrial growth since 1949 and the Pearl River made great contribution to multiple stages and different morphological characteristics.

# "LANDSCAPE" AND ITS ATLAS ANALYSIS OF COASTAL HERITAGE CITIES IN CHINA

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13335016772

## Abstract

**Background:** With the emphasis "Cultural Landscape" and "Historic Urban Landscape (HUL)" by UNESCO in recent years, more and more historical towns have been selected as World Heritage Sites. For UNESCO principal of "integrity", their townscape share a common morphological characteristic of unified urban textures. In other words, the heritage towns usually have acquired a "landscape sense " that have more relative with nature than the traditional "townscape". Especially, along the coastal area, due to the hills and coastlines, the historical towns here are more likely to have "Landscape" sense than flatland. As example, in China, both new heritage towns (Kulangsu2016, Quanzhou2021) are located in the coastal area.

**Aim and objectives of the study:** The paper propose the general commonality of the Chinese coastal heritage towns landscape, and the special local tradition of each town.

**Method:** The paper takes two newly Chinese coastal heritage cities as the research object, Kulangsu and Quanzhou, focus the relationship of urban morphology and topography, to understand their morphological characteristics and its atlas analysis. At the micro level, using the Muratori-Caniggia school method, to draw the maps of "building types" and "community fabrics", showing their close relationship and both of them derived from topography; At the macro level, using the Conzenian method to compare "fringe belts" and "fixation lines" which are formed under the influence of topography and Coastlines.

**Findings:** To the Coastal heritage cities, the "landscape" advocated by UNESCO can be considered as the result of the combination of Topography and Townscape.

**Conclusions and Implications:** The concept of urban morphology, which supported by "HUL", has become one of the most important heritage management tools of UNESCO, contributing to a better understanding, analysis and sustainable development of heritage towns.

## **DECISIVE FACTORS IN CHANGING THE URBAN SCENERY - OSLO AS AN EXAMPLE**

**Mr. Odd Iglebaek**

*Freelance journalist and architect*

### **Abstract**

Urban landscapes are in a continuous process of change. Mostly they are initiated by power-struggles and property-speculations, well wrapped in political or ideological terminology.

Oslo has a several hundred years long history of battles between the state and the town/municipality for ownership and use of key city-locations. Today, hospitals, new government offices, motorways and railway lines are high on this agenda.

Since 2008 Oslo has seen a bonanza in property prices. Prices have doubled. National as well as international companies, often located in overseas tax-havens, are involved. Only fragmented overviews of who are buying and selling, who the owners (shareholders) are and where they are located, are available.

95 % of all housing-unites in Oslo were until 1940 rented, owned by small and larger private landlords. Only 5% of the housing units were owner-occupancy. Also, from 1945 until 1982 more than half of all housing in Oslo were price-regulated and controlled through government policies. But this changed and in 2022 we can look back at 40 years with hardly any price-control or regulations.

37% of all homes in Oslo are now private owner-occupancy, more than 33% are owner-occupancy through housing co-operations and 30 % is for renting.

The total number of housing-unites are 347 000, of which 100 000 are for renting. Half of them is owned by companies, the other half by families. Any person in Norway can privately own five flats without having to pay wealth taxes. A total of 11 000 flats for renting are empty, probably mostly because the owners see them as investments.

However, even if owner-ship structure has changed formidable in the city the last decades, the class-division of Oslo - with the working class living in the east and middle class and the rich in the west, is still the same.

# THE RIGHT TO HOUSING: DIFFERENTIATION OF PRACTICES IN IMPLEMENTING RESETTLEMENT OF EMERGENCY HOUSING STOCK POLICY IN ARKHANGELSK

**Mr. Nikita Iskusov**

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Russian Federation*

## **Abstract**

The collapse of state socialism and turn toward neoliberalism have led to a reduction of state support for industries, investments into science and military activities causing a structural crisis in the Russian North. Associated with the crises out-migration was aggravated by aging and natural population decline (Eberstadt 2011) leading to depopulation and loss of social control over territories in the Russian Arctic except for the oil and gas provinces (Heleniak 2017). But the state policy has retained the declaration of power in the field of housing policy

Abandoned infrastructures and declining settlements are not solely 'monuments' of state socialism; they are also evidence of the current austerity, infrastructural underfunding, and the changing priorities of the Russian state (Bennett 2020). Moreover, depopulation, decay, and abandonment are not endemic to the Russian Far North but may be found in other parts of the Arctic (Heleniak, Turunen, & Wang 2020) due to the novel reterritorialization of economic and political power that entails the 'departure' of capital and the state (Dzenovska 2020).

Power is the same resource as infrastructure. Shrinkage and abandonment are spatially unequal (Mallah 2015). Also, power resources are unevenly distributed. In the current contribution, we focus on the distribution of power resources in a polarized urban space in the field of housing policy in the case of Arkhangelsk, Russia. State policy declares a monopoly on regulation in the field of housing policy. Against this background, we examine that practices in politics are differentiated and can be expressed by different actors through "nondecision". This leads to a government acting as a situational tactic rather than a strategy. And the very notion of power is not limited to local government.

# **METAMORPHOSIS OF CULTURAL IDENTITY OF TRADITIONAL AND NON-TRADITIONAL GATED COMMUNITIES: A STUDY OF VADODARA, INDIA**

**Prof. Advaita Jalan**

*School of Environmental Design and Architecture, Navrachana University*

## **Abstract**

The formation of the gated communities within and outside the walled city and western suburbs of Vadodara is influenced by the socio-cultural and socio-economic determinants. The period of last 35 to 40 years has witnessed a shift in social and economic values which has disintegrated the social construct of society at large. The concept of nuclear families has crept into Indian society vastly affecting the way housing typologies are designed and catered. This idea of urbanization has transformed these traditional forms of gated communities into modern housing essentially impairing the coherent urban fabric of the city, leading to an irreversible damage. The aim of this study is to understand the values establishing the cultural identity of the traditional and non-traditional gated communities within Vadodara and the factors influencing the shift in the typological manifestation of them. The objectives are: (i) To identify the socio-cultural and socio-economic values determining the process of redevelopment within existing urban fabric; (ii) To establish the relevance of context responsive aspects influencing the typological shift in the traditional gated communities. The method adopted for this paper is qualitative research based on interpretation of literature for identification of societal forces shaping built form followed by empirical study consisting of onsite observations, documentation of tangible and intangible aspects of built and unbuilt leading to a comparative study. The key findings from the study reflect the continuity in fundamental desire of communities seeking for security, safety, need for socializing and its influence on spatial development. The implications from findings establish the connect between the ever-changing dynamics of the societal ideologies, process of urbanization, and the constant need for transformation in the traditional and non-traditional gated communities.

# THE EVALUATION OF HEAT-MITIGATION STRATEGIES ON OUTDOOR HEAT STRESS IN THE WATERFRONT PUBLIC SPACES

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## **Prof. Saehoon Kim**

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## **Prof. Jae Seung Lee**

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## **Abstract**

Due to climate change, urban thermal discomfort has become a common concern for urban planners. Urban water bodies play an important role in the quality of urban public spaces, significantly influencing the urban microclimatic condition. However, poorly planned waterfront spaces worsen heat stress and block fresh airflow into urban areas. Given that the water bodies are a public asset for improving urban microclimate, the design process for waterfront areas should incorporate consideration of the urban thermal condition. Thus, the purpose of this study was to suggest heat-mitigation strategies for waterfront areas by evaluating the cooling effects of some design concepts. We focused on the following two heat mitigation strategies: 1) planning wind corridors and 2) creating diverse building height profiles. In this research, we compared the heat stress of outdoor spaces before and after applying each strategy on a hot summer day. Using ENVI-met, we modeled and simulated several models to measure air temperature, relative humidity, wind speed, mean radiant temperature, and physiological equivalent temperature (PET). From the results, we identified that the two design strategies had different effects on the heat environment. The 50-meter-wide wind corridor in the center of residential blocks had noticeable cooling effects on the thermal condition by improving outdoor ventilation. On the other hand, the outdoor thermal discomfort in residential blocks with varying building heights was worsened compared to homogeneous building heights. Therefore, our implications support urban planning for mitigating overheated urban areas.

# STUDY ON THE CHARACTERISTICS AND TRANSFORMATION OF CENTRIPETAL FORM OF PUBLIC SPACE IN CHINESE TRADITIONAL SETTLEMENTS

**Ms. Wei Jia**

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**Prof. Iijun Wang**

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## Abstract

Centrality is one of the common spatial morphological characteristics of settlements in ancient and modern times. In different regions and times, the centripetal form of public space in settlements has different manifestations. This paper collects a large number of traditional and modern public space Chinese settlements with centrality characteristics, analyzes them through morphological typology and spatial syntax theory, and establishes a spatial morphological atlas. It is found that in the transformation of the settlement public space with the characteristics of centripetal spatial morphology, the resource, clan spirit and communication needs are successively as the core link of the whole settlement, and they are projected into different centripetal spatial morphology types. In the primitive society, water wells and other resource were often the core of settlements. The layout of settlements sought to maximize resource utilization and defense efficiency, so the accessibility and average isovist compactness were high. In feudal society, clan spirit and blood relationship became the core of the settlement, and the center often presented a commemorative spatial form, and emphasized location and rank. Later, with the weakening of divinity and the increase of humanity in the life of the settlement, the sacred place symbolizing the spirit of the clan gradually evolved into a public space enhancing neighborhood communication and centripetal cohesion, and the average isovist drift within a specific range promoted the spontaneous participation behavior. Based on a large number of case studies, this study takes the centripetal form of public space in settlements as the breakthrough point, and provides a possibility to further understand the influence of non-material factors such as social culture on the level of spatial forms and types, and a new perspective for the study of Traditional Chinese settlements.

# COMMERCIAL GENTRIFICATION AND PEDESTRIANISATION: THE CASE OF JIE FANGBEI IN CHONGQING, CHINA

**Dr Min Jiang**

*Chongqing University*

## Abstract

**Background** Pedestrianisation has been a major approach to redevelop central areas of many large Chinese cities since the late 1990s. While their benefits in transportation, environment, and health have been widely researched, their socio-economic impacts, especially the commercial gentrification, still require further research under specific contexts.

**Aim and objectives of the study** This study aims to analyse the process and characteristics of the commercial gentrification under Chinese market economy through the case study of one pedestrianisation scheme in the central business district of Chongqing, China.

**Method** This study employs literature review (government policies, planning project documents, local records, and newspapers) and field study (site observation, random interview, and semi-structural interview) to reveal the transformation in the notion of pedestrianisation, physical environment, economic growth, sense of place and cultural activities.

**Findings** This study identifies three distinct phases of pedestrianisation purposes and guidelines whose focus changed from mobility to sustainability. Through the lens of commercial gentrification, the study finds that the physical environment of the pedestrianised area has experienced dramatic changes in its spatial forms with high-rise boom and decrease in the degree of mixed land uses. Also, many small local retail stores were replaced by international or national chain stores, accompanied by the rapid growth in rents and the value of the property. As the development of this area focused on commercial and tourism industry, this area has been transformed into a sightseeing spot and profoundly shifted its sense of place.

**Conclusions and Implications** In conclusion, this research contributes to existing commercial gentrification with Chinese experience which is characterised by dramatic changes in spatial forms and decrease in mixed land use. Also, besides the economic dimension of the commercial gentrification, the transformation in cultural dimension associated with globalisation and depoliticisation constitutes another feature of commercial gentrification under Chinese market economy.



# THE IMPACT OF FUNCTIONAL TRANSFORMATION ON THE RENEWAL OF URBAN RAILWAY HERITAGE: A CASE STUDY OF PUKOW RAILWAY STATION

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**Prof. Qi Zhou**

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## Abstract

As a representative of the urban modernization, railways have a great influence on the geographic and social space of cities. However, in the current urban renewal, especially after the socio-economic transformation of the 1990s, some historical railway stations and auxiliary facilities (such as squares, workers' housing areas, factories, inns, etc.) have lost their initial function and become a unique railway heritage in the city.

The paper clarifies the functional transformation of railway heritage and provides reasonable suggestions for the renewal of heritage areas. It takes Pukow Railway Station—the end station of the Tientsin-Pukow Railway built by the British in China during 1900s as an example, and analyzes the functional changes in the past century, especially the embarrassment and opportunities brought to this kind of railway heritage in recent 50 years. From the perspective of function, this paper compares the physical urban morphology, population settlement data, and economic development data of the station and the nearby area over the past 50 years.

The function of Pukow Railway Station and the people living nearby are no longer related to railway transportation, but gradually transformed into retail commerce and general city residents. The train station itself has also changed into a symbol of the times, attracting many citizens and tourists to visit and take photos. This area has become into a cultural and commercial district.

After losing its transportation function, the urban railway heritage needs to be infused with new uses in conjunction with spontaneous changes. While retaining historical and social values, appropriate functional changes are the way to combine with other urban spaces and become a new urban attraction.

# **COMPARISON ANALYSIS ON TYPICAL HISTORIC CULTURAL DISTRICT WITH AI DEEP LEARNING TECHNOLOGY - TAKING PORTUGUESE AND MACAU DISTRICTS AS EXAMPLE**

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**Dr Jianyi Zheng**

*Macau University of Science and Technology*

## **Abstract**

With the rapid development of technology, Artificial Intelligence (AI) has gone deeply into so many fields, especially the notion of "deep learning" technology with independent portrait ability. Would this be also beneficial to urban analysis and urban morphology research?

The research is aiming to introduce a new method of analyzing and comparing urban morphological patterns by using AI deep learning technology, exploring the possibility and potentiality of integrating urban morphological analysis with AI deep learning technology.

In this exploratory research it will be using a number of typical Portuguese urban districts with historic and cultural characteristics as the base material, which is fed into deep learning program with urban morphological mapping principle, the program will extract and characterize the key morphological elements from materials, namely street patterns, plot patterns and building patterns, establishing the learning baseline and portrait of Portuguese historic cultural districts, then using this baseline and portrait as analytical tool to compare with Macau's typical urban districts to identify the similarity on morphological level, and potentially provide morphological support for future urban planning and development.

# URBAN MORPHOLOGICAL CHANGES IN MODERN NINGBO: CULTURE CHANGE AND STREET SPACE

**Ms. Panpan Jin**

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## **Abstract**

The study of four emerging cities in modern China, Shanghai, Tianjin, Chongqing, and Wuhan, as the state's key social science research project in 1986, ushered in the rise of research on urban development history in modern China, which has yielded fruitful results in the study of single cities and regional urban history. The majority of monographs on single cities focus on their economic, political, cultural, and social aspects due to the frequent changes in the governmental system and the severe social and cultural conflicts in modern China. Among the cities studied, Ningbo has garnered considerable attention from researchers due to its history as a major trading city dating back to the Tang Dynasty and the fact that it is the first city in central China to open a port in modern times.

Current research on modern Ningbo city, however, continues to focus on commercial institutions and organizations, as well as emerging things such as missionaries and construction projects since the port's opening. To gain a holistic picture of the city's modernization process, it is required to evaluate urban growth in connection to urban space, to define spatial characteristics, and finally to examine the modernization of space and its interaction with social and cultural changes. On the basis of this new understanding and first-hand materials, such as local chronicles, this article re-examines the process of morphological change in Ningbo and its interaction with its representative culture, commercial and ritual culture from the 1840s to the 1930s, in order to make a case for a better and more complete understanding of the overall characteristics of China's early urban modernization transformation, and also to verify the social and cultural determinants of spatial development.

# **GENDER WALKS IN THE CITY: A STUDY ON GENDER-RESPONSIVE PLANNING AND NEIGHBOURHOOD DESIGN**

**Dr Jiayi Jin**

*Northumbria University*

**Dr Nadia Bertolino**

*Northumbria University*

**Ms. Kexin Huang**

*Northumbria University*

## **Abstract**

This research investigates gender walks as a possible method for knowledge-gathering in the urban planning and design process. The research is positioned within the field of gender-sensitive design, which aims to tackle gender inequalities in cities. The project ascertains the complexity of intersectional gender-aware design and therefore looks to utilise the potentials of walking - in its simplicity and effectiveness - as a responding strategy. A comparison of three existing gender walk practices and insights gained from the walks outlines the criteria for the initial design of an ideal gender walk method. The potential and limitation of the method are tested through its implementation, the analysis of the findings and the development of design responses with participants. The theoretical knowledge gained on gender-aware planning and the complexity of the issue in sociological perspective will provide support and critique for the ongoing City Centre Transformation Programme, to optimise public spaces for women's inclusion and enjoyment.

# **MORPHOLOGICAL CHARACTERISTICS OF THE WATERFRONT ANCIENT FORT SETTLEMENT IN THE SOUTHEAST OF SHANXI PROVINCE BASED ON SYSTEM THEORY: SPACE SYNTAX ANALYSES OF FORT DIJI IN THE QIN RIVER BASIN, CHINA**

**Dr Wanqi Jing**

*Tianjin University, China*

**Dr Chenyang Han**

*Tianjin University, China*

## **Abstract**

With the rapid urban expansion, morphology of the waterfront ancient fort settlement (WAFS) struggles to accommodate the changing needs of contemporary life. How to balance the relationship between spatial configuration protection and urban development are problems that need to be addressed in future. Taking WAFS as a complex system, this study analyzes morphological characteristics of Fort Dijī (Yangcheng County, Jincheng City, Shanxi Province, China) from three perspectives: interactions between system and external environment, the internal structure of the system and the spatiotemporal evolution of the system. Three kinds of Space Syntax analysis models (axial analysis, segment analysis, visibility graph analysis) were utilized to each proposed scenario, focusing on the parameters of integration, connectivity and topological depth. The results included: Poor traffic accessibility of the region hinders interactions with surrounding resources; narrow surrounding landscape space blocks peripheral vision; closeness of system is difficult to meet communication needs of modern life. The development process of the system presents three stages: “from chaos to order”, “from simple to complex” and “from flourish to decline”. Four aspects of sustainable development suggestions were further put forward: Expand urban road network; renovate the surrounding environment; optimize internal spatial structures; follow the law of historical continuity.

# **PLOT BY PLOT REVITALISATION. FORMER SLAUGHTERHOUSE AREA IN KRAKOW, POLAND**

**Prof. Anna Agata Kantarek**

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## **Abstract**

The main objective of this research is to map the morphological changes in a chosen area of Krakow (Poland) after the political changes in Poland and Eastern Europe in 1989. The development described was conditioned by changes in urban law in Poland, which led to a situation of no general rules at Masterplan level, what we have termed *plot-by-plot urbanism*.

The paper aims to show how the dynamic development implemented in this area without a Masterplan was guided by isolated administrative decisions, but which were subordinated to general rules regarding relationships to neighbouring plots, such as street lines, building envelopes and development at plot boundaries.

The analysis made it possible to observe different typologies of development forms and modes of investment.

The general description and findings concerning the morphology of the area demonstrate the extent to which the new infill development fits in with the historic form of the area.

The research was based on the analysis of cartographic materials and general information about the developments.

# PECULIARITIES AND PATHWAYS OF SINGLE-FAMILY HOUSING DEVELOPMENT IN RUSSIAN MAJOR CITIES

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## Abstract

The paper is aimed at exploring transformation scenarios for territories of single-family housing in Russian major cities. On this basis, an approach to their classification is being elaborated in order to address the issue of regulation of their further development. The model of the spatial city structure traditionally found in the countries of Global North (Alonso,1964; Bertaud&Renaud,1997) is not applicable to Russian cities due to the prolonged absence of a market economy: instead, the most dense and high-rise buildings are located on the periphery, while large fragments of single-family housing still remain in the central and middle parts of the city (Golovin et.al,2021). In these conditions detached housing typology is usually seen as an inefficient use of land – the need for redevelopment and diversification of such territories is discussed.

Despite similar urban form parameters, the territories of single-family housing can be differentiated depending on their location in the spatial city structure, distance from the centers of commercial activity, functional diversity, and mix with other housing typologies. Using methods of spatial and document analysis (land use and legal zoning regulations) I study various scenarios for the transformation of such territories in major Russian cities aiming at developing a sustainable decision-making process in regards to residential development.

The research shows that the revolutionary way of development of such territories is gaining prominence, where low-scale built environment is substituted with high-rise buildings without necessary infrastructure, and middle-rise housing typologies being not represented in the urban fabric. According to the results of land use analysis, it was revealed that in Russian major cities the share of territories occupied by single-family housing reaches 50%, somewhere reaching 70%. Meanwhile, existing approaches to regulation of these territories lack a vision of how urban environment should develop, and undervalue the effects of existing transformation scenarios.

## **REALITY VS REGULATION: INFORMAL PRACTICES OF SPATIAL DEVELOPMENT IN KRASNODAR, RUSSIA**

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### **Abstract**

In the research environment, informal urban development has traditionally been studied in the cities of the Global South (UN-Habitat, 2003; Guibrunet, & Broto, 2015; Mohanty, 2019; Gonçalves & Gama, 2020). However, in Eastern European context informal urban development differs (Karbainov, 2018; AntoniĆ, 2016). In Russian Major cities housing construction is under strict control, while in one of the biggest and fastest growing cities - Krasnodar – informal construction practices and bottom-up approaches in spatial redevelopment are widely spread.

Meanwhile one of the main challenges for modern urban planning in Russia is the amount of unknown grassroots development processes happening all over the post-Soviet space. Citymakers continue to ignore and counteract the situation, developing more and more precise tools for identification of informality. The gap between official and unofficial processes continues to grow.

Present work is a step towards the discovery of this phenomenon. In the spotlight we put the exploration of inner synergetic inconsistency of legal relations, connecting economic, institutional, demographic, and sociopolitical contexts. Case of Krasnodar city is extremely interesting for the discussion due to the superior level of contradiction between formal and informal urban life.

The research methods include spatial and regulatory documents analyses, in-depth and express interviews with different collective actors (city administration, activists, experts in urban development, locals living in informal, legal, and institutionalized housing), and participatory observation. The core of the research relates to the machinery of the conflict behind the legalization process.

Findings of this work illustrate the hierarchy of reasons behind the spread of informal settlements in Krasnodar and its discrepancy for different social parties. While administrative power does not seek compromise with locals and migrants, the mistrust of others embodies itself as unguided and spontaneous urban development. It is not just the urban conflict anymore but a kind of feud.



# THE EFFECT OF SUPERGRIDS AND SUPERBLOCKS ON THE TRANSFORMATION OF THE HISTORIC URBAN FABRIC OF KASHAN CITY IN IRAN

**Ms. Elham Karbalaee Hassani**

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## **Abstract**

Building a broad network of wide and long routes in the center of ancient cities inspired the most significant modernization efforts in Iranian cities between 1925 and 1941. This method transformed the urban grid and destroyed historic urban areas; however, it helped transportation tremendously. A city's supergrid is a notion that is superimposed on an existing city structure, triggering a transformation process that results in a complete reorganization of the city's layout, as Moudon stated in 2019. Regular and semi-regular grid patterns and the superimposed modern supergrids have emerged as the dominating pattern of expansion, enclosing the ancient city's organic form inside the confined and transformed historic core.

This research's primary methodology is based on the Italian approach of urban morphology, which is focused on the idea that a city's history is written within its built urban fabric. My investigation began by reading the most recent superimposed layers in contemporary time and progressing backward by deleting them in each phase of city formation until I reached the city's origins before the Islamic period.

Kashan's morphological cadastral cartographies reveal the city's most recent footprints. The strategy has been implemented by cutting procedures, which superimposed new grids and levels on the medieval town's topography and architecture. The historical aggregate's architectural structure may still be observed inside the modern network. This study examines how the new supergrid axes have changed the behavior of the built fabric on both sides of the route margins.

# **SCHOOL SPACES, A HISTORY OF SCHOOLYARDS, NORMS AND REGULATIONS**

**Ms. Matilde Kautsky**

*KTH, Royal Institute of Technology, School of Architecture*

## **Abstract**

Currently, schoolyards are an issue under debate in Sweden. It is both the size of them in connection to questions of learning, health and play of children, as well as the localisation of schoolyards in the urban fabric. Are these issues due to few norms and regulations around schools today? Or are they due to an increased interest in what the city is for and for whom? These are important questions, which needs to be addressed thoroughly.

The aim is to showcase if and how norms and regulations are visible in the built environment. The research question is 'What are the norms and regulations for schoolyards, from 1900-2020? And what are the main ideas about schools in society during this time period?'. These questions will be answered through an overview of norms and regulations, as well as ideas about the school, based on a literature review. Furthermore, it will be traced how these norms, regulations and ideas, are visible in the physical environment, how normative theories are performed in practice. A sample of schools will be analysed, from their point of construction and the norms and regulations informing that, until today. In the case studies, traces of the normative theories in the built will be analysed through archival material, like drawings and construction briefs, as well as photographs and on-site visits. Possible findings will be that the localisation of schools in the neighbourhood has changed, from more prominent locations to more local, due to changing ideas about schools in society. It might also be visible how norms about sports and health during the 1940s influenced the size of schoolyards. Through an understanding of how normative theories inform practice historically, knowledge can be gained about what measures can inform the design and location of schoolyards in the future.

# **QUANTITY VS. QUALITY: DO CITIZENS IN DENSER NEIGHBOURHOODS HAVE POORER ACCESS TO OPEN SPACES, URBAN GREEN AREAS AND PUBLIC RECREATIONAL AMENITIES? THE CASE OF STAVANGER REGION IN NORWAY.**

**Mr. Todor Kesarovski**

*University of Stavanger*

**Dr Fabio Alberto Hernández Palacio**

*University of Stavanger*

## **Abstract**

The sufficient provision of open public and urban green spaces (OPS/UGS) are considered fundamental for sustaining good quality of life in cities. These aspects are long-established within urban planning. Indeed, the balance between built masses and open spaces has been fundamental for the discipline's development and the innovative practices in spatial design. The following study explores this relationship by correlating density measurements focused on the built form and indicators focused on the proximities of open spaces and green areas within the Stavanger region (Norway). By doing so, the executed analysis depicts the profile of different neighbourhoods concerning their balance between built masses, open (green) spaces and demographic characteristics within a GIS framework. This is expressed through the indicators of open space ratio (OSR), as well as, open public and urban green space per capita (OPSp/UGSp). Furthermore, the research challenges the notion that citizens in denser urban areas have poorer provisions of good quality open/green spaces by incorporating the concentrations of freely accessible amenities such as playgrounds, sports fields and facilities as vital assets of these open public spaces.

As a result, the study identifies differences between the provision of UGSs and OPSs within different areas in the examined context. The analysis indicates logically lower scores for denser neighbourhoods and progressively higher scores for areas with lower spatial densities regarding the indicators. However, when the provision of public amenities per capita within the open spaces are incorporated, the analysis draws a more complex and diverse picture. Thus, the inclusion of all sets of indicators is required if one aims to effectively assess the provisions of open public and green spaces with respect to their demand. Only then the impact of urban densification can be fairly evaluated with respect to the pressure the process puts on the available open urban (green) spaces.

# THE POST-RETAIL MORPHOLOGY AND ECONOMY OF HISTORIC URBAN CORES

**Dr Conrad Kickert**

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## Abstract

**Background:** Ever since official records began, the number of retailers per capita has declined in many Western societies. Especially smaller stores in historic cores have suffered for nearly a century of consolidation, suburbanization, virtualization, and the current pandemic. Retail erosion has affected the morphology and economy of historic cores, many of which have been traditionally served as shopping destinations. As a result, many historic cores are at a turning point, reassessing their role and relevance in a post-retail era. The unequalled urban form of our historic cores is increasingly in search of a new function.

**Aim and objectives of the study:** This presentation presents multiple completed and in-progress strands of research that aim to answer how retail declines in urban cores, and what post-retail urban form and function can take its place. Its main aim is to study the dynamics of retail decline, as well as to study the role and potential of historic cores after retail has declined.

**Methods and findings:** The presentation presents two key studies. Firstly, a qualitative and quantitative study of how and where retail declined in three transatlantic cities over the past century shows how stores declined in decentral, poorly connected location. This study informs historic core plans and designs for either retail revitalization, or post-retail transformation. Secondly, a survey of the current function of vacated storefronts in The Hague, Netherlands, demonstrates the fascinating ability of historic urban fabric to adapt to post-retail futures. Former storefronts serve a multitude of new functions, including many creative economy businesses.

**Conclusions and implications:** Methodologically, this presentation challenges urban morphologists to include diachronic studies of urban function to create holistic designs and policies for resilient and relevant historic cores. Furthermore, it combines a range of morphological and statistical tools through scales to assess patterns of morphological and functional change.

# URBAN MORPHOLOGY AND ANTHROPOLOGY – SYNERGIES AND A JOINT LANGUAGE

**Ms. Bim Kilje**

*Stockholm University*

**Dr Todor Stojanovski**

*KTH Royal Institute of Technology*

## Abstract

Cities can be understood and analysed in different ways. Urban morphology studies the physical form shaped by cultural traditions and social and economic forces over time. Urban morphologists focus on the physical and explore the structure of cities by dissecting elements and patterns, typically buildings, lots and streets in dynamic interactions and historical change. This paper will look at literature and theories in social anthropology and urban morphology to discuss and encourage convergence in morphological, anthropological, planning and urban design discourses. Urban anthropology is a sub-branch of social anthropology, and works, like urban morphology, with the city as field of study. While urban morphology is concerned with physical form, urban elements, and pattern analyses over time, anthropology's perspective is that of the social and cultural in the present moment. Anthropology investigates people's experiences and meaning-making, and can bring a humanistic and qualitative lens to historical morphological studies, as well as futuristic planning and urban design. Pierre Bourdieu's theories will be discussed in the paper. They are widely used by anthropologists and were relevant for the "spatial turn" in the discipline in the late 1980's. Particularly, the concepts of habitus and social space are relevant to morphology. Habitus are the embodied dispositions that guide individuals in their behaviours and has been described as a sense of one's own and other's place. Social space is the physical space where relations between different habituses play out. These two concepts are of interest to the study of spatiality, emplacement and mobility, and can inform how we think about physical and social environments in relation to each other. This paper aims to find a joint language and create synergy between urban morphology and urban anthropology and contribute with holistic and humanistic approaches to cities and urban planning and design.

# REVITALISATION OF URBAN INFRASTRUCTURAL AND INDUSTRIAL FACILITIES FOR THE FUNCTION OF URBAN AGRICULTURE - EXAMPLES OF GOOD PRACTICE

**Dr Justyna Kleszcz**

*Opole University of Technology, Faculty of Civil Engineering and Architecture*

## **Abstract**

Since the 1960s, people have been looking for new solutions to produce food directly in urban areas. The need of reducing distance between where food is grown and where it is consumed, and to intensify cultivation in order to feed rapidly growing world population, were the main reasons for the concept. This resulted, among others, in the emergence of concept of urban vertical and roof farming, but also in a turn towards the historical form of allotment gardens.

One of the latest global trends, initiated around 2010, is a shift towards using roof space of existing buildings with different primary functions to introduce integrated rooftop farming as open-air (RTF) or greenhouse (iRTF). One type of building predestined to be used for this purpose is an industrial facility. Due to the emergence of first urban industrial areas, they were originally located on cities' peripheries, but with the rapid development of urbanization they are now part of the inner-city. Urban development has made them an attractive space for experiments with multifunctionality or parallel functionality - as a basis for the imposition of functions, nowadays essential for sustainable urban development.

Therefore, the aim of the study is to analyse good design practices aimed at converting different types of industrial facilities into urban farms of the North American networks Gotham Greens and Lufa Farms. A total of 12 existing buildings were analysed. The study adopted method of literature analysis, case study analysis concluded with comparative analysis of the detailed data collection.

The following research has made it possible to identify specific features of buildings which, due to their specific technical parameters, are predestined to be transformed into multifunctional RTFs. Catalogue of spatial activities that these historical objects undergo in order to be arranged for an atypical both industrial and agricultural function was also compiled.

# CLIMATE (IN-)JUSTICE IN GERMAN CITIES? ASSESSING THE RELATIONSHIP BETWEEN LAND SURFACE TEMPERATURE AND AFFORDABILITY OF HOUSING

**Mr. Florian Klopfer**

*TU Dortmund University, Germany*

**Prof. Dietwald Gruehn**

*TU Dortmund University, Germany*

## Abstract

Two megatrends of the present cumulate and interact in urban areas: urbanization and global warming. Their combination leads to a growing number of urbanites affected by negative health impacts. As cities are highly heterogeneous entities, internal variances are of great interest for urban planning and planning sciences. Consequently, questions like “are high temperatures mainly found in neighborhoods with socially deprived inhabitants?” arise here. Studies considering cities in the US suggest that there are strong correlations between various socio-economic and socio-demographic indicators like income or race and areas featuring a pronounced urban heat island intensity (UHII). Considering the differences regarding urban structures, their genesis, planning cultures, traditions, and regulations, we intend to research whether such correlations also exist in German cities.

Our approach consists of relating the affordability of housing (sub-indicators apartment rent and standard ground value) as a proxy for a higher respectively lower socio-economic status with land surface temperatures (LST) derived from Landsat data in the seven most populous German cities (Top-7).

Regarding the cities as a whole, no significant correlations between rental prices, standard ground values and LST are found, which means that based on our methodology and data there is no proof of climate injustice. One reason lies in typical German urban morphological structures, e.g., perimeter block development (*Blockrandbebauung*) and large housing estates (*Großwohnsiedlungen*) in Berlin. While high densities, centrality and fewer urban green characterize the former typology, it is often found in sought-after residential areas and thus both relatively hot and expensive. The latter, however, consists of large but sparsely distributed structures with vegetation patches in-between, which makes the surroundings cooler while apartments are often cheaper. Nevertheless, we expect correlations between the variables mentioned above in more homogenous urban quarters. Our results provide valuable information for urban planners, real estate development and urban social politics.

# FROM STREET NETWORK TOPOLOGY TO GENERIC ACCESSIBILITY INDICES: SUPRAPOSITION OF GRAPH THEORY MEASURES ON MORPHOLOGICAL LOCALITIES

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## Abstract

Spatial analysis of street network accessibility has been widely utilised by academics and urban designers. However, when assessing the overall accessibility performance of larger morphologically consistent units – the urban localities – the results articulated on the street network are potentially problematic to interpret and generalize.

This paper presents an innovative approach to the synthesis of various street network accessibility measures in the form of generic accessibility indices projected to various morphological localities. It aims to determine a method specifically suitable for Prague urban tissues and it further explores the possible application of these indices in urban design and planning. Its objectives are (1) to identify and describe spatial accessibility of public space and morphological characteristics of street spaces using network analysis; (2) to establish and assess accessibility indices for morphologically distinctive localities; (3) to examine the correlation between the accessibility indices of individual localities and their time of origin, providing a valuable insight into the process of city evolution.

The configurative analysis is carried out on a detailed street network within the administrative borders of Prague. Accessibility variables are then superposed on existing morphological localities which have been delimited accordingly to the Conzenian tradition of urban morphology. Methods stemming from system ecology and descriptive statistics are utilised in order to provide control over the aggregation of the original variables into the generic accessibility indices, while preserving sufficient descriptiveness. The results provide a valuable reference of various accessibility indices evaluation options in relation to the choice of statistical calculation and variables.



# **TRANSFORMATION OF URBAN TISSUE ALONG DOWNTOWN ARTERIES. MORPHOMETRIC EVALUATION OF RESILIENT URBAN FORM.**

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## **Abstract**

The complexity of urban processes, which occurred in post-socialist countries after the second world war, contributed to the creation of underdeveloped urban tissue that was, in many cases, resistant to changes. This applies particularly to cities that grew rapidly, such as Łódź. Unfinished processes of transforming urban tissue along urban arteries are still an unsolved problem of the city centre of Łódź. These interventions slowed down the transformation of street frontages and significantly exacerbated the urban inertia. The concept of inertia is gaining importance in relation to the current research on shaping a resilient urban form. This article aims to compare and evaluate the dynamics of urban tissue transformations that have taken place over the years along newly built urban arteries. The research contributes to the methodology of urban morphometry. We consider the construction of the most important transportation routes in Łódź a representative example. Our focus is on the impact of newly built urban arteries on the transformation of the plot system and the exploration of a built typology. Moreover, we analyse how the relationship between private and public space changed. Based on the measurements of urban tissue elements, we assessed the dynamics of the changes taking place in the spatial structure along the main urban arteries. Besides, the aggregated data enabled us to reflect on the reasons for the transformations and their context. This study is in line with the current trend of searching methods supporting the evaluation of resilient urban form. In addition, the article continues the research initiated by Professor Marek Koter, whose study was a pioneering Polish solution in the implementation of quantitative methods to assess the transformation of the urban tissue.

# **DANCING ON THE PERIPHERIES: PERFORMATIVE ARCHITECTURE AND CULTURAL DIVERSITY IN THE CITY OF BARCELONA TODAY**

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## **Abstract**

The relationship between architecture and ritualized performance is intimate and complex. New cognitive science understandings of the body-mind-environment connection and role of body and senses in meaning-making have influenced interdisciplinary dialogue, and the concept of performative architecture has been explored from different angles, through fields such as phenomenology, the non-representational theory of human geography, and performance studies.

This paper explores the relationship between space, ritual, and event, in performances by ethnic minority communities in Barcelona. It examines the phenomenon of regularly occurring dance sessions by resident groups of Filipino and other cultures, taking place in several semi-public outdoor spaces: the Sant Antoni market below-grade plaza, Museum of Natural Sciences plaza, and the courtyard outside Raval's MACBA gallery. The groups gather in these spaces to play music and practice choreographed dances in front of reflective surfaces, while passer-bys witness these sessions, thereby setting up a performer-spectator relationship. Although the choice of these "pockets of space" appears accidental, it is in fact carefully considered in terms of physical and social affordances (i.e. accessibility, safety, privacy, materiality, lighting, acoustics) and comparing properties across all spaces, a pattern emerges. The methodology used to uncover this pattern includes analysis through the lens of enactive-embodied cognitive science and perceptual affordance theory, ethnographic study, and observation based on site visits.

The aim is to gain a better understanding of why certain spaces lend themselves to specific actions and ritual events, how peripheral urban spaces can support self-organizing performative actions and creative cultural expression and play, and how architecture and urban design can perform cultural diversity in the city. The result, in the last instance, is a reinterpretation of the history of old cities from an innovative dialogical perspective that can help build a new sense of place for co-living, as we have already analyzed in previous studies.

# MAPPING THE EMERGING FIELD OF QUANTITATIVE URBAN MORPHOLOGY

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## Abstract

The last decade has seen the increasing use of quantitative and computational methods in the study of built form. The growing recognition of the built environment as a contributing factor to social, economic and environmental inequalities has highlighted the need for better evidence and therefore reproducible objective methods for the quantification, evaluation and comparison of the physical space of cities. This trend has been accelerated by the ever-expanding accessibility of open data and emergence of spatial data science methods, which brought forth a multitude of different quantitative approaches aiming to fill this methodological gap. Quantitative approaches hold not only the potential for reproducible science but the potential to discover previously inaccessible knowledge from data providing new insights into patterns of complexities of the urban environment. Despite sharing a common aim, namely the provision of objective representations and reproducibility for the analysis of urban form, the available methods and tools differ substantially in their approaches. We argue that the emerging field of quantitative urban morphology is currently characterised by a lack of scientific testing across approaches, an ambiguity of terms, differences in theoretical foundations, spatial representation, scales, measurements, units and methods of analysis, which holds the risk of misinterpretations and incomparability of findings. The aim of this paper is to bring clarity and disambiguation to the field by critically reviewing, categorising and synthesising the existing approaches into a coherent field of quantitative urban morphology. We argue for the need of standardised data sets and evaluation tests—commonly used in the field of data science—for new approaches and tools and outline the necessary steps for their development. Finally, by conducting this critical overview of the field, we provide a primer for researchers interested in quantitative urban morphology, highlight potential risks of misinterpretation, and outline pathways for potential future developments in the field.

# **TRANSFORMATION OF URBAN SPACES OF PREINDUSTRIAL CITIES IN CONTEMPORARY LODZKIE VOIVODSHIP. HERITAGE PRESERVATION PERSPECTIVES IN INTERDISCIPLINARY APPROACH**

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## **Abstract**

The cities of the lodzkie voivodeship were mostly founded between the thirteenth and fifteenth centuries. Until the industrial revolution, these cities developed a clear urban plan, which is practically unchanged today. At the beginning of the industrial age these cities were important and fully-developed towns. The Industrial revolution has shaped the modern image of the majority historical cities of the region. The social and economic changes contributed to the creation of new residential buildings, often made of more durable materials than before. The existing buildings, created in previous ages, received new stylistic features. The city's plans had been subject of regulations. Also further changes complicated urban structure, which at present is a challenge for a coherent conservation policy

The aim of the research is to designate the directions of urban and architectural changes in the cities of the contemporary lodzkie voivodeship in the 19th century. Recognition of these processes will improve the effectiveness of heritage preservation. For the purposes of this study, it was necessary to study bibliographic, cartographic and iconographic materials. The collected materials had to be verified by field research. Finally all data was subjected to a comparative analysis.

The chronology of the formation of layers of historic urban structure is often the basis for their various valuations. This approach is incorrect, and the appropriate method is to evaluate the value of individual objects and relations between them and the space.

The diversity and mutual relations between historical layers have not to be a factor that reduces the historic value of the urban organism. Objects of the nineteenth and twentieth century genesis are as important for shaping the identity of a place as medieval and modern monuments. The city's development should run in symbiosis with historic values, which should be clearly defined.

# **DEVELOPMENTS IN URBAN DESIGN PRACTICE IN KADIKÖY REGION OF ISTANBUL: A MORPHOLOGICAL PERSPECTIVE**

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## **Abstract**

The Italian school of morphology, founded on the understandings of Muratori & Caniggia, remarks on the importance of the historical background of a settlement as a guide for the urban design process. In addition, the French school of morphology focuses on history as it gives the main character that shapes the current physical structure of a settlement area. Thus, it is aimed to investigate how an urban design can be guided concerning the history of a settlement, based on the knowledge of these two schools of urban morphology. This paper considers how new ideas may be integrated into the urban form of a city that has been powerfully shaped by a long history. Since the typo-morphological interpretation of settlements; understanding physical form, formation, and transformation using types and typologies; can represent an essential reference point for urban planning and design, this study also aims to investigate past traces and to find clues that can be a reference for the future, and determine the design principles based on the typo-morphological approach. Haydarpaşa in the Kadıköy district, an essential focal point welcoming visitors to Istanbul in the past but is an inactive space with potential based on the unique landmarks as the old Train Station and archaeological excavations of Chalcedon today, is selected as the study area. This area has also drawn the attention of different entrepreneurs, especially the private sector. In this scope, typo-morphological analyses on streets, building lots, and building scales are carried out in the Yeldeğirmeni settlement area neighbouring Haydarpaşa. Based on the findings from analyses, Kadıköy will preserve its historical identity as a transportation hub with its port and train station and also as a commercial area; on the other hand, assuming a new role of being a recreational area that responds to the requirements of Yeldeğirmeni neighbourhood.

# **DECODED CITY: READING THE HISTORICAL PENINSULA OF ISTANBUL UNDER THE SHADOW OF DIFFERENT EMPIRES WITH MULTI-METHODS AND APPROACHES**

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## **Abstract**

This research aims to show the complexity that lies beneath the urban layout of the historical core in Istanbul which has been in the spotlight over the centuries due to its strategic location and historical significance. The city was the capital of Byzantine and Ottoman Empires throughout its history. In each period, the city was destroyed and the next generation simply rebuilt on the ruins of the previous one according to their everyday practices and own culture.

This study examines the changes by using space syntax and Muratorian methods and also identifying the morphological regions of the city in terms of Conzenian tradition. The methodology is built in different sections: macro, meso and micro. Within these sections, morphological regionalization, which expresses the urban areas that have separate integrity from the other areas surrounding them in terms of form, is a method to figure out the relation among the main elements of urban form. In the research, the urban landscapes are read in multiple-scales: the whole area, various ordered morphological regions as well as the building fabric and prominent buildings. Firstly, the expansion of the city in time and the urban components of each period as well as their differences were presented. Afterwards, the spatial transformations of the area were defined by using spatial analysis. Secondly, Archaeological Park is analysed. Lastly, the research describes how cultural changes reflected the palaces' layouts in each era. To do so, j-graph analysis was used to investigate Byzantium and Ottoman Palaces. Each generation produced knowledge; those were adapted to tradition and reflected their own spatial culture. Three different morphological methods, were adapted to decode the historical core of Istanbul. The study provides a better grasp of the transition of the area and tracing culture on the sphere by means of internalist, normative and cognitive methods.

# SIEGFRIED SITTE - FORGOTTEN URBAN DESIGNS OF THE EARLY 20TH CENTURY

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## Abstract

The Austrian architect and urban planner **Siegfried Sitte** (1876-1945) is the last representative of a family of architects spanning three generations, after **Franz** and **Camillo Sitte**. His extensive oeuvre, unlike that of his predecessors, is largely forgotten today. After sudden death of his father, great expectations were placed in **Siegfried Sitte** as successor of the well-known urban planning theorist **Camillo Sitte**. And **Siegfried's** career began promisingly with award-winning contributions to international urban planning competitions. In addition, he tried to put his father's theories into practice by completing **Camillo's** unfinished projects. These designs, which were created up until the outbreak of World War I, represent **Siegfried Sitte's** early creative period. In fact, however, only a few of these projects were realized. In the interwar period, **Siegfried's** field of activity shifted away from the practice of architecture towards an academic examination of urban planning.

**Rudolf Wurzer** - a city councillor for planning from the 1970s to the 1980s and at the same time professor at the TU Wien, published a very short overview of **Siegfried Sitte's** architectural work in 1989, whereby he expressly made no claim to completeness. Even in his review, **Wurzer** emphasised the urgent need for a serious scholarly study of these designs and plans, which has not yet taken place.

This paper aims to make up for this omission. For the first time, **Siegfried Sitte's** largely unknown urban planning projects, which can be found in the estate of the **Sitte family of architects**, are made accessible to experts and analysed in detail.

*What are the qualities of **Siegfried Sitte's** urban designs?*

*To what extent can the influence of **Camillo Sitte's** urban planning theories be detected in his son's work?*

Based on these central questions, it will be discussed whether **Siegfried Sitte's** urban planning has perhaps been unjustly neglected.

# **GREENWAYS AS AN INTEGRATED URBAN PLANNING AND DESIGN STRATEGY: A CASE STUDY OF CHARLOTTE METROPOLITAN USA**

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## **Abstract**

Greenways are open space corridors that perform natural functions while offering desirable aesthetic qualities to urban dwellers as they recreate or commute along these trails. Such green spaces are often viewed as a necessary amenity to healthy urban living. As linear corridors through and bordering urban neighborhoods, greenways are crucial urban planning and design features of livable urban environments. Creating greenway networks for recreation, daily commute, and enjoyment of nature is one of the most fundamental elements of enlightened urban development. Well-planned greenways along with other parklands connect neighborhoods, schools, and mixed-use centers and unify functional urban spaces together to produce a desirable urban form that enhances market values, provides for stormwater infiltration, and improves the quality of residents' lives.

This paper examines the greenway system in Charlotte North Carolina to illustrate how greenways are incorporated into overall urban development schemes. As one organizing element for spatial planning and urban design, Charlotte's greenway system is comprised of streamside corridors and overland connector trails that are developed within roadways and utility lines. To better coordinate with overall urban development trends and integrate greenways with other urban design elements, three greenway priorities and development strategies are established: greenways supporting compact development in existing neighborhoods; greenways connecting suburban areas where urban growth has not yet occurred; greenways as a conservation tool for environmental preservation. This study argues that Charlotte's greenway successes are mainly attributed to their comprehensive strategies for design and implementation, including: establish a long-term policy; promote public participation in planning; establish collaborative partnerships with public and private organizations; incorporate greenways plans from surrounding jurisdictions to form a larger connected network; recognize different types of greenway usages and plan accordingly.

Essentially, this paper calls for a renewed approach to greenway design and planning in order to meet sustainable development challenges more effectively.



# ON THE USE OF DEEP GENERATIVE MODEL IN URBAN LAND USE PLANNING

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## Abstract

Land use planning is an important tool to ensure that the need of people can be met and the land resources can be used efficiently. It is essential for land development as proper land use planning can render social, economic and environmental benefits to the local community. It has even been suggested that land use planning is a key to sustainable development. On the other hand, there has been a recent trend to adopt the idea of deep generative models in the realm of design. The notion of deep generative model is to train a deep learning model to generate design options. In particular, attempts have been made to investigate the feasibility to generate architectural design options by using deep generative models. It would also be of interest to extend this idea and examine how deep generative models could be adopted in urban design or planning tasks. In the current study, the possibility of utilizing deep generative model for land use planning would be examined. The land use in various tertiary planning units (TPUs) in Hong Kong would be adopted as the training data in the deep generative model. After the training process, TPUs not presented in the training data would be fed into the model to generate options of land use planning for these planning units. The generated results would be compared with the current land use of the units to understand if meaningful land use planning options can be generated by using the model. Results from the current study should unfold a new dimension in the realm of land use planning, in the sense that it could generate options for planners for further planning development investigation.

# **CALL FOR SPACE: SQUATTERS, INDUSTRY EXPANSION, AND THE BIRTH OF KWUN TONG NEW TOWN IN HONG KONG**

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## **Abstract**

The momentum behind the birth of Kwun Tong new town in Hong Kong is not comprehensively understood. Historical narratives magnify the impact of industrialisation or laissez-faire liberalism. Empirical narratives stress that the increase in housing supply, expansion of industrial demand, and reclamation of land seem to have inevitably led to the development of new towns. This article proposes to look at formation of the new town from the perspective of migration and employment. The article reveals that employment relationship acted as a catalyst in the resettlement process. Investigation of the British colonial archival documents, proposal maps, and aerial photographs reveals that the planning of the new town absorbed the experiences in other areas undergoing dramatic urban transformation during the same time. The social and political dynamics of immigrants and how it interactively influenced the built-environment and resettlement is highlighted by this article. Under the morphology analysis, critical changes in urban form provide other angles for understanding how the new town was shaped by handling immigrant issues. In addition, morphology analysis provides a spatial dialectics filling the research gap of town planning in Hong Kong in the 1950s.

# **MORPHOLOGICAL DESIGN STRATEGIES FOR THE RENEWAL OF JIANGNAN VERNACULAR BUILDINGS UNDER THE CONCEPT OF SHARING**

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## **Abstract**

The rapid development of cities has caused a huge siphoning effect on the rural population, resulting in the emergence of "hollow villages" and "thousand villages one side", among other rural problems. In 2017, the 19th National Congress proposed the "Rural Revitalization Strategy", which pushed the study of regeneration and revitalization of vernacular architecture to a new stage, resulting in more and more architects began to enter rural practice. Faced with the current situation of resource constraint, "sharing" provides a new solution for how to revitalize the stock of land, unify urban and rural development and rural revitalization. Through the typological analysis of the transformation process, methods and spatial forms of several Jiangnan vernacular buildings, such as Ban Villa, Stray Birds Art Hotel·Songyang Chenjiapu, and The Renovation of JiJiaDun Village Center, etc. four morphological design strategies for the renewal of sharing spaces in vernacular buildings are summarized: space insertion, space juxtaposition, space extension and space infiltration. Under the premise of respecting the original texture and local culture of the countryside, through the reintegration of old and new spaces, the sharing of functions and spaces can be achieved, which can be used as a sharing place and a sharing platform to increase the interaction between users, residents and villagers, thus activating the vitality of the whole region and the countryside and realizing the regeneration and revitalization of the countryside.

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# **RESEARCH ON EVOLUTION LAW AND DRIVING FACTORS OF RURAL SETTLEMENTS IN HILLY AREAS OF WESTERN CHONGQING FROM THE PERSPECTIVE OF URBAN-RURAL INTERACTION - A CASE STUDY OF YONGCHUAN DISTRICT IN CHONGQING**

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## **Abstract**

Under the background of scientific planning and precise policy implementation, quantitative measurement of spatial characteristics and influencing factors of rural development to reveal current driving forces are the premise of rural revitalization. From the perspective of urban-rural interaction, taking Yongchuan district in hilly area of western Chongqing as an example, the characteristics of urban and rural settlement evolution were quantitatively studied based on land conversion and human-land relationship, and the influencing factors were quantitatively analyzed by geographical detector. The research shows that the rural revitalization cannot be only discussed on the basis of countryside, and the development of villages and towns is not only different but also closely related to the urban development. Industrial transformation and integration, road and port construction and related policies and plans are the core driving forces of rural urbanization development in Yongchuan District. Urbanization also drives the rural revitalization of surrounding areas, bringing spatial reconstruction. Natural resource endowment, location and population migration are the leading factors of development. Under the comprehensive action of these factors, the local reconstruction of urban and rural space constantly takes place, forming the regional spatial pattern of “group layout, driven by multiple points; Central agglomeration, periphery expansion; the inner suburbs compact and the outer suburbs shrink”. Understanding the spatial differentiation and driving factors of regional development is conducive to the accurate implementation of zoning and classification policies. Different development modes, land use indicators and development strategies should be determined according to different types of urbanization areas, sustainable development and contraction of rural areas, so as to play a better leading role of planning. New engines such as agricultural transformation and cultural and tourism integration should be further developed based on the resource endowments of different regions to provide better support for county and rural revitalization and new-type urbanization.

# RESEARCH ON CLIMATE ADAPTATION OF BAYU TRADITIONAL SETTLEMENTS

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## **Abstract**

The form deeply affects the use of mountain topography and wind environment in the Bayu region are complex and diverse, and the spatial forms of traditional settlements are unique and rich. Studying their spatial patterns and mechanisms which adapt to the local climate will help to explore theories and methods of climate adaptability with low regional energy consumption. Taking 18 national historical and cultural towns in the Bayu region as examples, this paper uses historical documents and remote sensing information, integrates GIS morphological analysis, wind field simulation and actual measurement to analyze the correlation between the mountain terrain, the wind and the form of landscape pattern, street structure and building layout. The result shows that Bayu ancient towns are preferentially located in the flat dam area of hilly Valley or well ventilated trough (gorge) Valley, and avoid the mountain top and low-lying calm wind area with violent air flow change. They often face the water and sit with their back against mountains, so they could avoid the chilly wind in winter and introduce cool wind in summer. The street is parallel to or forms an included angle of less than 30 degrees on the side of the dominant wind direction in summer, and is perpendicular to or forms an included angle of more than 60 degrees on the side of the dominant wind direction in winter. The Polyline, branched or compound street form are flexible. With the cooperation of cascading architectures, the streets can well adapt to different terrains and the prevailing wind directions in summer and winter to form a suitable microclimate. Synergy and integrity are the key points of climate adaptability for the traditional settlement, and also the key to the protection and inheritance of traditional settlements.

# **INHERENT PATTERN AND IMPORTED PATTERN FROM DIFFERENT CULTURES IN CHINESE URBAN FORM**

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## **Abstract**

Urban form is a physical expression of socio-cultural environment. China has a continuous history of thousands of years accompanying wide spread of Chinese culture to nearby countries, as well as the absorption of foreign cultures either actively or passively. Therefore, tracing back to the origin of urban forms in Chinese cities, contributes to build up the precondition for understanding the subsequent transformation and future redevelopment.

The objective of this study is to sort out the multiple sources of urban forms in major Chinese cities, and clarify their inheriting relationship, time sequence, and current issues, from the view of culture inheritance and importation. The aim is to propose a new but effective viewpoint for further understanding the morphological diversity and urbanization process of Chinese cities.

The study proposes the concept of "Inherent Pattern" and "Imported Pattern" in Chinese urban form. On the one hand, the grid plan of dualism or hierarchy represents the "inherent pattern" expressing traditional Chinese cosmology and hierarchical feudal society. Its long-term inheritance resembles a "game" between "hierarchy" and "homogeneity" and it has high potential for constant transformation in adaptation to a changing society. On the other hand, the ring-radial spaces, represents "imported pattern" from Baroque culture, as a result of passive urbanization with colonial background. It was imported into China when symbolism was endowed with more concrete functions, adding a tendency of Pragmatism in its transformation in China. Finally, the study puts forward the process of "Diversification of Inherent Pattern" and "Localization of Imported Pattern" as two workable mechanism for interpreting the urban form transformation in Chinese cities. It can be a well-founded starting point in redeveloping different types of urban form.

# **RESEARCH ON THE IDENTIFICATION OF PLOT PATTERNS AND URBAN LANDSCAPE UNITS OF CHONGQING OLD CITY: COMBINING K-MEANS CLUSTERING AND TYPO-MORPHOLOGICAL APPROACH**

**Dr Peng Liu**

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## **Abstract**

Urban landscape units is a significant approach established by Conzenian school of urban morphology to understand, protect and manage historic urban landscapes and their regeneration. The identification of urban landscape units is largely based on the identification of the plot pattern, an essential element of urban form. Since its economic boom during the 1980s, China has been witnessing megaplot-based urban renewals in its historic cities, which is often criticized as blindly pursuing the efficiency of land speculation and neglecting the morphological features of historic urban landscapes including the historic plot pattern. In mountainous cities, urban renewals have to deal with more sophisticated topographic and morphological conditions, and require more precise approaches to identify urban landscape units and plot patterns. Taking Chongqing old city as an example, a combination of K-means clustering and typo-morphological approach is used to identify the plot patterns and urban landscape units of the mountainous city. As a result, seven major plot types and four types of plot patterns in Chongqing old city are identified. Furthermore, they serve as key foundations for delimiting urban landscape units. Based on the identified results of plot patterns and urban landscape units, a reflection is finally made on the renewal problems of Chongqing old city, focusing on three main issues. First, what are the main problems in terms of the transformation of the plot pattern in Chongqing old city and what are the challenges they bring to an organic renewal? Second, which plot division scheme should be developed by an organic renewal Chongqing old city The last but not the least, in order to continue the key morphological characteristics of Chongqing old city, how should the delimitation of urban renewal units integrate with the urban landscape units?

# RESEARCH ON THE TYPES OF OLD COMMUNITY PUBLIC SPACES OF ELDERLY-YOUNG INTERACTION – TAKE HEBEI PROVINCE OF CHINA AS CASE STUDY

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## **Abstract**

Community public spaces carry the residents' everyday life. The elderly and children, who have more leisure time, are frequent users of public spaces (almost 85% ). With the aggravation of China's aging degree and the opening of Third-child policy, the number of these two groups is further increasing, and the phenomenon of young and elderly accompanying each other is increasing. However, the activity area for the elderly and for the young are relatively independent and scattered, mainly for their own needs. At present, there are few studies on the demand and design research of community public spaces shared by the elderly and the young.

This study selected three old residential communities (LianMeng Community, MianSi Community and Hebei Normal University "Danwei Compound" Community) in Hebei Province , which is the representative area of severe aging in China. Behavior observation, behavior notes and other methods were used to conduct continuous observation and periodic recording of 15 public space samples for no less than 4 hours. Then the behavior data of the elderly and the young in the space were obtained, the sharing activities and interactive relations of these two groups were also sorted out. This paper put forward two public space sharing modes for them, named as "the care sharing" and "the participatory sharing" from three dimensions: function organization, space layout and environment design. After this, based these two modes, this research contained "1-to-1" interactive space and "many-to-many" interactive space types through perspective of spatial scale, spatial directivity, spatial enclosure and seat layout. The research results provided a reference for the future renovation of old residential community public spaces and building a community friendly to both the elderly and the young.



# **AN OVERVIEW OF RESEARCH ON RURAL PUBLIC SPACE AND PLACE ATTACHMENT: CONCEPTS, LOGICS, AND ASSOCIATIONS**

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## **Abstract**

Under the influence of the current rapid urbanization, the phenomena of loss of place, over-urbanization and lack of humanistic care in new rural communities are prominent. In response to this increasingly acute "human-land conflict", place attachment, as a comprehensive concept spanning multiple disciplines, has become a hot research topic in recent years. Through literature combing and cross-sectional analysis, this paper clarifies the progress and development trend of research on rural public space and place attachment. The paper reviews the research on the interconnectedness of attachment to rural public space. It also attempts to further systematize the function logic, key mechanisms and future development direction of place attachment in the creation of rural public space from the perspective of human emotions. The study found that, compared to urban public spaces, the association between rural public space and place attachment is less studied, and the literature is more theoretical and formative in its analysis of representations. The association between place attachment and rural public space and the paths of their effects are rather vague and subjective. In the future, there is much room and potential for research in identifying important place-attachment space in rural areas, exploring the mechanisms linking public space elements with rural ecological, production and living characteristics and place attachment, clarifying the characteristics of rural public space that trigger place-attachment emotions, and accurately grasping the driving factors of rural residents' place attachment.

# **AN ANALYSIS OF THE SPATIAL EVOLUTION AND CONSTRUCTION EXPERIENCE OF THE ANCIENT FUZHOU CITY**

**Prof. Shuhu Liu**

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## **Abstract**

The preservation of historical and cultural heritage combined with the discovery of outstanding planning ideas and methods that transcend time and space with enduring value is an important scientific issue in the inheritance and promotion of Chinese outstanding culture. Located on the southeastern coast of China, Fujian Province has become the starting point of the historical Maritime Silk Road because of its role as a major transportation hub between the East China Sea and the South China Sea. As its local capital city, Fuzhou has maintained a stable spatial order, landscape relations and humanistic traditions during its transformation into a commercial city, becoming a model of urban design in which the city is perfectly integrated with the landscape and natural systems. The planning ideas and methods it contains, particularly in the areas of intelligent use of natural, integration of "humanities and space", and inclusion of multiple cultures, are of great significance in solving the current problems of weakened character and the absence of cultural connotations in cities. The article takes the ancient city of Fuzhou as its object, and the main theme is to explore the contemporary significance of traditional urban design methods in the region. Firstly, through sorting out the historical evolution and landscape conditions of urban form, we identify the historical stages and overall laws of spatial evolution; Secondly, the characteristics and methods of urban spatial construction are analysed from three aspects: spatial hierarchy, axial order and functional structure analysis; Finally, we summarise the planning ideas and propose a strategy of inheritance from the humanistic concept, construction method and professional requirements of planners by comparing ancient and modern times.

# **IMPACT OF HIGH DENSITY RESIDENTIAL URBAN MORPHOLOGY PARAMETERS ON MICROCLIMATE IN HOT SUMMER AND COLD WINTER AREA IN CHINA**

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## **Abstract**

Rapid Urbanization process has taken place in China these decades with an urbanization rate of 61.43% till 2020. Moreover, the urbanization rate of metropolitan cities such as Beijing, Shanghai, Tianjin etc. has passed 80%. Consequently, high density urban morphology has become dominant development tendency in metropolitan cities. Massive construction has done remarkable impacts on urban microclimate which may lead to energy consumption growing and health problems. Hot Summer and Cold Winter Area in China has one of the most challenging climatic situations in China, thermal comfort improvement and building energy conservation in summer and winter are valuable subjects for researchers to pursue. This study investigated correlations between urban morphology parameters and urban microclimate of residential area in Hot Summer and Cold Winter cities. Rhino and grasshopper based simulation tools, Ladybug and Honeybee were selected in this study. This tools were developed by MIT and implemented in several representative research projects. Additionally, field measurements were taken place in Shanghai and Hangzhou, two of the most representative high density cities in Yangtze River Delta, China to verify the reliability of the chosen tools. The results of field measurements and simulations were combined together by statistic analyzing to find out correlations between urban morphology factors and urban microclimate. The results illustrate that, impact of urban geometry type on thermal comfort has surpassed SVF, building height, frontal area index and floor ratio area. For urban morphology with similar building density, the UTCI (Universal Thermal Climate Index) is strongly influenced by urban geometry type, especially in summer. Finding of this study will provide quantitative design guidance on residential area design for designers and relative authorities to provide more sustainable and comfortable living environment for people.

# **TYPO-MORPHOLOGY IN THE URBAN RENEWAL APPLICATION - CASE STUDY OF URBAN DESIGN PROJECT IN CHANGTING TOWN, CHINA**

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**Prof. Wowo Ding**

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## **Abstract**

Typo-morphology can be seen as the research perspective and methodology of urban morphology. The terms typo-morphology are typological and morphological because they describe urban forms according to the detailed classification of building types. Typo-morphology links together a series of academic terms in urban morphological research such as type, typological process, and morphological region, emphasizing the relationship between building types and overall form in the evolution of urban morphology. To relate urban morphological research to practice, it is worthwhile to know are these terms still relevant in urban practice, and what is their significance? This study examines these urban morphological terms in the practical utility and value through the casing of urban design projects.

Our cases are three urban renewal design projects of Changting Town, a historic town in the south of China, and the project scales are different. First of all, investigation and learning of local building types are the tool to clarify morphological regions of the historic town, which helps us to produce the design guides of the incremental process for renewal experienced in existing urban areas. Secondly, we have found the characteristics of the tangible form of an urban block based on the historical housing types, and understand the way of changing by analyzing local typological processes. Finally, the quantified urban form characteristics are translated into urban design control indicators. The paper concludes that the term Typo-morphology and its associated terms are meaningful in urban morphological practice, which are the bridges to help the Application of Urban Morphology turn to Design Control.

# **POLARIZED HISTORICAL PRESERVATION TRAJECTORIES: COMPARATIVE STUDY OF TONGLI TOWN AND YAOWAN TOWN**

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**Mr. Jianwei Li**

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## **Abstract**

Due to the divergences of social-economic and cultural environments in the different regions, the existing conditions of historical towns in China emerge into two radical morphological forms, Static Town and Kinetic Town. In 2008, to avoid extreme dichotomic development situations and keep the authenticities of historical towns, the Chinese Historical Town Preservation Bureau formulated a standardized regulation, "Regulation on the Protection of Famous Historical and Cultural Cities, Towns and Villages" (abbr. 2008 Regulation, 历史文化名城名镇保护条例, 2008). However, this 2008 Regulation results in two trajectories of historical towns redevelopments, as the government-driven and the market-driven preservation approaches, which accelerate the disparity of these two morphological forms.

This paper reveals the morphologies differentiations of these two outcomes through the lens of economy, culture, and policies by comparing two renowned historical town redevelopment projects: the role model, Tongli Town, as a Static Form, located in the wealthy South of Jiangsu Province, and the controversial case, Yanwan Town, as a Kinetic Form, located in less developed Northern Jiangsu Province.

By using three stratified chronicle research layers of physical space, regional context, and demographic pattern, this article constructs a comparative narrative approach to analyze the spatial forms of urban tissues, street and building scales, and architectural ornaments in both Static and Kinetic Towns. Besides, with a cohesive historical town development evaluation index from quantitative infrastructural networks, POI data, social media activities, it explores the reasons for the inevitability of the polarized historical trajectories emergence and provides a comprehensive reinterpretation behind the extremes triggered by the 2008 Regulation.

# **COGNIZING CHINESE HISTORIC URBAN SPACE BY INTEGRATING MORPHOLOGY AND NARRATIVITY. TAKING NANJING AS AN EXAMPLE**

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**Prof. Chen Zhao**

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## **Abstract**

Before the *Convention for Safeguarding of the Intangible Cultural Heritage* (2003), official documents focused on the tangible forms of built heritage. After that, a crucial change about heritage preservation led to consider also the intangible dimensions, stirring the debate on the relationship between 'tangible' remains and 'intangible' meanings. Thus, the perspective of Chinese discussion deviated from the traditional system and make new contributions.

Under the background of Chinese cultural context, construction methods and urban development, it is insufficient to consider historic urban landscape under the issues of tangible forms alone.

A first issue is how to cognize historic urban space as ancient Chinese culture emphasized 'intangibility' while reflecting the 'concept of impermanence of original physical object' in architecture. Since the written word and place-related narrative were more important than real sites, buildings and their physical relics, the past was and is still perceived as a space of the mind, rather than as a space of stones. Consequently, the study of historic space should include together with buildings, also traces, absences and the intangible dimension.

Nanjing historic city in China is characterised by the traditional urban morphology and cultural elements of the east area of Chunghwa Gate, an area regarded for its traditional residences dating back to Qing Dynasty. Yet, the great amount of historic information goes beyond physical space and can hardly be cognized through tangible spatial reconstructions. Considering tangible and intangible dimensions as a unity is the key to cognizing Chinese historic urban space.

This paper unfolds its investigation from the perspective of spatial narrativity, exploring how to cognize both intangible and tangible dimensions of the historic city while constructing an operational relationship between historic information, literature review and morphological analysis.

This mutualism could provide the theoretical basis and tools to interpret historic information hidden in Chinese urban space.

# **THE STUDY OF SPATIAL STRUCTURES OF TRADITIONAL CHINESE URBAN ANCESTRAL TEMPLE, FROM THE ANGLE OF USAGE PATTERNS AND INSTITUTIONAL ELEMENTS.**

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**Mr. Yinghao Zhao**

*School of Architecture, Southeast University*

## **Abstract**

As a type of widespread ritual buildings in traditional Chinese residential spaces, the ancestral temple is an important ceremonial and spiritual space for ancestor worship in the residential space. After the gradual disintegration of traditional society, the spatial organization of ancestral hall buildings has undergone drastic changes, with the spatial function changing from a family ritual to a living function, the spatial tenure changing from being owned by one family to being shared by many, the spatial structure shifting from following the traditional ceremonial structure to a daily spatial structure, and the spatial properties evolving from an exclusive private space to an urban space with some public properties. Urban ancestral temple are representative buildings in Chinese urban residential area. The analysis of them help to understand the interrelationship of institutional elements, usage patterns and spatial structures in Chinese urban architecture. Firstly, combined with historical documents, the load-bearing system and spatial details of ancestral temple was illustrated to understand the spatial characteristics of ancestral temples in traditional urban settlements in different periods. By comparing them, the changing ways and changing features was clearly explained. Secondly, through the study of historical urban governance policies and legal systems, the way and characteristics of the evolution of institutional elements, such as land systems and autonomous organizations, were analyzed. Finally, the evolution of the usage patterns of the ancestral temple space in different periods was studied, so that the relationship between spatial characteristics, institutional elements and usage patterns could be analyzed.

This paper aims to explore the influence of everyday use of space on the ritual space of traditional residents in the context of the transformation of institutional elements and tenure relations. Ancestral temple carries layers of historical information, and becomes a typical representative of the spatial transformation of traditional Chinese urban architecture.

# **EXPLORING THE INTERACTION BETWEEN URBAN LANDSCAPE AND REGENERATION DECISION-MAKING FACTORS IN THE CONTEXT OF URBAN REGENERATION, EXEMPLIFIED BY LIVERPOOL DOCKLANDS**

**Ms. Junyuan Lu**

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**Prof. Feng Song**

*Peking University*

## **Abstract**

The concept of urban landscape derived from cultural landscape encompasses perspectives of regional context, human activities and historical processes. The evolution of urban landscape for interpretation of the structure and logic of itself from the perspective of historical geography is the theoretical objective of Conzenian approach of Urban Morphology. As a self-regulating mechanism of urban development, urban regeneration is increasingly becoming an important means of transforming cities and seeking new paths of development, with physical structure and spatial use as the main object of operation. Modern urban regeneration process has become a mechanism in the evolution of urban landscape, that should be regarded as a certain type of human activity rather than an accidental factor. The political and economic system, the multidimensional development strategy of the city, the legal and administrative conditions have a direct influence on the direction of functional and structural regeneration, and the way they are implemented. In turn, the physical structure, spatial use and locational relations will also influence the urban decision-making process.

Accordingly, this paper will interpret the important role of decision-making factors in urban regeneration from the perspective of urban landscape, taking Liverpool Docklands as a case as its significant role as a physical carrier of the history of shipping and trade and as the main area of Liverpool's urban regeneration, which is of great importance to urban regeneration in the UK. Based on the literature and official documents, this paper will indicate the process of how the regeneration of Liverpool Docklands are implemented, specify the decision factors, and construct an explanatory framework, then the interaction between spatial outcomes and decision-making factors is interpreted in stages, which takes into account the changes of cognition of regeneration.



# "FLOATING ISLAND" AND "VERANDA": SHARING MEDIA IN URBAN SHANSHUI

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**Mr. Yanchu Wang**

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## **Abstract**

In the contemporary high-density urban environment, natural mountains and water resources are limited. Therefore, in order to realize the future vision of Shanshui City, it is still necessary to explore the rational introduction and activation of natural mountains and rivers. On the other hand, it seems more urgent to explore the method of realizing the artistic conception of Shanshui through spatial organization with the lack of natural resource.

This research focuses on the "media" that is closely related to the perception experience, and abstracts the two elements as sharing media of "floating island" and "veranda" from traditional gardens. With the in-depth investigation and typological analysis on three examples of Integrated Geometry and Poetic Scenery Exhibition Hall in Beijing, Nanjing Zendai Himalayas Center and Shenzhen UpperHills, it tries to put forward the manifestation of the media system of "floating island + veranda" at different scales.

In the process of restructuring from the micro-organization unit to the macro-scale combination, it is necessary to flexibly use the methods of Echoing Views, Obscuring Views and expanding the urban corridors according to local conditions, so as to seek the contemporary interpretation of the traditional Shanshui intentions.

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## REIMAGINING URBAN IDENTITIES WITHIN A LEGACY CITY

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### Abstract

Toledo is well known as a legacy city in the academic world, but the public might be more familiar with its nickname "The Glass City" because in the 1880s glass was the top manufacturer and achieved world renown. The urban fabric of Toledo grew rapidly during the industrialization of America, but it was unprepared for the many cycles of 20<sup>th</sup> century recessions. In the 70's and 80's, the high rates of unemployment, foreclosures, vacancies, and abandonment rendered the downtown into a fractured core. This paper takes Toledo's downtown and its recent large-scale investments as the main research object.

This research will delineate the related theories of urban morphology research and the governance models of public space to reimagine the urban identity of Toledo's downtown, and to get ahead of the competition with other rustbelt cities. The thesis will illustrate, through critical analysis, the challenge of preserving and reusing an urban fabric with architectural, cultural, and economic interests, within the downtown public realm.

Some of the questions this analysis will consider are: What are the current planning and design approaches dealing with the sparsely populated downtown Toledo now? How have the physical spaces in Toledo's core changed through the removal of urban structures? How has government funding applied in terms of the quality of Toledo's public realm, and specifically, to a unified vision for the downtown and the city? The goal of this paper is to provide a blueprint linking an understanding of the significance of urban morphology as a tool for future reference and research that may be applied to other shrinking cities facing long-term economic and population challenges.

# **EVOLUTION OF PRODUCTION-LIVING-ECOLOGICAL SPACE IN PERI-URBAN AREA: A CASE STUDY IN MACHONG TOWN, DONGGUANG CITY**

**Mr. Zhijie Ma**

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## **Abstract**

Under the influence of metropolitan economic radiation, domestic and foreign capital concentration and rapid investment, rural industrialization and other factors, the socio-economic structure and land use structure in peri-urban areas have changed sharply. The lack of urban and rural management has led to the fragmentation of the landscape and the deterioration of ecological environment. Studying the evolution process of production-living-ecological space in peri-urban areas can reveal the impact of regional land use transformation on the ecological environment, and has important reference significance for coordinating regional land resource development and ecological environment protection.

Machong Town is a typical peri-urban area located on the edge of a large city. Based on the survey of the economic, social, spatial development and the land use data translated from satellite images over the years analyzed by means of land use transfer matrix and landscape pattern index, this paper explores the morphological characteristics and evolution mechanism of production-living-ecological space in Machong Town. The study found that the evolution of production-living-ecological space in Machong Town is an industry-led process. The advantages of port logistics have attracted large-scale port-dependent industries such as grain and oil, and papermaking to gather in Machong Town, which led to the rapid expansion of the production space. In the process of production space expansion, living space has played a supporting role of completing the transformation from traditional rural areas to high-density and rental-type rural areas. Meanwhile, the ecological space is gradually eating away. It is the path that relies on the development of large port and large industries, making Machong Town present a mixed urban-rural spatial pattern unique to peri-urban areas, and have characteristics different from other peri-urban areas formed with the development of township enterprises.

# AMSTERDAM'S POST-WAR BUILDINGS TRANSFORMATIONS IN BOTTOM-UP PROCESSES. THE ROLE OF MUNICIPAL HOUSING POLICY, ARCHITECTS AND COLLABORATIVE GROUPS OF FUTURE RESIDENTS IN DIY (KLUSHUIS) IDEA IN AFFORDABLE HOUSING

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## Abstract

**Background** City of Amsterdam has seen its population grow by an average of over 10 thousand annually. Due to the shortage of houses and rise of housing market prices there is a high demand for diversification means on getting a place to live. This caused thousands of houses from the seventeenth and eighteenth century demolitions in Amsterdam to regain spaces for the new investments. The increasing opposition to demolition plans came up with the idea of DIY – the process of engaging future residents into existing housing transformation process, which would allow for low cost apartment's sale in return for self-managed renovation.

**Aim and objectives** The aim of the study is to investigate the process of the investments and evaluate the results in terms of the quality of architecture, socio-economic implications and goals of the sustainable development policy as well as defining the role of all actors taking part in the process. The objective is to research the examples of successful cooperation between bottom-up movements and municipal policy in order to broaden the view on options for efficient use of post-war housing heritage.

**Method** The research is based on the case study of 3 DIYs processes realized between 2016 and 2022 in Amsterdam. It is a qualitative analysis of all stages of each project addition to the analysis of the available literature and empirical research, in-depth interviews with people involved in the DIY projects are being conducted.

**Findings** Well conducted process leads to high quality apartments as well as promising social effects. Nevertheless it's affordability can be questioned, therefore it should rather be treated as an alternative for active middle class citizens, not as social housing solutions.

**Conclusions and Implications** DIY formula can be interesting as part of revitalization plans, as a way to save post-war heritage.

## **‘CULTURAL TURN’ IN OLD DELHI IN THE POST-METRO PERIOD**

**Mr. Manu Mahajan**

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### **Abstract**

Post-liberalization, India has invested heavily in urban mass rapid transportation systems (MRTS aka **Metro**). Currently, metro systems are operational in 10 cities and in the construction or planning stage in another 22. The impact of mass transportation infrastructure on the local economy is well-researched in the context of North American and European cities. Literature categorizes these impacts as micro (related to land/property values), meso (related to agglomeration of economic activities), and macro (related to overall economic growth).

This paper examines the impact of the metro on Old Delhi (the historic walled city of Delhi) from a cultural economy perspective. Delhi has one of the most extensive networks in the world and 7 stations are located within the old city or in close vicinity. The impact of the metro on Old Delhi is quite unique as it is a living settlement with repositories of cultural products/spaces and work/production-based communities that have evolved over time and assimilated layers of history. Analysis of responses received from traders and residents during interviews, commuter surveys, and spatial documentation conducted for the purpose of this study point at a turn in the cultural economy of Old Delhi, similar to many post-industrial cities. The paper argues that with improved intra-urban accessibility economic activity is undergoing a transformation from wholesale to retail and that cultural products and ‘experiences’ are getting re-invented and diversified to serve the increased volume and variety of consumers. However, fuelled by this thrust on commerce, residential properties are becoming commercial, built heritage is being lost and at places, the morphology of the historical fabric has undergone structural changes.

In conclusion, the paper discusses the contextual conditions of the social, economic and policy milieu working in conjunction with improved accessibility to usher in the ‘Cultural Turn’ in Old Delhi.

# "HOW TO PRESERVE THE HISTORICAL ESSENCE THROUGH RECOGNIZING AND THE EFFECTIVE USE OF HISTORIC URBAN STRUCTURE?" – A CASE OF KALURGHAT BRIDGE AT CHATTOGRAM

**Mr. Md Mustiafiz Al Mamun**

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**Ms. Tasfia Tasnim, Ms. Tasnuva Tabassum Labonno**

*Chittagong University of Engineering and Technology*

**Ms. Sharmin Afrooz, Ms. Israt Jahan**

*Chittagong University of Engineering and Technology*

## **Abstract**

Historic structures are the tangible existence of cultural heritage modernizing urban history, which makes the identity of a city. More than 100 years ago, the research interest increased in the conservation of architectural heritage, historical monuments, and buildings, and its growing intensity of recognizing heritage-site as evidence of history. Besides, global literature could not satisfy how to recognize the local heritage and preserve its historical essence. Moreover, old urban structures have significant civic value to reuse publicly, which is not evident in developing counties. For instance, developing countries like Bangladesh have not yet explicitly prepared the intense strategies to consider urban historical existence and its historical values. This research considers a Kalurghat bridge as a case, which was the only transportation route between the southern region of Chattogram division and the rest of the country around the beginning of the 19th century. Remarkably, the bridge was used for stationing of the East Bengal Regiment and has been documented for several valuable existences during the independence of Bangladesh in 1971. This research considers mixed-method research needs to consider which are context-based and design-based research applications. The main focus is to analyze the historical existence for recognizing it as a heritage site by screening historical coding and determining the future effect of using a distinctive urban structure through Conzen's morphological analysis. The secondary data (e.g., World heritage act and Antiquities Act of 1968) are used for comparative analysis to establish the existence of heritage sites. Primary data sources are used for understanding different stakeholders' perceptions through key informant interviews and narrative questionnaires. Findings illustrate that existing historical evidence should be documented as a heritage site, suggesting establishing heritage-based public space with its cultural distinctiveness considering minimal design and reuse, which would disclose the presence of historical pride.

# **“FRAGMENT, FIELD AND FRAME”. REFLECTION ON HERITAGE, CONTEMPORARY CITY AND ITS IDENTITY. THE CASE OF PERTH, WA**

**Dr Francesco Mancini**

*Curtin University*

**Dr Tanja Glusac**

*Curtin University*

## **Abstract**

Heritage buildings are increasingly prevented from participating in contemporary urban transformations due to an excessive preoccupation with their preservation. Urban heritage sites are defined by modernist planning as extended precincts with clear boundaries, disrupting the continuity of the city's form and experience. Exceptions to this are the centres of European cities like Rome, Paris and London which still acknowledge their historical nuclei as an essential part of their identity.

What happens when the historic nucleus is missing, and isolated buildings, scattered across the urban landscapes, are supposedly entrusted with the role of perpetuating a city's heritage, as is the case in Perth, Western Australia? We argue that urban design has not conceived of itself as a frame that recombines heritage fragments in an urban field through a new habitus, a balanced set of socially, economically and politically conditioned systems of dispositions, that let people experience a city's contemporary and former past as a whole.

We consider Aldo Rossi's concept of urban form being both 'the locus of the collective memory (1982, 130) and a tangible artefact of such memory as a way of responding to the pervasive loss of contemporary cities' identity. A loss that, according to Richard Sennett, derives from changes in urban modes of production and living which let the individual, social, and cultural identity of post-colonial cities inhabitant's psyche diminish, making any connection between heritage and identity in places like Perth difficult.

We propose that connecting individuals, social and urban identities is indispensable for the culturally sustainable development of global and post-colonial cities. The evolution of Perth's Cultural Centre precinct via the new Western Australian Museum demonstrates that heritage preservation, through an integrated manipulation of existing and new built forms, enables multicultural social relations through the acknowledgment of indigenous and non-indigenous cultures, leading to their urban re-signification.

# ATLAS OF THE FOOD SYSTEM OF LISBON REGION: URBAN FORMS OF THE EVERYDAY LIVING

**Prof. Teresa Marat-Mendes**

*ISCTE - Instituto Universitário de Lisboa*

**Mrs. Sara Lopes**

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**Dr João Borges**

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**Dr Patrícia Bento d'Almeida**

*ISCTE - Instituto Universitário de Lisboa*

## Abstract

The forthcoming Atlas of the Food System was conceived as a survey of systems operating in the Lisbon Region, accounting for the relation between urban form and the everyday life, through the perspective of food. Expanding from the food system, the Atlas highlights a plethora of urban dynamics that are fundamental to approach the study of the city and of its territory, and the relation of its forms with its several activities. The Atlas was inspired by the work conducted by architects who provided typological and photographic surveys in Portugal, during the 20th century, but also by Patrick Geddes' suggestion that urban design and planning must be based on the survey of the current conditions of the regional territory.

This presentation introduces the Atlas and its results in order to share examples of urban forms that seem both representative of what exists in the Lisbon Region territory, but that are also suggestive for new ways of understanding it and to rethink it in terms of a sustainable planning transition.

To do that, the presentation is organized in four parts. First, it introduces the main goals of the Atlas and the adopted methodology. Secondly it provides, through selected examples, an historical perspective about the spatial planning instruments which, during the 20th and 21st centuries, contributed to conceptualize and change the territory of the Lisbon Region, regarding the food system. Third, we offer the results of the conducted food system survey, extended to all the phases of the food system: production (rural and urban), transformation (industry), distribution (trade venues), consumption (food businesses) and waste disposal. Finally, we discuss the main results, and suggest proposals for the inclusion of the food system in urban planning policies as a contribution to the creation of more sustainable cities and metropolitan regions.



# **AN AGENDA FOR URBAN FORM CONCEPTS AND DEFINITIONS, TOWARDS A SUSTAINABLE PLANNING TRANSITION**

**Prof. Teresa Marat-Mendes**

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## **Abstract**

The world is changing, and urban agendas are struggling to turn conventional planning paradigms and urban forms to achieve solutions for improving environmental, economic, and social conditions in cities. 'Transforming our world: The 2030 Agenda for sustainable development', published by the United Nations, calls for changes in all aspects of life, including on how humanity relates to the planet. Urban form, the physical creation that responds to specific human needs (for shelter, mobility, work, labour, etc.) is thus called to account for its corresponding material and energy stocks and flows, which are determinant in the link between social life and the environment. Urban history has documented a large array of urban form solutions that have already disappeared, declined, been altered, or even abandoned when they are no longer necessary for society. Others have proved to resist longer or were subject of continuous restructuring, either adapted to accommodate new society uses, tastes or functions. Advances on technology, design, humanity needs and scientific knowledge have also allowed society to shape new urban forms. Altogether, past, and present urban forms constitute an immense and inestimable repository of humanity physical creation of great complexity.

Yet this complexity poses a great challenge when discussing what urban forms are suited to a healthy relationship between societies and the environment. This requires reliable definitions for key concepts to help researchers clarify their study objects and sustain international communication between peers.

At a time when humanity calls for a sustainability change, including with respect to urban forms, urban morphologists must update and revise the concepts and definitions that are most useful for the needs of our very own time. This presentation aims to introduce an ongoing taskforce for compiling an updated glossary of urban form, while exposing its methodological approach and ongoing contributions.

# **REGIONAL MORPHOLOGY. VISUALISING REGIONAL STRUCTURAL HETEROGENEITY TO INFORM GEOGRAPHICAL GOVERNANCE**

**Ms. Valentina Marin**

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**Dr Carlos Molinero**

*University Collage London*

**Prof. Elsa Arcaute**

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## **Abstract**

This paper seeks to develop a methodology to quantify the variation in the spatial organisation of urban regions. Regional governance and its spatial extent rendered in territorial jurisdictions tend to be fixed and homogeneous, overlooking the heterogeneity and variability of sociospatial processes. Therefore, it is urgent to decode and visualise the spaces of governance, so political decisions and planning strategies are not blind to the particularities and complexities of the socio-spatial organisation of territories.

Using Chile as a case study we looked at the structure of the administrative system and its territorial display. Then we went beyond this given boundaries and uncover the intrinsic structural organisation of the urban layout. For doing so, we looked at connectivity patterns of the street network as the principal footprint of daily movement, exchange, and communication between urban areas. We applied percolation analysis to the street network, to uncover the hierarchical structure of the regional systems. The spatial clusters defined by the multiple percolation transitions give us information about the different scales of organisation that are then contrasted to the spatial scales of the politico-administrative system. The heterogeneity of regional hierarchical structures uncovers different typologies of systems of cities which contrast with the homogeneity of the spatial dimension of the administrative system that replicates the same structure of organisation along the national territory.

# MEASURING URBAN DIVERSITY AS ENTROPY IN THE STREET NETWORK, FROM A COMBINED MORPHOLOGICAL AND CONFIGURATIONAL APPROACH

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## Abstract

Urban diversity is a key feature in urban design, being usually pursued in all functional, social and physical realms when looking for vibrant, innovative, and adaptable environments. The concept has become a guiding principle to evaluate urban form, where the street networks are at the centre of the discussion. Street network diversity is examined from a morphological approach as a phenotypic characteristic, whereas within the network theory it is seen as an organisational measure. However, they are usually studied separately, leading to assumptions on desirable urban form and an incomplete and sometimes inconsistent understanding of cities' structures. This paper aims to test to what extent a joined measure of diversity could help to understand the way in which streets are shaped, and how that relates to the diversity observed in a city's spatial configuration.

We use entropy measures to examine and quantify the degree of morphological and configurational diversity in the network, considering for this the heterogeneity of the forms and the arrangement of its components. We compute Shannon's Entropy on the probability distribution of key characteristics in street design such as street segment lengths, street angular variation, and connectivity of street intersections. The same is done for the distribution of traditional network measures like centralities, geodesic paths lengths, and clustering coefficients. Nine cities from three continents, with diverse origins and layout patterns, are explored, using OpenStreetMap datasets. The results show suggestive statistical relationships between the values arising from both sets of computations, providing innovative insights to explore the extent to which diversity in the urban form contributes to the arising of diversity in the configurational structure. The methodology expands the current quantitative analysis of the spatial structure of cities, helping to capture different categories of cities arising from the combination of entropy outputs.

# TOWARDS AN URBAN MEREOLGY: A GENERIC FRAMEWORK FOR URBAN PART-WHOLE RELATIONSHIPS

**Prof. Stephen Marshall**

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## **Abstract**

**Aim** Part-whole relationships pervade urban morphology and the design disciplines, as they are manifest in both analyses of existing form and as 'building blocks' for creating future urban form. Yet these part-whole relations are often left implicit, or else if explicit, they may be inconsistent or not necessarily compatible with each other. Different traditions have grown up for both urban morphology and urban design. This paper sets out to scrutinise the nature of part-whole relations across different urban cases and contexts, to create a generic framework.

**Methodology** The paper first reviews a set of systems of part-whole relations of different kinds at different scales, from a combination of classic and recent sources – from the likes of Conzen and Caniggia to Alexander's patterns and Lynch's elements (which can be used for both analysis and design), and more recent work by Kropf. A meta-analysis will identify and categorise different abstract kinds of part, whole and part-whole relation (e.g. relating terraced houses to plot series, party walls, facades, gardens, perimeter blocks, etc), to generate an extended generic framework. This extended framework will then be populated with further existing cases and new types and interpretations of part-whole relationships.

**Findings** The above will identify distinctive features of the different systems or traditions, reveal areas of common ground and overlap between systems, and also identify gaps, and potential new characterisations and relations between different kinds of parts and wholes. The structural relations between the different traditions will be visualised, such as via tables or dendrograms.

**Conclusions and Implications** The above should help make more explicit, and help integrate, the approaches of different urban morphological traditions, and generate a richer conceptual system of part-whole relations – or, an 'urban mereology' – for supporting representation, analysis, design and design guidance.

# **THE IMPORTANCE OF MEDIEVAL URBAN TISSUE IN THE CONTEMPORARY REALITIES OF A RURAL COMMUNE IN PODKARPACIE. LOST IDENTITY AND LOST POTENTIAL? CASES OF JAŚLIKA, DĘBOWIEC AND OSIEK JASIELSKI**

**Dr Anna Martyka**

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**Dr Dorota Jopek**

*Cracow University of Economics, Poland*

## **Abstract**

Small settlement centres with a historical origin are a crucial element of European cultural heritage. The subject of the study is the historical spatial arrangements of small provincial towns, which were in their heyday in the late Middle Ages. These cities lost their municipal rights at the turn of the 19th and 20th centuries and now play the role of local self-government authorities' headquarters. The purpose of the research was to find an answer to how to use this valuable historical heritage in the contemporary development processes of small settlement units. The analyses were conducted in the context of contemporary threats such as unfavourable demographic, spatial and economic changes.

The main aim of the work was to determine the potential of historical spatial structures in regaining lost identity. The purpose was also to develop design and program guidelines to conduct a potentially effective spatial policy. The research procedure consisted of several stages. It included the methods of case studies and comparative studies conducted from the perspective of an architect-town planner using GIS tools. The first stage of the study outlined the evolution of three selected examples of historical urban structures in terms of spatial and functional features. The second stage consisted of conducting morphological and urban analyses of the studied spaces and comparing the social, economic, and spatial aspects. In the third stage of work, conclusions from the research were formulated. It is vital to stress that the urban tissue as an element of local identity can become an essential part of the development strategy of a given town and a region. The obtained research results indicate a close correlation with the directions of regional development based on the assumption of creating a polycentric network of territorial units as generators of social and economic development.

# **PUBLIC OPEN SPACES AND WATER: URBAN DESIGN STRATEGIES IN RESPONSE TO CLIMATE CHANGE**

**Ms. Marta Mazurkiewicz, Ms. Gaia Nerea Terlicher**

*University of Pavia*

**Prof. Carlo Berizzi**

*University of Pavia*

## **Abstract**

The phenomenon is visible: nature today is at a critical point, and cities are vulnerable. One of the leading causes is the ever-increasing process of soil sealing that has involved cities from the 20th century onwards. Climate change and soil sealing have weakened the cities that can no longer control natural events. Today, the increasingly prosperous and ever-growing cities must face an issue as crucial as it is urgent: the relationship between ecology and nature, between built and nature. If, on the one hand, water represents a threat to the city, on the other, one of the main actions to deal with it is to act with urban voids and nature.

Starting from the assumption that ever-growing urbanization affects negatively all ecosystem services and that water is a fundamental resource for ecological restoration and mitigation of the effects of climate change, 5 European case studies of urban regeneration through the rethinking of public spaces through nature-based solutions are highlighted. The case studies are selected following defined variables: reduce heat island effect, improve air/soil/water quality, increase biodiversity and reuse of urban water.

A new designing approach for public spaces in urban contexts can further give a new semantic meaning to public open spaces in relation to the demands of contemporaneity of well being, health, social inclusion, accessibility and quality space.

# URBAN MORPHOLOGY AND SOCIAL LIFE OF STREETS: LEARNING FROM OVER-THE-RHINE, A REGENERATING MIXED-USE NEIGHBORHOOD IN CINCINNATI, OHIO

**Dr Vikas Mehta**

*University of Cincinnati*

**Mr. Szymon Nogalski**

*University of Cincinnati*

## Abstract

**Background** Revitalizing historic urban neighborhoods emphasize the form of new developments, to ensure the scale, massing and architectural articulation align with the characteristics of their surroundings. The morphological patterns of reconstruction carry with it not only the visible transformation of urban form but also a DNA of social life. We examine this in Over-The-Rhine, a nineteenth-century neighborhood of Cincinnati, Ohio.

**Aims** The study investigates the relationship between the transforming morphology of an urban neighborhood and its social life. The overall aim is to examine how the new forms affect urban living—foster or inhibit personalization of public interfaces of dwellings, the activity patterns these generate, and their impact on the urban social life in the neighborhood.

**Method** We generated morphological maps using Sanborn, land survey maps, other historic maps, photographs and GIS maps for 1890s, 1950s, 1990s and current. The maps include lot sizes, building footprints, building sizes, street walls, and building entrances. For the current period we conduct systematic observations of existing and new urban residential building to document the personalization of public interfaces of dwellings and the activity patterns on street-fronting dwellings and adjoining streets.

**Findings** The new projects that on the face appear urban—use urban forms, street-facing facades, fenestration, etc.—support a non-urban living pattern due to their layout, circulation and organization. Compared to historic forms, these new typologies show minimal personalization and care of street-facing facades and entrances, and limited patterns of use and social behavior on the entrances and street.

**Conclusions** By showing the relationship of forms to visible social life, this study recommends carefully considering urban morphology beyond just the urban form to ask, how will the morphological patterns support urban living and urbanity? Morphological design recommendations can play a vital role in delivering an urban fabric that fosters an authentic social life in urban neighborhoods.

# **THE RELATIONSHIP OF MORPHOLOGY OF POLDER TO CHANGING LAND SYSTEM: A CASE STUDY OF BEEMSTER AND JINBAOWEI**

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## **Abstract**

Polder, an important way of land use which widely exists in the lowland plain area, is the product of the long-term adaptive development of human and natural environment. However, the morphology of polder is constantly changing in different areas and even in the same area in different periods. Benefiting from the theoretical basis of the Conzenian school, this study attempts to explain the evolution of polder morphology from the perspective of land system. Taking the Beemster in Amsterdam, Netherlands and Jinbaowei in Xuancheng, China as research samples, we compared the change process of land system and the differences in space and time of the corresponding polder morphological characteristics between the two samples, and verified the explanation with an example of Manhattan (former Dutch colony) block morphology in New York, USA. Our study indicates that the land system is the original gene of land morphology and the crucial influencing factor of polder morphology. This study helps to understand the reasons behind the morphology of polders and provides important references for land policy designation during the adaptive development of polders.



# **NEO-LIBERAL URBANISM AND SOCIO-SPATIAL SEGREGATION: A CASE OF HOUSING FOR URBAN POOR IN INDIA**

**Prof. Jitendra Menghani**

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## **Abstract**

We are living in a world where market economy driven neo-liberal ethos is shaping our cities in complex ways. Capital investment led urban development has raised concerns of social sustainability in growing Indian megacities wherein approaches and strategies of neoliberal urbanism have led to increased social polarity, marginalization, gentrification, spatial inequality and displacement. With an understanding that neoliberal urbanism induces socio-spatial segregation through creation of spaces of centrality and marginality, the study explores two fundamental questions; first, how state sponsored housing and related policies have consistently peripheralised the urban poor and second, what impact does relocation to mass housing schemes located on urban fringes have on the life of vulnerable groups of our society. The study analyses four slum relocation sites for urban poor who have been displaced from core urban areas due to implementation of urban renewal schemes and policies in cities of Ahmedabad and Surat. Through mapping, interviews and on-site documentation the study reveals socio-spatial manifestations of exclusionary neoliberal policies in the form of disruption of socio-economic ecosystems and networks, reduction in earnings, non-inclusive decision making, commodification of public land, life in resource inefficient environments and culturally non-responsive spaces. In this context, current trajectories of urban growth in India can be questioned, as synchronized efforts by private sector and the state to regenerate urban areas have led to more pronounced socio-spatial segregation in an already fragmented urban landscape.

# THE POTENTIAL OF HRL IMPERVIOUSNESS TO AN ASSESSMENT OF BIOLOGICALLY ACTIVE AREAS

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## Abstract

**Background** Green areas are one of the essential elements of the urban structure. Their minimum share is specified in the Polish local spatial development plans as a spatial indicator - the biologically active area ratio. This is legally defined as an area arranged to ensure natural plant vegetation and rainfall retention. The urbanist usually calculates information on the share of the biologically active area by hand. This can be problematic for anyone unfamiliar with GIS.

**Aims** One of the aims of our study is to analyse whether Copernicus's products can be applied to calculate the land-use indicators applied in planning documents. It is essential to understand the potential of the CLMS for decision-makers in spatial planning. Therefore, the ultimate goal of this study is to improve the user uptake of LC/LU information derived from the integration of CLMS and national databases.

**Method** In this research, the biologically active area was obtained from a High-Resolution Layer provided by CLMS. The degree of imperviousness was reversed and converted into a degree of biologically active areas. The data are aggregated within evidential units. Detailed comparative analyses are made within the boundaries of the Lodz auxiliary units. The precision and accuracy of statistics are verified and validated using calculations from national vector databases, including BDOT10k and a base map.

**Findings** The comparative analysis of the selected databases confirmed the applicability of HRL Imperviousness to an assessment of biologically active areas. Insignificant errors and discrepancies are due to possible inconsistencies in the definitions or the outdatedness of national databases.

**Conclusions** Metrics from CLMS has the potential for calculating and monitoring biologically active areas to support the preparation of spatial planning documents and enable easy comparisons among cities, districts and housing estates. All measurements on the biologically active area will constitute input in a web-based application.

# **URBAN HIGHWAY AREAS: RECONSIDERING MORPHOLOGICAL ELEMENTS OF THE APPROACH TO URBAN STUDIES**

**Mr. Nikola Mitrovic**

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## **Abstract**

This study aims to characterize and map morphological changes that occurred in urban areas crossed by capital transportation infrastructures such as highways. There are geographic, morphological and classification perspectives of considering these urban areas. Bearing it in mind, this paper tries to define a method between morphological and urban studies approach of these areas.

The method is applied in the urban area of the E75 highway in the urban fabric of Belgrade (Serbia). Based on the historic approach, such as the evolutive perspective of the transformation stages, observation of the transportation infrastructure and the surrounding urban space through multi-scale morphological analysis includes modernisation of the city from its construction, development period and transition to the actual times.

Starting from specific criteria based on individual elements or clusters in the landscape, as a result of analysis, there are specific morphological elements that provide information about the characterization of urban highway and its urban space.

Street as one of the primary elements of urban form is transformed. According to fact that the infrastructure is a problematic formal element in the study of urban form, this paper can contribute to future urban morphological studies by identifying categories of morphological elements to study the relationship between transportation infrastructure and the urban space. Also, this paper highlights the advantages of methodology in morphological analysis.

# THE ROLE OF URBAN MORPHOLOGY IN SHAPING INNOVATIVE ENTERPRISES

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## Abstract

**Background** Until recently, it was generally accepted that the main factor increasing the competitiveness of enterprises is their size or assets. Currently, this observation seems to be losing its importance in favor of a different approach: we can talk about the improving situation of enterprises mainly due to the implementation of innovative methods and the mobilization of knowledge and technology. The innovative activity profile of companies is one issue - the other is the way it affects the environment and its impact on the development of companies.

**Aim and Objectives of the Study** The main goal of this presentation is to answer the questions relating broadly to the relationship between innovative enterprises, their location, spatial conditions, and feedback between them.

**Method** Identification of the relationship between urban spaces and innovative companies was possible thanks to interviews with town planners working in urban units in twelve voivodeship cities in Poland. Thanks to in-depth interviews with specialists directly related to the design of urban spaces, it was possible to determine whether, and if so how, cities interact with innovative enterprises.

**Findings** The research has shown that there is no one specific model of city planning for innovative enterprises. Despite the same legal conditions related to spatial planning, urban policies differ from one another. Some local governments strive to design space to be as flexible as possible to changing conditions while others specify provisions for the local spatial development plans. Moreover, also enterprises, depending on the profile of their innovative activity, require different spatial conditions.

**Conclusions and Implications** Creating space for innovation should focus on a multidisciplinary approach. It is essential to analyze both the needs of residents and potential investors or tenants. The space itself should fulfill many functions to avoid dwindling activity in districts after working hours.

# **EVOLUTION OF URBAN RENEWAL AND VERTICALIZATION: THE CASE OF THE SANTIAGO METROPOLITAN AREA BETWEEN 1990 AND 2019**

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## **Abstract**

**Background** Identifying the temporal-territorial phases of the renovation processes serves to understand the real estate logic behind them. Urban renewal through verticalization in Santiago de Chile has been developed with commercial guarantees from the State (subsidies, local deregulation, or absent regulation). The result is the generation of significant real estate projects that imply substantial gains in private income from a strong investment in fixed capital and permanent transformations and socio-economic effects on the population.

**Aim and objectives of the study** Analyze the evolution of verticalization due to urban renewal processes in Santiago de Chile from 1990 to 2019.

**Method** Based on the information on the building permits, a quantitative analysis is carried out of the evolution of high-rise housing construction considering three variables for the same study period: number of permits, the average number of floors, and the number of apartments. The latter is contrasted with the existing housing stock and the quantitative housing deficit. To carry out this task, the AMS is divided into five large territories: center, pericenter, high-income cone, peripheral, and satellite.

**Findings** The analysis reveals a relocation of high-rise building permits, an increase and subsequent adjustment to the height expressed in the number of floors, and a more significant increase in the supply of high-rise housing in the pericenter. It is also observed that the production of high-rise housing has not been sufficient to end the housing deficit.

**Conclusions and Implications** It is concluded that the real estate dynamics of urban renewal have been oriented towards verticalization, but a verticalization that is adaptive depending on the possible business niches in the territory. In these niches, the height is used and the space to build a more significant number of units to generate more income.

# **POST-WAR LANDSCAPE VERSUS URBAN REGENERATION PROCESSES IN THE SMALL TOWN OF CENTRAL AND EASTERN EUROPE. CASE OF WĘGORZEWO IN NORTH-EASTERN POLAND**

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## **Abstract**

The warfare of the Second World War and post-war devastation activities destroyed many European cities. In addition to the destruction of larger centres of strategic importance, small towns also suffered. An example is Węgorzewo in north-eastern Poland (former East Prussia). The scale of destruction of the pre-war urban fabric exceeded 80%, and the old town's built-up area practically ceased to exist. In this town, most of the spatial processes and problems characteristic of the destroyed cities of Central and Eastern Europe occur. The post-war spatial development during the communist period caused irreversible changes in the urban tissue. The original spatial layout was abandoned, and numerous modernist buildings were erected. These changes were consolidated during the economic and political transformation of the 1990s. Today, several decades after the end of WWII, despite the corrective measures taken, the town still faces the problem of spatial chaos. Its morphological and physiognomic manifestations are visible in the lack of a central public space, the loss of the historical character of buildings and the disharmony of the urban landscape. A fundamental question in this context concerns the effectiveness of the urban regeneration measures undertaken and the efficiency of the revitalisation spatial policy tools. In order to find an answer to these questions, a diverse methodological apparatus was used in the research, consisting of an analysis of morphological changes and the physiognomy of the urban landscape, analyses of municipal documents and expert interviews. The research results are set in the context of the cases of other European cities and towns. The conclusions indicate the stages of the town's spatial transformations and the threats to the shaping of the spatial order in Węgorzewo and possible paths for future directions of development.

# **POST-WAR RECOVERY AND REVITALISATION. SUCCESS OR FAILURE OF SPATIAL (RE)DEVELOPMENT OF TOWNS IN NORTH-EASTERN POLAND**

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## **Abstract**

The towns of former East Prussia (north-eastern Poland at present), were affected by massive war damage and heterogeneous forms of reconstruction. In many cases, we can speak of a kind of “urbicide” concerning the annihilation of original buildings, spatial layout, urban landscape, and the loss of cultural continuity through the replacement of the population. Some towns have not been rebuilt at all; in other cases, the historical centres have been replaced by districts of modernist blocks of flats. In others, attempts have been made to rebuild pseudo-historical buildings or insert some seal buildings. Consequently incoherent building complexes have emerged in former urban centres. The article aims to characterise these phenomena, taking the example of the analysis of 18 most destroyed towns of the current Warmian-Masurian Voivodeship, where the scale of destruction reached or exceeded 70% of the urban tissue. Based on the analysis of the studied group, the authors distinguish several models of their reconstruction after 1945, emphasising the form, scope and directions of urban spatial and functional transformations. They also attempt to determine the scale of revitalization processes in the towns under study. The research aims to answer the question to what extent the revitalisation processes have improved the aesthetics and functionality of the central spaces of the most run-down towns in the region, and in what direction the urban planning processes should be heading. The authors ask the question about the subsequent development and urban regeneration stage. The methodology applied refers both to classical concepts based on the Conzen’s analysis of the town plan, and the study of development documents and analysis of historical data in the context of the role of individual agents of change, influencing the shaping of urban space in the past and present.

# **SPATIAL FRAGMENTATION AS AN OPPORTUNITY FOR RESILIENCE BUILDING THROUGH URBAN ACUPUNCTURE: LEARNING FROM TEHRAN AND BUCHAREST**

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## **Abstract**

The rapid urbanization of contemporary metropolitan environments has led to increasing spatial fragmentation, a challenge that can be seen across regions worldwide. Disconnected spaces have revealed spatial and social voids that seem to reduce the adaptive capacity of a region. On the other hand, there are latent potentials and capacities in such spaces that may contribute to urban resilience. Accordingly, this study examines the relationship between urban leftover spaces and building resilience. It aims to reveal how urban acupuncture can promote resilience in leftover spaces to either reduce or embrace spatial fragmentation. This paper reviews the literature on spatial fragmentation and urban resilience both from descriptive-analytical and normative perspectives. It puts forward urban acupuncture as a way to locate critical spatial structures and processes that need to be addressed at a small scale. The study first develops a conceptual framework around fragmentation (from a descriptive-analytical perspective) and urban acupuncture (from a normative perspective). It investigates the assumptions behind the concepts to identify new ways of addressing spatial fragmentation and proposes a dialectical framing of vacancy based on resilience and urban acupuncture, along with a reassessment of leftover space as a planning tool. The application of the framework is demonstrated in two cases: Tehran and Bucharest. Based on the results, spatial fragmentation significantly influences urban resilience to prevent expansion. Urban acupuncture opens up the possibility of developing optimistic future scenarios as it considers not only leftover spaces but also the broader opportunities they generate for urban resilience. Depending on the urban context in question, this strategy can be applied either through a single intervention in a specific place or through a network of coordinated interventions in different locations.



# REVITALIZATION THROUGH MOVEMENT: USING PEDESTRIAN NETWORK ANALYSIS TO BREATHE NEW LIFE INTO URBAN SPACES

**Ms. Sara Nalaskowska**

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## Abstract

**Background** Pedestrian movement has been widely recognised as a key ingredient to thriving urban spaces. While the mechanics seem simple, many have failed to capture the multifaceted logic behind it. In right doses, footfall determines the success of local economies and healthy communities. Movement patterns, affected by such factors as spatial configuration and land use mix, could provide key evidence to boost vitality of failing urban areas.

**Aim and objectives of the study** The aim of the study was to explore a series of network-related metrics based on the urban fabric of Łódź, to show how they can be incorporated into urban renewal projects by consciously improving accessibility and land use mix.

**Method** The study was based on a pedestrian network of formal and informal pedestrian paths, covering the study area located in Łódź, Poland and its buffer area. The network, combined with land-use related point of interest data (POIs) was used to calculate a series of metrics using sDNA, spatial network analysis software and native QGIS tools.

**Findings** The study captured the diverse character of urban spaces defined by diversity, completeness and footfall-attracting qualities and illustrated them globally. The metrics were applied to fictional 'before and after scenarios' to serve as a guide for practical application.

**Conclusions and Implications** The study reveals the potential application of analytical metrics to provide evidence-based support for effective reshaping of failing urban areas through informed guidance on land use offer and street layout.

## **STUDY OF URBAN POLICY IN A LATIN-AMERICAN CLUSTER: MORRO DAS PEDRAS IN BELO HORIZONTE/ BRAZIL**

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**Mr. Igor Mageste**

*Universidade Federal de São João Del-Rei*

### **Abstract**

The present study aims to analyze the urban form of the city of Belo Horizonte in its relationship with the area of Morro das Pedras Cluster, located in the West region of this Municipality. If the city of Belo Horizonte has its original design and planning at the end of the 19th century, as a modern city project, the history of the Cluster has its time-spatial conformation originated in the same period, however without urban design or planning within the conventional molds. The investigation was guided by three methodological steps: the historical survey and spatial information management and urban aspects of the city of Belo Horizonte; the history of the formation process of the Morro das Pedras Cluster and the analytical study of the relationship between the Cluster and the public and urban policies of the municipality of Belo Horizonte. With the application of these methodological procedures, it was possible an experimental approach of understanding, through morphological reading, what is called structural space racism, the result of political consensus and disagreement on urban management of peripheral areas. The peripheral regions or areas are the focus of greater negligence on the part of public orders and suffer from a lack of management and public policies addressed to them. The study emphasizes the consideration of different forms and processes of production of urban space in a decolonial sense. There is in this work the intention to recognize the existing local urban form and its socio-spatiality conditions associated with the debates carried out by this research. When questioning public management, residents are simultaneously provided with other possibilities of managing and considering the public and collective spaces of this type of urbanization, such as this Cluster, in order to establish other actions and practices that favor the public and the collective, as a whole.

## **A REFUGEE PATTERN LANGUAGE CLUSTER 3: WELCOME COUNTRY – INDEPENDENT REGIONS**

**Prof. Hans Neis**

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**Ms. Pamanee Chaiwat**

*University of Oregon*

### **Abstract**

This paper is part of a larger project, the 'Refugee Pattern Language.' In Chapter 3, we present 10 -12 patterns of Countries and Independent Regions that help refugees to survive and start a new life. Open or welcome countries are critical for migrants' and refugees' lives and support in their different functions and needs. Closed countries need to be convinced to share some of the burdens by opening at least to some degree, or help in other ways. We explore patterns that look at countries, states, and cities and their refugee policies, support systems such as housing, people's attitudes, and involvement, starting with the UN Refugee Declaration from 1951. Research is based on fieldwork, case studies, literature, and PL methods.

### **Cluster 3. Welcome Country – Independent Regions**

1. Countries and Independent Regions - Refugee Declaration 1951
2. (Individual Country – Independent Region)
3. Groups of Countries and Independent Regions
4. Walk-Up Migration Countries
5. Resettlement Immigration Countries
6. Taking in a Million People
7. Refugee Camps as Temporary Solutions
8. Large Refugee Camp Cities
9. (Unified Refugee Concept for the European Union)
10. Large Refugee Groups in Host Country – Bridging Gap of 'One and the Other'
11. (Multi-Culturalism and Pluralist Culture)
12. Sanctuary Cities
13. The Family Invitation Program

Cluster 3 starts with the exploration of the idea of 'Independent Regions' with a population of around 12 million people each as an extension or alternative to the current imbalance of large and dominant countries (RPL3.1-3.3). Patterns 3.4-3.5 explore the nature of Walk-to countries and Resettlement countries. RPL 3.5-3.8 investigate the capacity of taking in a large number of refugees and the nature of large camps. RPL 3.9-3.13 investigate the issue of how refugees and local people can live together by bridging the gap of 'One and the Other.

# REVITALIZATION OF BROWNFIELDS IN RUSSIAN AND BALTIC CITIES: COMPARING INTERACTION MODELS BETWEEN STAKEHOLDERS IN DEVELOPMENT PROJECTS

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## Abstract

**Background** The post-socialist countries in the 1990s had to face both the transformational crisis towards free-market economy and the deindustrialization. This process was accompanied by a large-scale closure of inefficient industries and resulted in a significant number of brownfields. Planning on transforming such post-industrial areas can be manifested in various forms of interaction between stakeholders while planning redevelopment projects. However, there has not been sufficient research that would attempt to identify models of stakeholder interaction in the planning stage of brownfield redevelopment projects.

**Aim and objectives of the study** This paper is aimed at identifying and comparing stakeholder interaction models at the planning stage of redevelopment projects of former urban industrial areas in post-socialist countries, namely in Russian and Baltic cities.

**Method** The study uses an exploratory research design. Sample will consist of redevelopment cases of industrial territories in Baltic and Russian cities. Qualitative comparative analysis is based on case comparison by the duration of the planning stage, ownership structure, redevelopment initiators, number of participating stakeholders, their type based on their involvement in the project, and financial model. Based on that, general approaches to the redevelopment of post-industrial areas and specific models of stakeholder interaction in the Baltic and Russian cities will be identified and compared.

**Findings** It is expected that the study will provide insight on the differences in the approach to planning the redevelopment of industrial areas between the Baltic and Russian cities. This will be followed by recommendations for adjusting stakeholder interaction strategies in Russia when planning the redevelopment of urban industrial areas.

**Conclusions and Implications** Obtained findings will contribute to understanding specifics of the relationship between stakeholders in post-socialist countries, namely in Baltic and Russian cities. From the practical perspective this could potentially lead to improvement of existing brownfield redevelopment strategies.

# **ASSESSING THE IMPACTS OF CULTURAL TOURISM ON THE HISTORIC CORE OF ANTAKYA (ANTIOCH) IN TURKEY**

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*İskenderun Technique University*

## **Abstract**

In Turkey, since the 1970s with the promotion of tourism for historic settlements, the tourism industry has benefited from supportive policies, financial priorities, incentives, subsidies, and public lands rented by entrepreneurs with favorable terms. Nowadays, many of the historic cities of Turkey are experiencing tourism-led regeneration in their historic core due to these changes in the policies. Antakya, ancient Antioch, has been experiencing the same process in recent decades. The conservation development plan of the city, effectuated in 1987, has envisioned cultural tourism as an integral part of Antakya's future and the effects of this vision are apparent in the city. This study aims to assess the impacts of cultural tourism on the historic city center, specifically focusing on a residential quarter that evolved in the Ottoman period. Named as the '3<sup>rd</sup> Precinct' at present the quarter has historic public buildings like Orthodox Church, Catholic Church, Sarmiyeye Mosque, and an Ottoman public bath, and is located at the heart of the touristic attractions. First, the study discusses the vital decisions made by authorities like the revision of the conservation development plan in 2009, and the subsequent decisions of the conservation council promoting cultural tourism. Secondly, the physical, economic, and social impacts of these decisions are assessed through the information obtained from the archives of the local conservation council, field surveys, and in-depth interviews with the locals and decision-makers. The results show that nearly 13 years after the revision of the development plan, the rate of the changes is high, registered houses are mainly turning to bars, restaurants, hotels, and hostels, and the area is in danger of losing not only its authentic features but also its original residents.

# RESEARCH ON RENOVATION STRATEGY OF EXISTING RESIDENTIAL AREAS IN SHANGHAI FROM THE PERSPECTIVE OF RESIDENTIAL SATISFACTION

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*Tongji University*

**Prof. Yong HE**

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## Abstract

**Background:** In Shanghai's downtown, there are a great number of old residential areas that are widely scattered and numerous. The strengthening of community comprehensive quality will become the emphasis of Shanghai's urban rejuvenation in order to improve inhabitants' quality of life and the urban landscape.

**Aim and objects of the study:** With Shanghai's ongoing urban renewal, a variety of renovation strategies are applied to renovate existing residential areas. Which type of refurbishment method is most effective in increasing residential satisfaction? This field of study has yet to be fully explored. The purpose of this study is to examine the relationship between residential satisfaction and renovation strategies.

## Method:

- 1) This study involved 12 renovation measures, with 22 specific evaluation indicators, based on which generated a residential satisfaction questionnaire of existing residential areas in Shanghai.
- 2) Formal questionnaires and interviews were conducted in existing residential areas in Shanghai. 215 questionnaires were collected in this survey, while 184 questionnaires were valid.
- 3) The correlation between various renovation strategies and overall residential satisfaction is obtained through data analysis with statistical software.

**Findings:** The results of the research reveal that the environmental renovation strategies have a low correlation with the overall living satisfaction of residents. However, renovation strategies in terms of housing renovation and supporting facilities renovation show a high correlation with the residence satisfaction.

**Conclusions and implications:** This study proves that there is a correlation between renovation strategies and residential satisfaction, and then proposes targeted strategies for the architectural and environmental renovation of existing residential districts. By taking the existing residential areas in Shanghai as a typical representative, we intend to derive some more general conclusions about urban renewal and reconstruction.

# URBAN FORM, PLANS AND PROCEDURES: SOME RECENT TRANSFORMATIONS OF BELGRADE'S URBAN TISSUE

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**Dr Božidar Manić**

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## **Abstract**

This paper seeks to establish the relationship between the theory of urban morphology and the practice of urban conservation and urban planning. Spatial configurations of streets, blocks and other types of urban ensembles represent a heritage of a kind whether it is institutionally protected or its value is recognizable by experience or analysis. Good experiences of citizens' living and good traditions of city planning and building are ignored in contemporary urban planning practice in Belgrade, but also other Serbian towns. There, new planning approaches are applied which are based mainly on fulfilling the economic interest of private investors. The main issue is how to protect the space, how to ensure positive effects of future transformations which are supposed to meet the complex demands of contemporary life. In considering these, the recommendation from the international charters on the protection of urban heritage as well as good planning practices and urban morphology approach are discussed. An example of a postmodernist open residential block, incorporated in the urban tissue of individual housing, has been analyzed in terms of spatial and functional features of the block, procedures of planning, the content of planning documents, and its implementation. The recent transformations have been discussed that have been unfolded within a new planning framework and are mainly characterized as partial interventions which neglect the context and the initial plans which once have been developed for the whole block. Urban morphology can help in analyzing space qualities, creating scenarios for future development, and controlling planned transformations. The way of introducing the urban morphology approach depends on the capacity of the institutional and legal framework and it calls upon introducing new procedural instruments and steps: commission for check physical/morphological dimension of plans, handbooks for assessment the qualities of the location, etc.

# REINVENTING THE AMERICAN SMALL TOWN: ARCHITECTURE, URBAN FORM AND REGENERATION IN COLUMBUS, INDIANA

**Mr. Szymon Nogalski**

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## Abstract

**Background** Columbus, Indiana is in many ways a typical city in the Midwestern United States. However, owing to a vision of a local industrialist, J. Irwin Miller, and the company he founded, Cummins Engine, the city boasts a unique collection of masterpieces of Modernist and contemporary architecture. The impact of this patronage programme has resulted in the city's and local community's awareness and attention to the quality of built environment, influencing decisions about investment, regeneration and placemaking.

**Aim and objectives** The overarching aim of the study is to investigate the relationship between transformation of urban form of Columbus and the city's initiatives relating to built environment (in particular recent urban design and planning policies and plans relating to regeneration).

**Methods** The study analyses transformation of the urban form of Columbus, using a combination of historic and contemporary maps (including Sanborn, aerial photographs, floorplans), alongside documents, plans and strategies produced by the local authority and / or local community.

Morphological maps for time periods show plots, building footprints, public open spaces, as well as entrance locations, ground floor uses, landscaping and landcover patterns, where possible. Content analysis of recent planning and urban design documents concentrates on the expected spatial definition of proposed developments.

**Findings** The architecture programme raised aspirations for the residents of Columbus when it comes to design quality and amount of public spaces. There has been however a limited understanding of how the spatial characteristics, form of these investments translates into regeneration objectives and placemaking outcomes.

**Implications and conclusions** Columbus' case is an important example of an attempt at reconciling – through architecture and urban design – regeneration objectives of preservation, community life and economic opportunities, without sacrificing the authenticity of a living, changing city.



# ADAPTING THE TOWN TO A DIFFUSING RETAIL INTERFACE

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## Abstract

**Background** Retail interface has been a significant generator of urban form in the past. The very existence of the town was often justified by market frontage, manifest in the street. The street as route has a significant place in the history of urban form.

In this the street was the binding element of public realm, serving the line of frontage by which the private plot interacted with the public space of the town or city. Here the buyer expected to find the seller. Even when urban plots began to collect into blocks, the block edge still formed the primary front line between sale and purchase.

The retail interface is however moving to require and define a very different urban form. The user now enters the city not via the street but via the parking lot. The retail plot no longer presents to the street. Both the shopper and the shop have uncoupled from the traditional urban fabric and re-positioned their relationship on assigned ground, or more recently on computer screen, unhindered by obligations to the heritage of the street. Although the street may be recalled in the shopping mall, it no longer collects and presents the frontage of the city. The readable understanding of the city by its user has thus changed.

This paper, drawing from research on European urban settlements, documents some recent metamorphosis in the relationship between retail plot and public realm.

**Research Methodology** The research methodology draws on cartographic regression, planning documentation, stakeholder interviews and settlement survey, using a sample of 66 towns.

**Findings and Conclusion** From its findings the paper concludes that the street, together with its support structure, is under significant relegation, with potential loss of purpose.

# **EXPLORING THE EFFECTS OF TOURISM ON FRINGE BELT AREAS: THE CASE OF ANTALYA, TURKEY**

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## **Abstract**

It is inevitable for cities to change their conditions over time and to undergo physical changes depending on new development decisions. Tourism activity is one of the important factors in the development of the city and the effect of tourism activities on urban development in the Antalya region, which has been chosen as the study area, is clearly observed. Antalya, which is a port city from the southern region of Turkey, still retains the combined traces of Romans and Turks.

The first settlement in Antalya started in the Old Town, which is inside the city walls, and it did not change for many years and went through serious changes after 1980 due to tourism investments and decisions. Fringe belt areas been seen as planning areas as a result of rapid development and the need for new tourism areas, and fringe belt areas have undergone characteristic changes. While there are fringe belt areas that mostly show agricultural characteristics in the center of Antalya (in the fortified town), these areas have turned into tourism-oriented construction and residential areas with the tourism decisions. While the fringe belt areas in the coastal region have undergone changes such as modification and translation as a result of tourism decisions and the increase in land values, the fringe belt areas around the fixation line, which are important in the urban memory, have undergone changes such as expansion and reduction. In this study, plan analysis have been made by examining the master development plans of Antalya in different years from the 1920 Scarpa map of Antalya to the 2021 satellite image and it is aimed to contribute to the literature by analysing the changing nature of the urban fringe belts in the touristic-historical city.

# EVOLUTION AND TRANSFORMATION PROCESSES OF URBAN FORM. URBAN TISSUES IN THESSALONIKI, GREECE

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## Abstract

Urban tissues and their complex mosaic are a cumulative result of material and immaterial forces with constant re-inscriptions. Heterogeneous elements such as designed practices, structural elements, functions, social perceptions, cultural and political processes, everyday decisions and moments, memory and symbols are directly or indirectly interrelated with the creation, evolution and transformation of physical and socio-spatial urban form.

This study aims at the articulation and documentation of a morphological codification of urban tissues in Greek cities. Our main focus lies on exploring the complex nature and substance of urban form and understanding and interpreting the ways in which existing urban fabrics emerged and were composed, restructured, and transformed, finally resulting in the contemporary urban landscape. There is a profound need to develop an integrated methodology of morphological analysis in order to provide a comprehensive interpretation of existing specificities, morphological and socio-spatial complexity of urban tissues in Greek cities. Three levels of scales are used in the research applied into the case study in Thessaloniki: 1. The macro-scale, where we observe, the morphogenesis of the urban whole as a physical entity, 2. The intermediate scale, where we explore the urban fragments, the different urban tissues (e.g. medieval, planned tissues of the '20s, '30s, '70s and '90s, and autogenous tissues of the '70s) and the compositions of their distinguished elements, and 3. The micro-scale, the urban block, where we identify the dynamic interrelationships between lived urban fabrics and the built space. Several approaches from different morphological perspectives (historico-geographical, process-typological, and relational-material) are implemented in each level of analysis. The proposed method of inquiry could be used in two ways: for urban analysis research or investigations of the urban form in other cities, and as a tool for preparing urban design projects and interventions.

# **THE COLLECTIVE CONSTRUCTION OF PLANNING IN SMALL CITIES - THE EXPERIENCE OF TECHNICAL ASSISTANCE IN THE CONSTRUCTION OF THE MASTER PLAN FOR CARNAUBAL**

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## **Abstract**

The main instrument of municipal urban planning in Brazil are the Master Plans. They provide the guidelines for the city's urban growth. Every municipality with more than 20 thousand inhabitants, with public interest, tourist and environmental potential or with environmentally degraded areas must have a PD, which, by law, must be elaborated in a participatory way involving all segments of the population through public hearings and community meetings. One important critical and transforming agent of urban space is the University, fulfilling its social role as a producer of knowledge. This article presents partial results of studies carried out in a city in the interior of Ceará, called Carnaubal, with a population estimated of 17,763 inhabitants and located 345.8 km from the state's capital, Fortaleza. Carnaubal is located in the administrative region of Ibiapaba and, although it does not require the elaboration of a Master Plan, it is extremely important to structure the growth of these small towns in the interior of the country from now on, in order to minimize the harmful effects of their disorderly growth on the environment. In addition, the instruments present in the Master Plan enable the optimization of public investment both in terms of urban design and in the urban economy and distribution of public services. The proposal for technical assistance in the elaboration of Carnaubal's Master Plan arose at the request of a former student and councilor who showed interest and concern with the planning of her city. From this initiative, the research group "Urbanismo Colaborativo - UrbColab", affiliated to the research center "Núcleo de Pesquisa em Arquitetura, Cidade e Tecnologia - NuPACT", began this experience involving students of Architecture and Urbanism, teachers, professionals and the population, using various methods, drone assistance, Qgis and fieldwork.

## **ACADEMIC CONTRIBUTION TO COLLECTIVE BUILDING OF THE CITY - AN EXPERIENCE IN THE COUNTRYSIDE OF CEARÁ - BRAZIL**

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### **Abstract**

The appropriation of space is linked to the sense of belonging and identity of the place. This sense of belonging is generated from the awareness of being in the world, of participating in it, not only of occupying space, but of transforming and being transformed by it. When we talk about the city - an organism that transforms and is transformed by humans - and think about its planning, we must consider collective strategies of reflection on the territory. When the population participates in the process, the form of appropriation of public space is differentiated and much more effective than projects imposed from the top down. Based on this assumption, the research group "Urbanismo Colaborativo - UrbColab", affiliated to the research center "Núcleo de Pesquisa em Arquitetura, Cidade e Tecnologia - NuPACT", aims to encourage discussion about aspects of everyday life that influence the collective construction of the city, more specifically in small and medium-sized cities of Ceará (Brazil), promoting a dialogic relationship between Academy, Society and the Government. Meetings are held weekly to discuss the most emerging and insurgent actions that are presented to the group. As we work in a completely horizontal and inclusive way, we are open for the demands that appear and that are in consonance with the group's proposal. Among them, as a partial result, we are consolidating three work fronts that emerged as demands: technical assistance in the preparation of the Master Plan for Carnaubal; creation of proposals for the revision of Sobral's Master Plan; and training cycle for the elaboration of Participatory Master Plans. This article aims to show the importance of academic engagement in city discussions as a way of disseminating knowledge and being able to act effectively in the construction of more dignified and inclusive cities.

# ADAPTATION TO CLIMATE CHANGE – A CHALLENGE FOR SMALL TOWNS

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## **Abstract**

A compact city is one of the leading solutions to counteract the negative impact of climate change. It is also considered a node in the Transit-Oriented Development network (Calthorpe, 2011). However, as we learn from the analysis of Berghauser Pont et al. (2021), a higher urban density can, on the one hand, positively influence public infrastructure, transport and economics, but on the other hand, it can have negative environmental, social and health impacts. Therefore, the main objective of this research is to look for the trade-off, including density and provision of open green areas that will serve climate change adaptation.

While climate change adaptation has been explored through extensive literature, there is still much to research, especially when dealing with small towns as a part of the region. Therefore, this paper focuses on a small town – Zgierz (less than 60.000 inhabitants) in central Poland near Lodz. Due to the collapse of the textile and chemical industries, it needs revitalisation of its core part. Furthermore, progressing sprawl and de-urbanisation processes exacerbate the degradation of the town centre. Nevertheless, Zgierz could be transformed into one of the nodes in the regional settlement structure, implementing a transit-oriented development strategy.

The study presents the quantitative analyses of the urban form of Zgierz town centre, prepared using GIS aided by open-source data. First, we estimated the current residential densities and calculated population densities by applying the morphological types' framework. Then the provision and the actual distances to green areas were examined. Moreover, plan development capacities were also addressed based on the Local Plans of Urban Development and Study of Conditions and Directions of Urban Development. Finally, the results were compared and assessed. In conclusion, this paper presents the recommendations for balancing density and amount of open green areas for the town centre of Zgierz.

# WHAT DO WE REALLY KNOW ABOUT THE RELATION BETWEEN RESEARCH AND PRACTICE?

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## **Abstract**

The relation between research and practice has been a theme of debate in social, physical and life sciences, for quite a long time. Since the creation of ISUF in 1994, the link between knowledge and action on the physical form of cities has been one of the fundamental concerns of the organization. It has been discussed in some editorials of the journal 'Urban Morphology', published after 2000, and in a set of viewpoints, written in the mid-2010s. By then, a task force was created to report on ways in which ISUF could build better bridges between researchers in urban morphology and practitioners. Today, as in the mid-1990s, research and practice are two separate worlds. Why? What are the main reasons explaining the gap? Is it a matter of communication? Is morphological knowledge useless to planning and architectural practice? What are the key aspects of practice and 'real life' that are not being considered by academics, disabling the later adoption of their proposals? Or is 'scientific knowledge' and 'practical knowledge' incompatible? Two on-going projects are used to address these fundamental questions. The first is the Knowledge Alliance for Evidence-Based Urban Practices (KAEBUP), a European research project gathering two different kinds of partners, researchers (including young students) and practitioners. This is an exploratory project, made of a high number of events exposing researchers to the specific contexts of professional practice, and practitioners to the contents and processes of research activities. The second is a consulting project developed by the authors of this paper for the local authority of Matosinhos, a city in the metropolitan area of Porto, Portugal. Faced with a municipal plan that offers only general guidance for the processes of urban transformation, the local authority aims at changing the paradigm, establishing a new municipal regulation based on scientific morphological knowledge.

# **COMMUNITY RENEWAL FROM THE PERSPECTIVE OF SOCIAL NETWORKS – TAKING THE JIALINGQIAO XICUN, CHONGQING AS AN EXAMPLE**

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## **Abstract**

Restricted by the times and economic conditions, the public space in old residential communities is currently facing problems such as insufficient supporting facilities, lack of residential landscaping, low utilization rate of large space and occupation of small space. These problems have restricted the forms and places of activities carried out by residents. As a consequence, the previous social network among residents has gradually disappeared, the community structure has declined and most residents lack a sense of belonging. The public space in old residential communities urgently needs to be further transformed. This paper aims to define the design requirements of transformation based on the protection of the previous social network in old residential communities by means of quantitative analysis. Basing on the Social Network Analysis method, the paper respectively constructs residents' behavior network and community public spatial network and the above networks are compared and analyzed from three perspectives of network structure, centrality, and clique, considering five parameters and their derived parameter indexes: the number of density, the number of cluster coefficient, the number of average path length, the number of centrality and the cliques of networks. With existing community cases, and through comparative and quantitative analysis of its public space, the research findings demonstrate that the mismatches between residents' behavior network and community public spatial network are related to factors such as spatial quality and accessibility. Combining with the actual situation of the community and the effect of space attributes on residents' activities, we target corresponding optimization design strategy for specific space.



# **EVOLUTION OF URBAN FORM AND TRANSFORMATION OF BLOCK IN GLASGOW SINCE 18TH CENTURY**

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**Dr Ilgi Toprak**

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## **Abstract**

Understanding the historical evolution of urban morphological processes and urban form may help architects and urban designers in urban design process, specifically creating physically and socially inclusive urban spaces. Since urban form and urban space are so tightly linked, morphological changes eventually result in not only spatial transformation but also social changes. This research is about evaluating the transformation of urban form in Glasgow by analyzing the urban grid, and the changes in block and plot sizes in the city since the 19<sup>th</sup> century. To do so, it first investigates the block and plots sizes and configurations. Second, it discusses the spatial separation of different groups in the city from a spatio-temporal perspective. The study focuses on Glasgow city centre and Gorbals between 1860 and 2021. The spatio-temporal analysis of two sites aims to reveal the different characteristic areas in the grid in terms of the block, plot, syntactic values of the streets and land-use diversity.

# REWRITING URBAN FORM. GANZHOU NANSHEJIE CASE STUDY

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## Abstract

*Continuing to write* on the *substrata* of urban origins while revealing their latent historical structures and cultural narratives through design interpretative writing is a decisive issue of urban form.

In Chinese historic sites, generally considered as the *locus* of a despatialised textual memory lacking physical substance, latency, disappearance, and overestimated intangible values too often open the path to unjustified demolitions, substitution, and re-historicisation through simulacra.

Yet, if we understand the site not only as what is today perceivable by the eyes but rather as a historically and culturally defined *context*, Chinese historic places can be read as “already written” texts and the design project as a new “active writing” linked by relations of meaning.

Reading urban form is essential for establishing a cultural relationship with the site’s history, memory and future writings. Including its visible, lost and underground traces, the site forms a composite, interrupted or incomplete text that requires interpretation of its multiple traces, memories, and signs, including future ones.

Nanshejie site in Ganzhou Historic City is a paradigmatic miscellaneous urban text that has become unreadable. Through the reading of morphologies and types joint to the hermeneutic work of decoding traces and absences, the research revealed the absent urban form in its structuring components and “latent structure” (Pezzetti 2019) that still informs the site’s readability and potential rewritability. Under the erasures and chaotic development, a twofold “latent structure” has shaped the block according to distinct principles and roles: those of the courtyard-type tissue and those of the *primary elements* of the temples’ enclosures. Besides, a unique underground drain system (Fushougou) provides the key to understand historic block planning in Song Dynasty.

The interaction between these three essential components should be the starting point for integrating preservation, regeneration, and redevelopment into a co-evolutionary urban form rewriting.

# **REGENERATIVE LEARNING ARCHITECTURE. THE SCHOOL CAMPUS OF VIMERCATE AS A UNIT OF URBAN MORPHOLOGY**

**Prof. Laura Pezzetti**

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**Dr Helen Khanamiryan**

*Politecnico di Milano*

## **Abstract**

In the last decade, the need of innovation in school buildings has emerged worldwide. Yet, while they should be seen as the pivot of districts' fabric and community life, little theoretical efforts and no guidelines have been devoted to learning architecture and its urban role. Innovation focusses merely on modular furniture and flexible settings in relation to new teaching forms and digital technologies. In particular, Italian school buildings present an endemic lack of architectural renewal and integration in urban regeneration concepts. Moreover, the pandemic physical distancing and the issue of "15' city" have highlighted districts' morphological continuity and outdoor spaces as primary components of urban quality and sustainability.

The paper presents a research by design that no longer investigates school buildings as a specialized type but rather as a qualifying "urban architecture" unit. Rooted in the tradition of Italian urban studies, fostering resilience and the objectives of the Healthy City, it postulates the concept of "regenerative learning architecture" as the basic unit of urban regenerative processes at district scale, pivotal for local communities. This transitional typology is studied as the place where troublesome issues, straddling urban context, public space, education and health, can be solved.

The case study is Vimercate's High Schools Complex, which constitutes a morphological region as large as the town's medieval centre and a potential cultural pole, strategically located at the intersection between the historical urban circuit and the potential landscape circuit. Its redevelopment is a "rewriting" operation in relation to the pre-existing orders, stressing the resilience of built morphologies as a primary component of sustainability. Under the conceptual instrumentation of "regenerative architecture", the research defines themes and tools to reshape learning spaces in relation to urban form and landscape, establishing porosity degrees, functional promiscuity, new learning space-places and design concepts for the public administration.

## **A PIAZZA FOR PEDAVENA IN THE BELLUNO DOLOMITES. TOWARDS RECOGNITION OF AN URBAN IDENTITY**

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**Dr Alessandro Dalla Caneva**

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### **Abstract**

The town of Pedavena is situated in the Province of Belluno not far from Venice and its redevelopment of the urban space of the piazza has been a particular subject of reflection by the local authority. The town of Pedavena was studied by a research group from the Department of Civil, Environmental, and Architectural Engineering at the University of Padua.

Today the urban form of this small provincial Commune is the result of the fragmentary growth of the residential urban fabric that is arranged around a more or less compact central nucleus. The town hall and the church are monumental presences that represent unique significant facts about the urban culture of this small town.

The meeting space of the community is presented as a place unresolved in its form, lacking precise and definable limits, and crossed by the main transit routes. The streets assume the centrality and significance that has to be given to a piazza as a place to be, stay, and live. The built-up residential street, as occurred in the historic city, has not contributed to the construction of the public spaces in the city. Residence and streets are two separate realities. The streets has become more important than the qualitative evaluation of the urban space and the residential building development doesn't participate in the construction of the square.

The planning experience of the research group is a valid example of designing liveable civil place by interpreting the city as a unitary fact where the piazza is a place with a clear and distinct form according to an idea of the city made of interconnected spaces, each one formally different but related in rich meaningful spatial sequences possessing the civil character of the urbs.

# HYBRID URBAN BLOCK: HOUSING REVITALISATION IN BRUSSELS AND AMSTERDAM

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## **Abstract**

The urban block, in its relation to the typo-morphological features, has oriented the study of transformations that have occurred in the built environment and in social practices. Today's urban densification, demographic growth, increasing housing demand, economic crisis, and social changes have to negotiate with the transition towards the 21st-century city. Through a process of hybridization, urban blocks are presently asked to integrate companies, setting out working and residential spaces according to innovative arrangements. Mixed-use buildings are designed to foster variety within the urban fabric and accommodate new ways of life and social mix. The hypothesis of this paper is that such specific process of hybridization can be traced back to the most common residential spaces. The concept of 'referential housing type', defined as the archetypal and most ordinary residential type in a specific place throughout urban history, is the most suitable tool to disclose the identity of the city. Firstly, it aids the identification of spatial changes to dwellings in a place. Secondly, it can accommodate a series of socio-cultural codes. Thirdly, it makes the interpretation of new housing forms possible. With the 'referential housing type' serving as a foundation, this investigation focuses specifically on the urban areas of Brussels and Amsterdam. These cities' urban blocks have been at the core of key typo-morphological studies and, due to their ability to explicitly convey elements of the transition towards the 21<sup>st</sup> century, present a remarkable opportunity for further exploration. From a methodological point of view, new CAD documents based on raw material will be produced to support the project's hypothesis. A comparative analysis and between the standardised housing types of selected case studies from Brussels and Amsterdam will shed light on the spatial characteristics of the urban block.

# MORPHOGENESIS OF URBAN PERIPHERIES IN THE 20TH CENTURY: EXAMPLES FROM THE FRENCH RIVIERA

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## **Abstract**

In this paper, we present the first urbanization and the subsequent transformations of the urban fabric in peripheral areas around the cities of the French Riviera, with a focus on the 20th century. More specifically, six urban sectors are analyzed in the cities of Nice and Cagnes-sur-Mer. Cadastral maps, aerial images and urban plans over a century and a half constitute the main inputs of the analysis. These two coastal cities represent two paradigmatic contexts for the French Riviera. In Nice, the first urbanization was channeled by different plans of the morphological infrastructure (namely the street network) even if with different spatial logics in the 19th and in the 20th centuries. In Cagnes-sur-Mer, planning interventions were much more fragmented and sometimes completely absent. The analysis uses concepts borrowed from the main traditions of urban morphology: plan units and transformative processes (Conzen), the role of the matrix, settlement and connecting routes (Caniggia and Maffei), the transformations of the plot system (Panerai et al.). These concepts are confronted with the specificities of the case studies and of the spatial logics of 20th century urbanization. Our main results show how the second after-war period constitutes a paradigm shift in the urbanization process. Main arteries are still developed after the 1950s but tend to lose the role of matrix routes as they no longer structure plots and buildings. Settlement routes develop in tree-like patterns and no longer accept connections among them.

Finally, a general scheme of the different phases of the morphogenetic process is proposed to summarize the main finding of our investigations. This scheme is a first attempt to generalize our findings, leaving room for unobserved transformation patterns. Analyses of different case studies of French and European peripheral urban growth during the 20th century are needed to confirm or improve the proposed scheme.

# ON STREETS. STREETS AS ELEMENTS OF THE URBAN FABRIC

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## Abstract

Scientists and practitioners alike use the term *public space* when referring to squares, plazas, markets or parks; less often it is used in connection with streets, although streets and roads occupy the biggest share of un-built urban space. It is not only the sheer amount that makes streets the most important sphere for an urban society, but streets also represent a continuous and all-accessible spatial construct, a network that spans the entire city.

More than 60 years after Jane Jacobs, William H. Whyte, Jan Gehl and Stanford Anderson started the discussion of streets as essential public spaces - responsible for internal (social)connectivity, for urban vitality and potentially suitable for emotion-led place making - their theories and visions seem to be common knowledge, but are still not fully implemented in our cities. Although there has been a significant shift in planning, away from car-orientation to concepts that include walking, cycling and public transport, streets are still generally treated as spaces that, above all other uses are intended to serve transportation.

From an architectural perspective, streets are still *no man's land*: the responsibility of various city departments ends or begins at the perimeter, so that an overarching approach to street space is theoretically intended and demanded but practically impossible to implement. But the *Stadtparterre*-approach, developed and proven in previous studies, allows to understand and read streets as inherent part of the city's overall fabric.

Our paper provides a comprehensive review of literature that focuses on streets as public space, by targeting to identify existing and potential qualities of street spaces far from the usual inner-disciplinary connotations. It explores under-represented topics in the discourse, that ultimately lead to a better understanding of one of the most fundamental determinants of a city's quality of life: the *real* spatial and functional quality of its streets.

# **POLITICAL, LEGAL AND ADMINISTRATIVE CONDITIONS FOR URBAN ECOLOGICAL TISSUE RENEWAL: AN INVESTIGATION OF A NATIONAL WETLAND PARK IN CHINA**

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## **Abstract**

This paper explores the structural limits of state-led eco-tourism and calls for balancing ecological transformation and socioeconomic sustainability in China's recent rhetoric of ecological civilization. Through the conceptual lens of political ecology, the paper examines the issues of environmental justice and ecological advancement confronting local communities and the indigenous population in the Xixi National Wetland Park development in Hangzhou. Based on policy and plan audits and interviews, the study reveals how territorial governance and market integration have impacted conservation approaches, property ownership changes, employment, displacement, and resettlement in a capital-driven and politically centered eco-tourism development. It advocates a balanced and integrated approach to natural resource conservation through multi-scalar and inclusive ecological governance at the local level.



# FROM THE GROUND UP. PROJECTING THE REGENERATION OF PUBLIC HOUSING ESTATES

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## **Abstract**

In order to investigate the role of architectural and urban practices in revitalization processes, the present research starts from the large peripheral residential complexes built during the years of the economic and demographic boom as a valuable testing ground to experiment with the transformation of the ordinary city.

A prerogative of post-World War II mass housing developments was the definition of a large, open, single-owner (often public) lot bordered by roadways rather than built volumes. If in the original modernist conception this over-allocation of urbanized open space would have generated green, healthy, and qualitative areas of socialization, these places have often become the symbol of degradation and stigmatization as a result of improper uses and deficiencies in the realization, maintenance, and management. How can urban design address these complex, multi-problem spaces, traces of a model of urban development that has proven to be unsustainable, to make them a potential for neighborhood redevelopment and reactivation? In order to answer this question, the research reviews a long history of area-based urban regeneration policies and practices, investigating the design and process strategies deployed in different contexts as a resource to address a problem that is still very relevant today. In particular, the regeneration initiatives developed over the past four decades in three large public neighborhoods representative of different institutional, professional, and local contexts provide the basis for comparison by illustrating emblematic examples of alternative approaches to the revitalization of open spaces.

Analyzing the impacts of the projects in the short and long term, the present work aims to show how the revitalization of these spaces can, depending on the tools and objectives implemented by multidimensional interventions, support virtuous processes of economic and social enhancement of the existent or, conversely, trigger an irreversible transformation of the ownership and morphological structure of the neighborhoods.

# **READING AND UNDERSTANDING BUILT ENVIRONMENTS IN QUEBEC (CANADA): URBAN MORPHOLOGY AT THE SERVICE OF A SUSTAINABLE URBAN DESIGN APPROACH**

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## **Abstract**

The submission is intended to present the research at the base of the publication of a book for a readership in the fields of architecture, landscape architecture, urban planning, urban geography, and urban design, who wants to know more about the physical and spatial form of villages, towns, and agglomerations in Quebec.

The first objective is to elucidates key notions in the field of urban morphology. The second consists of applying these notions to understand the typical built environments of Quebec and their various processes of formation and transformation. The third objective is to study how morphological knowledge has been gradually integrated into an original urban design practice.

The research develops a structural approach to allow the reader to access a deep understanding of the material and spatial cultural heritage built over the long term in the province of Quebec. Ten case studies are used to show the application of morphological analysis tools, to produce original knowledge about the built environments typical of the Quebec territory. Finally, a sample of twelve contemporary operations illustrate how morphological knowledge has been interpreted to ensure the structuring of built environments at various scales.

The book regroups a body of research carried out over more than 30 years that presents the first divisions of the territory, the birth of villages, the formation of towns and their outskirts, up to the emergence of the first suburbs. The research leads to a better understanding of the product of the collective material and spatial cultural identity of the French speaking population of Quebec.

The theoretical concepts, methods and examples presented in the book aim to provide the reader with useful lessons to nourish their work of planning, design and management of the quality and integrity of the built environment of Quebec.

# FROM COLLABORATIVE ENGINEERING TO BUILDING INFORMATION MODELING BIM

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## Abstract

**Background** For several years, France has been committed to the digital transition. With the support of the digital transition plan for the building (PTNB) industry construction agencies and actors are starting to implement the Building Information Model (BIM), a collaborative method that brings together all construction actors around the same model throughout the life cycle of a project.

Some agencies have already started to implement BIM, while others are struggling. After the literature review, we identified the main implementation problem: communication and collaboration between participants.

**Aim and objectives of the study** The aim of this study is to address the problem of cooperation and communication between actors from a practical point of view, and to determine the role of the actors, the accesses to the digital mock-up, the time and the method of each intervention.

**Method** Our working method is organized in 4 steps:

- Delimitation of the construction project phases (proposed according to the need of this article).
- Definition of the tasks to be performed in each phase and sub-phase with and without BIM.
- Identification of stakeholders and roles at each sub-level with and without BIM.
- Create an organizational model for each stage of the architectural design using a collaborative engineering approach.

**Findings** At the end of this article we have succeeded in defining the design phase of the architectural project with the objective and tasks of each sub-phase, the actors that will intervene and their roles. As well as we have organized the information in the form of organizational models of the work of the actors in each sub-phase.

**Conclusions and Implications** This article has allowed us to organize the work of the actors with BIM and will serve as a model for agencies that encounter the problem of collaboration so that they adopt this new technology.

# THE PLACES OF CRISIS AS A GNOSEOLOGICAL FIELD OF NEW INTERPRETATIVE PROCESSES

**Prof. Antonio Riondino**

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## Abstract

**Background** The research field is the plastic-masonry territory of Mediterranean, focused on the city of Taranto: a city of ancient Magna Graecia, characterized by an extraordinary historical-archaeological-landscape palimpsest, for decades subject to regressive transformations, due to vast industrial plants and scattered settlements, detached from the organic relationship with the historic city, with its sea, with the countryside.

**Aim** The aim is to experiment methods to resolve the pathologies of the contemporary city with regard to the palimpsest inherited from urban history, focusing above all on public spaces.

**Method** The method is based on the historical-processual reading, aimed at understanding the formative phases of the city and at identifying and cataloging the phenomena composing and characterizing the aggregative space. This method, through cartographic investigation, analysis of orographic characters, and urban morphological-type reconstruction, allow to reflect on regressive phenomena, making the project the outcome of the critical relationship between original codes, organic evolutions, critical transformations and their possible re-meanings.

The project site is to the north of "Mar Piccolo", a sea basin facing the historic city. It is a complex area, with a strong landscape value, subject to regressive phenomena due the presence of ILVA (the largest steel plant in Europe) and bounded by the shipyards and the "Tamburi" district, detached from the direct relationship and organic with the historical city.

## Findings Conclusions and Implications

These issues allow to reflect critically not only on the specific theme, but also on the meaning and methods of the contemporary project. Rethinking these places in fact means making a critical and multidisciplinary comparison between consolidated urban codes and the current needs. A comparison that becomes the gnoseological field through which to plan the renewal actions according to a critical continuity capable, at the same time, of revealing new meanings of urban grammar.

# JERUSALEM BEYOND THE WALLS

**Dr Giuseppe Rociola**

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## Abstract

**Background** In Jerusalem there's a critical coexistence of two parts: Old City, a historical-symbolic palimpsest always affected by traumatic transformations, and the new neighborhoods outside the walls. Old City from the 20th Century lives the dual condition of being a city-museum and a place of ethnic-religious conflict at the same time, while the new districts isolate the walled city with a fragmented ring in which planned Israelis neighborhoods and those spontaneous Palestinians are opposed, wedged between sacred areas. Today this condition defines a historical heritage in which places full of memories are confronted with a contradictory and mostly degraded urban context.

**Aim** The aim is to analyze the urban transformations, especially related to the peripheral ring separating the Old City from the "new city". On this basis a redevelopment hypothesis will be proposed, connecting Preservation with the need to research a formal identity to the urban space that separates/unites the two parts.

**Method** The type-morphological analysis of the "formative phases" will be carried out, through maps and documents, allowing to read the urban structure and the changing in spatial characteristics over time, to understand the present urban decay and find new potentiality.

**Findings** The critical analysis of the urban phenomena, through drawings, allows to identify the morphological and spatial characteristics of the study area, contributing to the debate on preservation of urban cultural heritage, expanding knowledge on the topic, both general and related to the case study.

**Conclusions and Implications** The dissertation involves the relationship between "contemporary" and "ancient", understood as "active" conservation of urban cultural heritage, i.e. protection inside a dynamic of mutations. Moreover, the research will contribute to deepen the interpretation of urban phenomena in contexts in which a symbolic stratified tissue is confronted with incoherent and traumatic urban process, typical of areas of conflict.

# THE CAUSES AND CONSEQUENCES OF SCHOOL CLOSURES IN INNER-CITY CALGARY

**Dr Beverly Sandalack**

*University of Calgary*

## Abstract

**Background** During the early decades of the 2000s, eleven schools closed in Calgary's established neighbourhoods, due to declining enrolment or outdated infrastructure. The loss of a school is often devastating to a community, and can lead to further population decline.

**Objectives** What are the causes and consequences of school closures? What recommendations, particularly related to urban form, might address the issues?

**Methods** Analysis of the 500 sq km study area included historic evolution of urban form, schools mapping and data analysis, development of a typology of school buildings and grounds, mapping of school inter-relationships and closures, review of school board practices and policies and precedent studies. A case study of the catchment area of one high school included historic evolution of urban form factors, mapping of the network of feeder schools, analysis of neighbourhood and schools socio-demographics and a review of school program changes.

**Findings** The causes of school closures relate to a combination of city development processes, neighbourhood lifecycles, neighbourhood types, infill and densification processes, housing types, school sizes and building types, socio-demographic factors influencing school choice and school board policies.

**Conclusions and Implications** The system of schools in the established area of Calgary was over-built during the post-war period and no longer corresponds to neighbourhood density and demographics; it should be right-sized, so that the distribution of schools responds to a longer-term projections. The current practice of maintaining separate public and Catholic schools, some adjacent to each other with duplicate facilities and grounds, should be reconsidered. Alternative uses for schools should be explored, and the current practice of open boundaries for school enrolment should be replaced by neighbourhood-based schools. Some sites should be redesigned for more optimum use and ecological performance. These recommendations include city, neighbourhood and school-specific scales that may be applicable to other similar cities.

# LANDSCAPE APPROACHES TO CLIMATE CHANGE, ECONOMICS AND PANDEMICS – RETHINKING CALGARY PARKS AND OPEN SPACES AND SYSTEMS

**Dr Beverly Sandalack**

*University of Calgary*

## **Abstract**

**Background** Calgary City Council recently voted to declare a climate emergency. Calgary's Climate Resilience Strategy focuses on reducing greenhouse gas emissions and taking actions to mitigate the impact of extreme weather events. It is quiet on the subject of parks and open space systems and the potential of landscape to help in addressing climate change. A landscape architecture studio took on this topic.

## **Objectives**

- critically analyse the park and open spaces and systems that have been produced over the course of the city's evolution
- identify issues related to climate change, landscape ecology and the public realm
- propose park typologies, park systems and urban forest practices to address these issues

**Methods** The study area is one quadrant of the city that was developed in the 1950s-1980s. The methods included mapping and analysis:

- historic evolution using maps, air photos and other archival documents
- natural environment and vegetation including the urban forest
- urban structure - land uses and patterns of activity
- socio-demographics and how the population used/uses parks, open spaces and the public realm

**Findings** The studio concluded with six individual projects that addressed the identified issues and proposed innovations.

**Conclusions and Implications** Parks and open spaces are planned and designed to respond to needs, issues and demographics of their time, but are often not the "right" spaces or systems to address new needs and populations. New spatial organizations and morphologies and ways of planning and designing landscape systems can help address issues of climate change and develop a better public realm that is responsive to new populations and can also help to re-frame the city image.

# THE CONCEPT OF THE URBAN PALIMPSEST. THE URBAN FABRIC TRANSFORMATIONS IN INHERITED CITY IMAGE

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## **Abstract**

Urban transformations in contemporary cities caused critical issues, especially in the morphological and visual character of the inherited city image. These efforts have brought more complex understanding – due to the continuous change, elements of the built environment become increasingly diverse – on the spatial-temporal coverage of the urban fabric. Transformations and spatial patterns of physical forms are the basis of urban morphological studies to understand and interpret the process-based – multi-layered – transitions, transformations, spatial patterns of physical components. The concept of palimpsest explains the continuous construction over time, but the scale of urban palimpsest is more than that. The subject of the urban fabric is not only to define the interaction between the components from the lowest level of specificity to the highest level, but it is the actual presence of one type within another. Any relationship could be uniting, significant changes could be outlined between different periods via urban palimpsest. The research points out the pragmatic nature of the urban fabric and aims to examine the relationship between the fundamental types of transformations and their distinctive forces. If such relationship is not expressed coherently, the transformation in urban development or urban renewal may intent refusal to emphasize the obvious of the different periods, moreover, may refuse pre-established urban fabric types. Thus, in the current study, the structure of historical layering analysis includes elaborating the proposed palimpsest concept via comparison/overlapping of historic maps processing of urban fabric types. The layers of inherited city image can experience through the combination of different urban morphological approaches. Via the combination of historico-geographical, typo-morphological, and configurational approaches of urban morphology, the layering analysis will be established. The purpose of the current paper is to demonstrate the urban palimpsest concept and make a proof of concept in the urban conservation sites of Istanbul.



# TRANSFORMATION PROCESSES IN INFORMAL PRODUCED PUBLIC SPACES

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## **Abstract**

People develop their built environments through their own ideas, initiatives and economic possibilities. Additionally, this endeavour follows local self-help and self-management processes, which are crucial in the physical and social dynamics of cities, especially in Latin America. These results of urbanisation and construction may appear random and chaotic, but there is often an underlying logic to the emergence and growth of forms of informality. Moreover, a temporal dimension, incrementalism and change are integral components of this system. As part of a wider study on spatial types of the occupations made by people in the public space, the objective of this work is to examine the processes of transformation within these spaces. Drawing on empirical evidence from Piura (Peru), this study addresses a range of possible forms of the informal production of space. The methods used are satellite imagery, direct observations, photographic studies and urban cartography. As a result, the work reveals that a space is never complete but is in constant flux, which often involves three primary types of change. Therefore, this study's findings produce a better explanation of these processes, which challenge the prevailing model of urban development, planning and place creation.

## **SYSTEMATIC SPATIAL SAMPLING IN URBAN MORPHOLOGY**

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### **Abstract**

Spatial sampling techniques are seldom discussed in the literature on urban morphology. Yet, as it is the case with any discipline whose variables of interest are geographically and spatially distributed, such techniques have there a natural field of application and can improve the rigor of research findings. Among those techniques, systematic spatial sampling stands out as particularly relevant to the identification of urban patterns, particularly in settings where these are not familiar to the researcher. This paper introduces, explores, and demonstrates the potential of the concept of systematic spatial sampling in urban morphological research. To sample urban forms in a nonbiased, scalable, and reproducible way, we use a regular hexagonal grid (the most compact polygon capable of creating regular tilings of the plane). The methodological procedures to develop and test the hexagonal grid were divided into three main steps: firstly, the definition of the size of hexagons; secondly, the random selection of the hexagonal sampling units; and lastly, the numerical characterization and classification of the urban tissue types entrapped by the hexagonal grid. Each of these major steps covers a sequence of well-defined instructions that can be replicated in different urban contexts. It is argued that its widespread application, coupled with GIS and numerical classification techniques, could leverage a new, empirically grounded understanding of the fundamental morphological variability of cities around the world.

# **COMPARATIVE ANALYSIS OF VERTICAL GREEN FAÇADES WITH MOVABLE PANELS FROM THE PERSPECTIVE OF THEIR THERMAL PERFORMANCE AND APPLICABILITY IN SUSTAINABLE URBAN AREAS**

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## **Abstract**

The positive effects of urban green spaces on both the health of city residents and urban ecosystems cannot be denied. Green urban spaces help prevent environmental problems such as air pollution, urban heat island effect, and are necessary for citizens to socialize, appreciate nature and foster a healthier society. However, with the urban tissue densification, decrease is observed in the amount of green urban areas. During the revitalization process, in order to create inclusive and sustainable cities, it is important to design alternative green public spaces. We argue that vertical green façade systems can be used as one of the most effective options for active interaction between the residents and nature. The perspective for the vertical green spaces as an important part of the holistic approach to the decarbonization and urban green transition is discussed in the light of the New European Bauhaus.

The purpose of this study is to present a comparative review of vertical green façades with the perspective of thermal performance. The authors highlight the energy saving potential of vertical green systems for different spatial, structural and bioclimatic solutions. Moreover, as a result of this review, the authors explain the parameters that designers should consider achieving the best thermal performance of a vertical green system. The paper also analyses the pros and cons of the application of movable green panels.

# **RETAIN THE COMMON GROUND: AN INTEGRATED SPATIAL STRATEGY TO RECOVER INNER FRINGE BELTS AS THE URBAN GREEN INFRASTRUCTURE FOR LANDSCAPE REVITALISATION**

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## **Abstract**

Among the concepts of Cozenian urban morphology, the fringe belt (FB)-both as a concept to view urban dynamics and the evolving spatial structure of towns and cities-proves a valuable topic for both morphological study and landscape design and planning. From the perspective of FBs as physical entities, some aspects, especially relating to the inner fringe belt (IFB), are still under-investigated.

First, the significance of the spatial integration of IFBs as the urban green infrastructure (UGI) receives little attention, when studies generally take them as a simple assemblage of certain historical grains. The systemic features and functions of the IFB as an entity-constitutes the UGI backbone since the early stages of urban construction and, where surviving, provides multiple ecological and social services for the urban whole-cannot be appreciated if it is only conceived from the piece to the whole. Second, the relation still needs to be consolidated between the chronological description of IFBs' development and landscape design and planning: most studies concentrate on formation and modification processes of IFBs themselves but rather underestimate the environmental and socio-spatial impact of these processes on their adjacent areas and even the entire city, considering IFBs' structural significance, and thus implications derived from that for landscape management.

A UNESCO city Quanzhou will be an exemplifying case to explore these two aspects. Information from the historical maps, local documents, and field survey is merged into a GIS platform to support the mapping and analysis of the Quanzhou IFB's development. The research presents the interconnections of the uncoordinated IFB modifications-the piecemeal privatization of IFB green spaces, UGI disintegration, and social and environmental problems in Quanzhou inner city today; and indicates that an integrated spatial strategy to retain the connectivity, accessibility, and multifunctionality of the Quanzhou IFB as the UGI contributes to the inner city's ecological redevelopment.

# **MULTI-SCALAR POST-EVALUATION OF URBAN RIVERFRONT REQUALIFICATIONS. THE PLAN FOR THE URBAN BANKS OF THE EBRO RIVER IN ZARAGOZA (SPAIN)**

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## **Abstract**

In the last three decades, the objectives of many urban rehabilitations in sections of European rivers have not only been to solve abandoned spaces, but from landscape urbanism, they have been designed as a city regeneration opportunity that, considering the river, acquires a territorial scale and transcends beyond its limits.

This study presents a quantitative and qualitative post-assessment methodology for the sustainability of these urban riverfront rehabilitation interventions and their effects over time as part of a complex process. The objectives are to measure the degree of achievement of the goals proposed by the initial planning at different scales. To this end, a system of indicators integrated into a grid of index is formulated. This facilitates the analysis of their evolution and the degree of the initial goals accomplished.

The performance dimensions proposed by Kevin Lynch of good city form updated from eco-urbanism are adopted as global indices. Data dump and analysis is done by GIS.

The sample studied is the requalification of the urban, natural and territorial character of the urban and peri-urban banks of the Ebro River in the city of Zaragoza (Spain) carried out in the years prior to the celebration of the 2008 International Exhibition, and its evolution after more than 10 years.

This paper presents the progress of a research and shows the differences in: the scope of the objectives of the initial planning, the assimilation of the intervention and the associated effects, according to the different scales of the urban morphology and the territory with which they are studied.

The paradigm shift from conserving and protecting to projecting with the river implies a necessary planning of multi-scalar objectives in the requalification interventions of urban riverbanks to achieve global sustainable results.

# **DESCRIBING, EXPLAINING, AND PLANNING INFORMAL SETTLEMENTS: AN EXPLORATORY CASE IN SALVADOR, BRAZIL**

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## **Abstract**

Most of the dominant morphological approaches have been created in the Global North. Addressing the Global South, in particular informal settlements, which are the most adequate theories, concepts, and methods? And which are those that are not sufficiently robust to be used in different geographical contexts? This research addresses these fundamental questions. It focuses on the process of development of Salvador, making evident the most relevant urban form elements to be analyzed in contexts of unplanned development.

The form of streets, street-blocks and plots in Salvador is systematically analyzed over time. Two different areas of the city are compared, characterizing the differences in their urbanization processes. The municipal urban plans of Salvador are analyzed to reveal its impact in the resultant urban form. Unplanned settlements are identified and categorized into types, due to the location in which they emerged and to their development model. Formal settlements are identified, based on the available sources of plot subdivision plans.

The analysis points out two important implications for planning. The progressive expansion of informal areas enables certain aspects of urbanity – despite the lack of quality of construction – preserving the structure of small plots and the fabric made of low rise mixed used buildings. Contemporary formal parts of the city recreate modernist patterns, with large plots and monofunctional buildings. The analysis of the municipal plan shows a functional division that privileges uses and titling rights over urban form for zoning the city and defining urban parameters.

And yet, morphological similarities might be observed across formal and informal areas. Through the identification of the relationships established between streets, plots and buildings, the research provides evidence-based inputs for planning. It indicates a path through which the city might improve its zoning standards: grouping areas according to their morphological characteristics despite their legal status.

# RE-BUILDING UNTOLD HISTORIES TO PRESERVE HISTORICAL FRAGMENTS ALONG THE STREET RUA DO BENFORMOSO IN LISBON

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## **Abstract**

Unbalanced tourist flows combined with aggressive lending and real estate markets can threaten the preservation of the built heritage and its sensitive and adaptive reuse. The sustainable management of endangered or underrepresented buildings is even more critical in overcrowded historic centres. Non-intrusive advanced technologies, such as mixed reality tools integrated with GIS database, on the other hand, can be successfully used to enrich off- and on-site experience of a broader community. These tools, ultimately, can draw attention to the importance of preserving the cultural values embodied in the today's cities.

This research focuses on half-timbered houses along the street Rua do Benfornoso in a traditional parish of Lisbon that remained unscathed after the 1755 earthquake. We emphasize the importance of interpreting the changes that reflect distinct morphological periods of the city, using map-based analysis and archival photos. In revealing permanence, dissonance, and change of the urban form, this study also retraces hallmarks lost during the post-earthquake reconstruction until today.

The history of earthquakes has often been a history of lessons ignored – building blocks fragmented, extra floors added, interiors demolished, symmetry broken. With a view towards more restrictive legislative provisions, it is important to highlight the multiple weaknesses inflicted on the analysed heritage and its spatial configuration by neglect or by inappropriate measures taken on it.

This multi-layered information is shared for preserving the memories of the place among people living on this street and those who pass through it. We show that keeping alive irreplaceable physical legacies – or historical fragments – can contribute to sustainable cultural heritage management of a popular tourist city like Lisbon.

This graspable memory may represent a vehicle for a closer relationship to the past and for connecting urban morphology to heritage conservation practice.

# **WHAT CAN URBAN MORPHOLOGISTS LEARN FROM SPACE COLONIZATION AND VICE VERSA? – MORPHOLOGICAL STRUCTURE IN ZERO GRAVITY AND SPACE COLONY MORPHOGENESIS**

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## **Abstract**

Thinking about space colonization inspires creative reflections on human perception and urban morphology in three dimensions. Morphological analysis is defined by a hierarchy of three fundamental elements: streets and their layout, plots and their aggregation in blocks, buildings and land uses as building utilization. The human perception in zero gravity not only puts human vision (its foveal plane) as referential plane for a 3D, but it also breaks the hierarchical morphological structure of cities and inspires alternative urbanization. This paper morphologically dissects the elements of space colonization to discuss urban morphogenesis of space colonization and representations of perceptual (urban) morphology. Perceptual (urban) morphology prioritizes human vision, front views and aural soundscapes. Photographs, urban sketches, building façades or street profiles describe building and street types with front views and Kevin Lunch's mental maps show edges as barriers. Geographical Information Systems (GIS) are geocentric and take a top view on the Earth surfaces. Spatial analysis in GIS works for morphological analyses of buildings and plots as polygons, but GIS cannot represent morphological structure with interactions between streets and buildings or perceptual representations of typologies. The paper also compares the morphological structure of cities on Earth and the conflict between private and public with visions of space colonization. Space is explored by public administrations with spacecrafts that are semiprivate space and despite private initiatives to explore space, there are no visions of spacecrafts and space colonies that apply the morphological structure and interactions between public spaces (e.g., street) to private buildings. Space can be colonized with privately owned spacecraft (private spaces as habitats modules) docking to a publicly accessible spacecraft that could be form elements (of space colony or station morphogenesis) or flow elements (rockets that transport). Urban morphologists can be inspired and learn from space colonization and vice versa.



# **SWEDISH AND DANISH TYPO-MORPHOLOGY – THE HISTORICAL APPROACHES AND NEW CONCEPTUALIZATIONS FOR INFORMING URBAN DESIGN**

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## **Abstract**

Typo-morphology is a branch of urban morphology that understands physical form, formation and transformation in cities with use of types and typologies. Neighborhood typologies can be used to inform planning policy or create urban design guidelines in solving problems as sustainable mobility, safety and crime. This paper looks at historical approaches and new conceptualizations in Sweden and Denmark to discuss implication for urban design practices. There is a long typo-morphological tradition in Sweden, however in Denmark it is seldom used as a method of analysis. This paper starts with describing three historical Swedish typo-morphological approaches. The first is historico architectural emphasizes architectural styles and typical buildings in different historical periods . The second focuses on classifying neighborhood types and their physical attributes. The third complements the second and argues that the Swedish neighborhood typology describes not only physical spaces, but also social structure. Based on these approaches a new typo-morphological model of a Swedish city was proposed and applied in redesigning Swedish cities to integrate new public transportation. This model of a typical Swedish city is juxtaposed with new neighborhood typologies from Denmark. The Danish application of neighborhood types is more generic and considers three major morphological periods and focuses on the hybrid neighborhood types, as most neighborhoods are hybrids of types. This paper discusses the differences between detailed well established Swedish neighborhood typology versus generic more flexible and concludes with implication for urban design practices, particularly in designing Transit-Oriented Developments (TODs) around public transportation. Practicing architects and urban designers can apply morphological research and both detailed or generic local neighborhood typologies can be very useful conceptualizations.

## **EXAMINE SUSAS2021'S PERSISTENT IMPACT ON URBAN REGENERATION IN THE CONTEXT OF MULTI-PERSPECTIVE PERCEPTION**

**Ms. Wen Su**

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**Prof. Xiangning Li**

*Tongji University*

### **Abstract**

The biannual Shanghai Urban Space Art Season (abbr. SUSAS) has had four seasons since 2015, hosted by governmental organizations and academic institutions, featuring exhibitions and thematic events under the theme "Culture Enriches City, Art Enlightens City."

The purpose of this study is to discuss how spatial art event such as SUSAS intervenes in the urban regeneration. Three months after the SUSAS 2021, we picked three exemplar communities to discuss how SUSAS 2021 reacted to the theme: "15-minute community life circle: people's city". We concentrated on the following two issues: To begin with, we'll examine how the exemplar communities have responded to the theme this year, how the activities have contributed to the renewal and transformation of the exemplar communities, and how the activities have been designed to satisfy specific demands. Second, we looked at how the legacy of the event (pavilions, commercial facilities, experience centres, public art installation) is utilized and operated in the subsequent period to evaluate whether and how these legacies continue to function and respond to the themes.

The research will conduct a multi-perspective survey with multiple participants (curators, urban scholars, exemplar community organizer, visitors, local residents, etc.) in the form of interviews and questionnaires to complete a comprehensive review of the aftereffect of SUSAS 2021. As a policy promoter, this event expected to build up communication between the government and locals. It generates visual culture landscape for the urban regeneration process. SUSAS provides policy makers an alternative mode to intervene with the micro-scale urban fabrics from a cultural, artistic perspective.

# **“REDEVELOPMENT” FROM LOW-RISE COLLECTIVE HOUSING TO FREE MARKET-DRIVEN TOWERS: NEIGHBORHOOD-SCALE URBAN MORPHOLOGY IN ULAANBAATAR**

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## **Abstract**

Due to the relatively short urbanization history of Ulaanbaatar, urban redevelopment practices are still rare; rather, most of the developments are taking place in the form of urban sprawl at periphery and infill developments at built-up neighborhoods connected to the central infrastructure system. An evident example among these few redevelopment practices is the redevelopment of Nekhmeliin Shar, a residential neighborhood which was originally built for factory workers in 1956. During the post-socialist transition in the 1990s, the closure of factories and the economic downturn led to the loss of jobs and incomes, and the deterioration of housing estates. Following a slight economic improvement in the 2010s, a housing estate redevelopment project has been launched at the neighborhood. In the past decade, the implementation of the project has led residents, agencies and professionals to reconsider the consequences of redeveloping housing estates and the neighborhood. How do former and newly-arrived residents adapt to the increasing density? How do stakeholders see the transformation? What methods could support the urban morphological research to study the impacts of neighborhood transformation? This paper uses a multidisciplinary approach to answer all these questions; and discusses how the redevelopment process has changed the current housing estates in Ulaanbaatar as an example of the vertical urbanization trend in Asian cities. In addition, it highlights the key considerations in public and professionals' views for the future. Authors used a wide range of data including maps, drawings, photographs, ethnographic interviews, and a remote sensing dataset using satellite imageries collected from Google Earth Pro software for the urban morphological analysis. The key findings reveal that, under the guise of “redevelopment” and ambiguity in planning, implementation, and regulation systems, the free market-driven redevelopment projects reinforce not only density, but also more complexity in spatial organization and everyday life.

# **SUGGESTION OF THE NECESSITY OF URBAN REDEVELOPMENT COMBINING COOPERATIVE PLANNING THEORY AND URBAN FORM CHARACTERISTIC ANALYSIS**

**Dr Hwang Sun Ah**

*Pusan National University*

## **Abstract**

Cities that have been created for thousands of years have different characteristics depending on the culture, environment, and race of each city. It is impossible to control such complex and diverse cities with a single rule or framework. Nor can there be any supreme rules for a good city. Therefore, it can be said that it is most important to clearly understand the characteristics of each city and to make a plan that emphasizes the strengths but complements the weaknesses.

In this study, the unique characteristics of each city were divided into a social approach and a physical approach.

In order to find a social approach, it was based on Pasty Healy's cooperative planning theory. Cooperative planning, ie, governance, has a broader meaning than the practice of conventional regulated land-use planning. According to his cooperative governance theory, it can be said to be about a strategic approach to place governance. He argues that governance systems can make good places, which in turn can improve the quality of cities.

For the analysis of urban morphological characteristics, it was based on the morphological theory of the Conzen school.

The analysis of the patterns of land and building use was centered. His research itself focused almost exclusively on the urban plane, so that, despite the fact that he expressed the city only in two dimensions, it could be said that he represented virtually all the essential features of the urban form.

The ultimate goal of urban redevelopment is to improve the functions of the city, provide a better environment, and improve the quality of life of city residents. Therefore, a more practical and active approach that reflects the characteristics of the city and combines social and physical approaches is needed.

# CHANGES IN THE MORPHOLOGY OF THE OLD TOWN IN WROCLAW IN THE POST-WAR PERIOD

**Prof. Robert Szmytkie**

*University of Wrocław*

## **Abstract**

The main objective of this study was to show the morphological changes of the Old Town of Wrocław (SW Poland) in the post-war period. Morphological changes are naturally occurring process shaping the internal and external structure of the city. In the case of Wrocław, destruction during World War II was the reason for the interruption of the naturally development cycle of the urban plot and completely changed the landscape of the city. The analysis of data on changes in the development within the Old Town in the post-war period, led to the typology of street blocks on this area. Based on mentioned classification, 8 areas characterised by analogous phases of the urban cycle in particular blocks were identified. This made it possible also to identify the processes that influence changes in the morphology. The basis of the study was an analysis of cartographic materials from 1934-2019 showing the distribution of buildings within the street blocks in the Old Town of Wrocław.

# THE APPLICATION OF SPATIAL STATISTICS (GIS) IN ANALYZES OF DIFFERENCES OF URBAN UNITS

**Prof. Robert Szmytkie**

*University of Wrocław*

**Dr Agnieszka Lisowska-Kierepka**

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**Ms. Katarzyna Kuzara, Mr. Michał Małyśz, Mr. Mateusz Długosz**

*University of Wrocław*

## Abstract

Morphology analysis of settlements have been based on classical methods and indicators. They allow to receive measurable results and their subsequent interpretations. Nowadays, technology offers many useful tools, which enrich morphology analysis of settlement units and complement them by creating a kind of comprehensive studies. The dissemination of GIS not only in physico-geographic analyses, but also in urban researches, allows to extend spectrum of available tools and methods describing the spatial characteristics of settlement units. Urban areas, being extremely specific in their internal diversity, can be the interesting subject of geostatistical analysis. Spatial statistics and centrographic measures allow obtaining many results, showing the internal differentiation of urban units, as well as external differences between urban areas of different origins or history. As an application results it also becomes possible forecasting the direction of development of a specific unit, on the basis of what has happened so far. In this research, analysis location of buildings and also attribute of size occupied by individual buildings in Polish urban areas of various origins. For this purpose spatial autocorrelation tools (both with the use of global and local statistics, k-functions, incremental spatial autocorrelation) and centrographic measures were used. For the analysis a vector layer representing the buildings (BDOT10k) was used. The obtained results, according to the authors, constitute an interesting subject of discussion.

# APPLICATION OF BUFFERS TO THE ANALYSIS OF URBAN MORPHOLOGY

**Prof. Robert Szmytkie**

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## Abstract

The classical approach to urban morphology analysis is based on city plan analysis. These methods are called Conzenian methods. Advances in technology and the ability to use spatial analysis using GIS techniques, have made it possible to apply new approaches to the analysis of urban morphology. The purpose of this study is to analyze the urban morphology using the buffering tool. Buffers (or equivariants) have already been used in settlement geography studies. The novelty comes from using the buffering procedure in ArcGIS software. The analyses were performed using the Database of Topographic Objects (BDOT 10k) made available by geoportal.gov. It is a vector database that includes information on spatial location of topographic objects along with their characteristics. The procedure consisted of two stages: stage I - preparation of vector layers and stage II - creation of appropriate buffers for buildings according to the adopted assumptions. Two indicators were used for morphology analysis: net population density and compactness coefficient.

# A STUDY ON THE SPACE COMPOSITION DESIGNED BY STANISŁAW NIEMCZYK IN THE CONTEXT OF EVOLVING RELIGIOUSNESS AND SPIRITUALITY

**Ms. Joanna Tomczak**

*Lodz University of Technology, Institute of Architecture and Town Planning, Lodz, Poland*

## Abstract

**Background** The sociologists of the 1950s believed that the secularization of post-industrial societies is inevitable. However, contemporary sociology of religion developed the concept of individual religiousness which systematically replaces the institutional one. Assuming that religiousness evolves into a private experience, the question arises what should be the function of existing sacred spaces.

**Aim and objectives of the study** The proposed paper explores whether the traditional religious space can meet the needs of individual religiousness. The primary hypothesis assumes that the appropriate sequence of urban interiors, spatial boundaries, and transition points can be conducive to religious feelings. The research concerns architectural projects of Stanisław Niemczyk which combine spatial complexity along with a common impression of the prevailing religious atmosphere.

**Method** The applied graph-based method intentionally ignores the architecture of the temple and concentrates particularly on spatial aspects. At first, individual units of space are distinguished, so that connections between them can be examined. A network of bindings is finally written as a justified plan graph. The entrance to the temple is defined as root, while connections represent routes of transition from the profane to the sacred.

**Findings** The investigation of temples designed by Stanisław Niemczyk proved that even though social demand for religious space may seem to decrease, specific spatial solutions can evoke individual religious experiences. Conclusions extracted from the analyses of Niemczyk's religious structures can become recommendations to improve the quality of sacred space. Eventually, proper design may protect the existing space from losing its religious function.

**Conclusions and implications** The use of geometric simplification of space makes it easier to investigate space complexity, which appears to be overlooked in both architectural and urban analyses. However, this aspect seems to be crucial in terms of space that is related to spirituality.



# QUANTITATIVE ANALYSIS OF URBAN FORM THROUGH URBAN SECTION

**Prof. Ziyu Tong**

*Nanjing University*

## Abstract

Urban form has a profound impact on our lives and the environment. Different urban form usually means different environment and microclimate. A more comprehensive and in-depth understanding of the urban form is seriously needed.

Most research on urban form are from the aerial view. With such perspective, the height information of buildings is implicit. Some 3D spatial metrics, such as height-width-ratio and sky-view-factor, convert spatial features into abstract values and depend on the calculated locations, which can't give a complete and intuitive presentation of urban form. Instead, section is a potential answer to this disadvantage. Urban section visually represents the 3D shape from a transection of the city. It's a new mapping approach for representing urban form. Then, as a linear graph, the section can be quantified with some indicators easily and accurately.

Different from the plan perspective, a single section cannot describe the complete urban form. It needs a series of sections to form a representation of urban form. There are two different ways: parallel series and rotating series. The former implies that all sections are distributed in parallel at a certain spacing. The latter means that all sections are rotated around a center point. Even so, the area covered by the sections, and the spacing of the series of sections are still worth discussing. In this study, a section generation software was developed on the Rhino-Grasshopper platform. Taking different districts of the city, such as old town, new CBD, and suburbs, two series of sections were generated to represent the quantitative analysis of urban form. The results show that the two section series are effective in representing the characteristics of the urban form and have their own particular features. In addition, the rotating series sections method has the unique advantages in expressing the urban form in different directions.

# 'SERIAL VISION' AS A METHOD FOR EXPLORING STREET VITALITY AND URBAN CHANGE

**Dr Ilgi Toprak**

*Independent Researcher*

**Dr Fatma Pelin Ekdi**

*University of Strathclyde, Glasgow, United Kingdom*

## **Abstract**

In this paper, we adapt Cullen's "serial vision" approach on isovists to create a tool that explores street vitality and urban change using morphologic and semantic information in urban spaces. We determine a series of vantage points on a certain path on both Nolli maps and corresponding street view images. The images and/or videos illustrate a personal eye-level experience of a street or path, such as a city walk video. The proposed tool brings together two types of data at every vantage point on a path: built form data – based on some isovist characteristics such as area, compactness, skewness and occlusivity, and semantic data – defining the signs, texts and functions on the images using map data and AI text recognition.

We measure street vitality using the tool comparing synchronic data – with data obtained on multiple timestamps of the same path. Street vitality levels are identified by exploring the possible correlations of semantic data with the physical analysis of space. High densities of texts may infer a concentration of urban activities, such as libraries, offices, shops, and cafes. We investigate urban change by comparing diachronic data – with data obtained from the same path on different days, months, or years depending on the nature of change. One might detect differences in the urban form and activity by looking at the built form analysis and semantic data analysis of space over many months – especially discovering patterns of newly forming densities, or finding out about how a neighbourhood is changing, gentrifying, or deteriorating. We illustrate street vitality and urban change explorations with several examples of paths in different cities that are significant to the related comparison – bustling city centres, urban renewal areas, and gentrifying neighbourhoods. We explore possible interrelations between morphologic and semantic characteristics of space.

# THE CITY OF ENTERTAINMENT AS AN EXPERIMENTATION FIELD FOR IMPROVING THE DAILY PUBLIC SPACE

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**Mrs. Margherita Capotorto**

*Università degli Studi di Pavia*

## Abstract

"... it is men who make cities, not walls ..." (Nicia of Syracuse - Tucidite, VII pp. 77)

If the city is the place of human relations, the "city of entertainment", which here means camping and tourist villages, represents a particular form of urban agglomeration codified on the needs of the temporary "citizens" who live there.

Open-air tourism accommodation facilities encode an urban representation of the tourist who tends to the dreamlike dimension of the city. The act of vacation, understood as a space other than everyday life, bears the optimistic projections of people, who seek, in a place far from home, the representation of an ongoing utopia that tends to dream. Today, mobile homes represent the most widespread hospitality system of outdoor tourism. The housing units for 4/6 people are set up in a context with a strong naturalistic character, building a landscape encoded with the elements of the urban context. Streets, squares, seats, green areas, technical routes, services and homes, these "incomplete cities" encode a new image of the city for the shared vision of the tourist. Expectations generate a system of urban spatiality, which translates the public / private relationship on ambitious and virtuous themes, among which the most contingent concerns the sustainability of public space. The city "dreamed" for the holidays interprets many contemporary urban instances, including the ecological dimension, safety, sociability, and well-being.

The article proposes the reading of new ways of defining "the city of entertainment" through the declination of some design strategies applied to specific Italian case studies that can be read as good practices for rethinking the everyday public space. The dreamy thrust that determines the settlement choices of the open space of open-air tourism accommodation facilities can be the experimentation plan for improving the daily public space.

# **FROM ICONOGRAPHIES TO MORPHOLOGIES. AN OVERVIEW ON EUROPEAN AND CHINESE URBAN FORMS THROUGH 10 IMAGES**

**Prof. Marco Trisciuglio**

*Southeast University / Politecnico di Torino*

## **Abstract**

The aim of the paper is describing the methodology, the contents and the outcomes of a research and teaching activity developed by the "Transitional Morphologies" Joint Research Unit in the last seven years (2015–2021) in Nanjing, at SEU School of Architecture.

The main question of the work is explaining how urban morphology and iconographic studies on urban contexts can collaborate in order to map the features of urban spaces in different cultures, even adopting comparative methods for analysing.

The presentation will describe the form, the size and the use of “urban spaces” in the European City, as well as in the Chinese one, through a diachronic sequence of ten images (from the Middle Ages until the Eighties and until today).

The 10 steps studied are: the rising of the Italian City in the Effects of Good Government (Ambrogio Lorenzetti, 1338), the invention of perspective in the Ideal City (now in Baltimore, Fra' Carnevale -?- , 1484), Life, reality and atmosphere of the European City considering View of Delft (Jan Vermeer, 1661), the urban design as drama in the engrave View of the Basilica of St. Peter`s Square at the Vatican (Giovanni Battista Piranesi, 1740), the rule and the invention, or the logic of composition demonstrated by Palladian Building`s “capriccio” (Canaletto, 1759), the perception of the modern city in The Carnival in Boulevard des Capucines (Claude Monet, 1873), the industrial city in Periphery (Mario Sironi 1920), the urban space into a camera as The Kiss in Front of City Hall Paris (Robert Doisneau, 1950), complexity and contradiction in the contemporary city through Wings of Desire [The sky upon Berlin] (Wim Wenders, 1987) and the dystopian city between science fiction, comics and contemporary urban space told by the Incal`s city (Moebius and Alexander Jodorowsky, 1981–1988).

# THE IMPACT OF PLOT CONFIGURATION ON THE PATTERNS OF MORPHOLOGICAL CHANGE: A DIACHRONIC APPROACH TO THE URBAN (RE)DEVELOPMENT PROCESSES IN NEW YORK, MELBOURNE AND BARCELONA

**Mr. Onur Tumturk**

*University of Melbourne*

## **Abstract**

Investigation of the patterns of urban (re)development and spatial change and identification of the laws behind these processes are critically important to understand how cities evolve under different material conditions. Urban morphology investigates this reciprocal relationship between formal preconditions established by buildings, plots and streets and dynamics of change in cities. Without denying the fact that socio-economical, cultural and historical peculiarities of the context are important determinants, this research aims to examine morphological conditions prepared by *plot structures and configurations* and their impact on the trajectories of urban redevelopment in three international case studies: New York (Midtown), Melbourne and Barcelona (Eixample). Physical and functional changes that occurred in each city centre during different periods (1880s-1920s-1960s-2000s) will be mapped and measured quantitatively by relying on digitised cartographic resources obtained from local archives. The relationship between the patterns of physical and functional change and various measures of plot configuration (*plot size, accessible plot density and plot size diversity*) will be analysed in a diachronic manner. The empirical investigation indicates that plot configuration plays an important role in guiding long-term spatial change in each of these cities. Rather than individual plot size, accessible plot density and plot size diversity works as more reliable metrics in explaining *physical change* by locating individual plots in accessible catchment areas –i.e. urban tissues defined by the degree and quality of subdivisions. In that sense, fine-grain and homogenous plot structures are more resistant to the emerging pressures of urban redevelopment and change. On the other hand, *functional transformations* are better explained with the measure of individual plot size informing that small plots are more adaptable for a wide range of land uses. Critical discussion of these morphological parameters will contribute to our understanding of urban redevelopment processes and help to regenerate resilient and adaptable urban spaces by design.

# A DEEP LEARNING APPROACH FOR URBAN BLOCK: AUTOMATED EXTRACTION TOOL FOR URBAN FORMS

**Ms. Didem Turk**

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## **Abstract**

Increasing access to geographic data and mapping technologies has pushed urban morphology research toward more quantitative and data-driven approaches. At the same time, the unprecedented rapid change in the urban form has prompted a growing number of research to capture, analyze, and understand the phenomenon in recent years. However, a thorough, systematic approach to evaluating and comparing urban forms in this setting is yet to be developed.

The aim of this study is to build a comprehensive approach to define urban form indicators by developing a simplified yet representative classification of the urban form. Notably, urban block as a constitutional feature of urban form is evaluated in relation to numerical indices such as density, proportion, and street network.

The applied methodology comprises detection and classification of urban form by using a deep convolutional neural network. The study attempts to use automated methods, GIS, and Deep Learning applications to address the gap in urban form classification and characterization. The methodological process encompasses two structural tracks. The first section of the study provides a *non-local classification* of urban form, followed by an examination of the identified urban features of the urban block. The second part of the study aims to provide a base for developing alternative maps by testing applied methodology with parametric design tools.

The preliminary outcome of this study consists of an in-depth analysis of urban block indicators present in the relative literature. This will be one of the inputs of the deep learning model to classify urban blocks.

# CHINATOWN'S KEY BUILT FORM ELEMENTS OF SENSE OF PLACE: FINDINGS FROM AN IMMERSIVE VISUAL SURVEY

**Prof. Francisco Alaniz Uribe**

*University of Calgary*

## Abstract

**Background:** Cities are made up of multiple diverse cultural areas that are rooted on heritage. These areas evolve over time and experience pressures for change and redevelopment that can erode its sense of place and perpetuate its marginalization. Chinatown in Calgary is one of those areas with strong historical roots and under redevelopment pressure.

**Aim and objectives of the study:** How to accommodate change while retaining their heritage and sense of place? This research had two objectives. First to focus on identifying key elements of the built environment that contribute to the sense of place and identity. And second, to develop an online, immersive and visual engagement process that could facilitate conversations with the public during pandemic health restrictions.

**Method:** A web-based public engagement process using an immersive, 360degree photographic survey was used to measure the community's perception of importance and impact of built form elements on Chinatown's sense of place.

**Findings:** The built form elements prioritized included streetscape design and programming with a preference of pedestrian over vehicular traffic reflecting its historical use; the buildings' architectural language with a complexity of motifs, and the use of traditional materials and construction technics that evoke its original culture; buildings respecting human scale; street-wall permeability; and signage as a visible remainder of the original languages.

**Conclusions and implications:** The findings of this study contribute to the understanding of what elements of the built environment contribute to the sense of place of ethnic and heritage areas. They will be the basis for urban design and architectural guidelines and will contribute to more appropriate redevelopment proposals. Will help build inclusivity and a degree of certainty for the future of cultural and ethnic areas of our cities.

# RE-IMAGINING CROWSNEST PASS: FINDINGS WAYS OF REDEVELOPING/RE-SKILLING A COAL MINING COMMUNITY

**Prof. Francisco Alaniz Uribe**

*University of Calgary*

## Abstract

**Background** While world leaders gather in Glasgow to decide strategies to face climate change at the COP26 Climate Change Conference, small communities around the world, dependent on current energy practices, struggle to come to terms and find a way to adapt to the phase out of traditional energy sources. The Municipality of Crowsnest Pass in the Canadian Rockies is an example of a coal mining community that needs to reimagine their future to redevelop and re-skill a dwindling economy.

**Aim and objectives of the study** How can we facilitate the redevelopment of a community that needs to change its economic drivers? First by identifying the available potential within existing cultural, economic and environmental resources; and then developing, through a community-based collaborative effort, a series of land use and redevelopment strategies that provide future alternatives and can be economic drivers for new employment.

**Method** Through a community based research collaboration between citizens and students, using mixed methods of spatial analysis, historical evolution and morphology, a public participatory processes and experiential learning, a series of redevelopment strategies were drafted.

**Findings** Once the site was reevaluated with a comprehensive approach to analyze future potential, many opportunities arose, building confidence in existing assets and generating new ideas that could trigger positive change. Multiple design ideas for redevelopment were drafted based on a rich cultural and natural landscape. Those ideas were very well received by the community.

**Conclusions and implications** Students and community members are a great partnership: respectful, enthusiastic and empathetic. While implementation will be difficult, the redevelopment strategies and the processes itself present a renewed impetus for change with an optimistic view for the future of Crowsnest Pass. Different scenarios and strategies for investment and redevelopment can drive fundraising efforts at the local, provincial and federal levels.



# MODERN URBAN FORM RENEWAL AT CHESTE WORKERS UNIVERSITY

**Mr. Fernando Usó Martín**

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**Dr Carmen Jordá Such**

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**Mr. Carmel Gradolí Martínez, Mr. Pascual Herrero Vicent,**

*Universitat Politècnica de València*

## Abstract

**Background** Franco's Workers Universities, intended for vocational training - with the State covering all student costs - were inspired by the progressive Belgian model of the *Université du Travail*. Cheste W.U., designed by Moreno Barberá in 1967 for a population of 5,000 people -larger than 88% of municipalities- was planned on a hill 23 kilometres from Valencia, following the Athens Charter. Grouped by functions, the pieces are placed adapting to the topography, segregating road and pedestrian circulations. The urban complex is a synthesis of modern experiences: the rhythm of the concrete *brise soleil*, the Miesian delicacy in the levitation of buildings, the sculptural canopies -with Latin American accent-, or the Mediterranean and Californian appropriation of exteriors.

**Method** The working method develops three lines of action: political, economic, and legislative. The change of political regime suppressed this educational model. The dictatorial segregationist programme gave way to democratic policies that sought equal opportunities, emptying the Cheste's complex of its function. Economic development led to the transformation of the landscape. New industrial and service areas expanded around it and the proximity of new infrastructures had an environmental impact on the urban area. The lack of heritage protection is a determining factor in the degradation of the urban fabric which, together with the complexity of the administrative-legislative management, has repercussions on the deficiencies accumulated in this paradigmatic example of modern urban planning.

**Aim** The main objective of the text is to define criteria for intervention that reconcile the new expansion areas with the heritage urban fabric.

**Findings** The research proposes, in a novel way, the incorporation of heritage considerations for the readaptation of the urban fabric.

**Conclusions** After the above analysis, it is proposed to design a Partial Plan that includes criteria to eliminate inappropriate actions and guarantee future actions.

# OPTIMAL FLOOR HEIGHT TO ESTIMATE BUILDING HEIGHT FROM THE NUMBER OF STOREYS CONSIDERING BUILDING USE IN THE TOKYO METROPOLITAN REGION

**Dr Hiroyuki Usui**

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## **Abstract**

Precise building height is indispensable for evaluating variability in building heights. However, relevant data are not always available. Conventionally, building height is approximated as the product of the number of building storeys and floor height, called *approximated building height*. However, there is no consensus on how floor height, a key determinant of approximated building height, should be set. In Japan, increasingly precise building height data are becoming available as an open 3D urban model, named *PLATEAU*. This provides the motivation for answering the following research questions, in the context of the Tokyo metropolitan region: (1) *What is the difference between approximated and precise building height?* (2) *How should we set floor height to minimise the difference between approximated and precise building height?* The results show that: (1) the average difference is  $-3.46$  if floor height,  $c$ , is 5 metres,  $-0.87$  if  $c$  is 4 metres and  $1.71$  metres if  $c$  is 5 metres; (2)  $c = 4$  can effectively estimate building height from the number of storeys; and (3) the difference between approximated and precise building height is spatially clustered where commercial zones and industrial zones are allocated, with its degree being dependent on how floor height is set. Furthermore, it is found that: (1) in commercial zones and industrial districts, the optimal floor height is greater than 4 metres; (2) in mid/high rise residential districts, the optimal floor height ranges from 3 to 3.4 metres; and (3) in low-rise residential districts, the optimal floor height ranges from 3.5 to 3.9 metres. The findings of this paper can help urban planners find the optimal floor height in each district and understand spatial variations in building and floor heights.

# RETAIN OR REBUILD: DIFFERENT PATHWAYS OF REDEVELOPMENT IN URBANISING CHINESE VILLAGES

**Mr. Lukas Utzig**

*Technische Universität Berlin*

**Prof. Philipp Misselwitz**

*Technische Universität Berlin*

**Prof. Laura Vaughan**

*University College London*

## Abstract

While the ongoing rapid urbanisation in China transforms farmland into urban areas, old villages receive a certain level of protection from being completely rebuilt. This is due to the grassroots ownership of rural land, which is held by village collectives. The village becomes surrounded by the city, called *chengzhongcun*. During this intense transformation from an agricultural to a landless way of life, the village collectives redevelop their dense settlement in very different ways to create resilience and benefit from the opportunities that urbanisation brings.

This research is examining four old villages in the Huangyan-Taizhou region during their redevelopment. It will be analysed how different stakeholder decisions create variations in their urban form and how this influences their economic resilience.

Employing methods from the space syntax framework coupled with land use mapping and interviews, this research builds on Hillier's concept of the movement economy. Hillier finds that urban form generates movement, which then becomes the precursor for street-based economic activities such as retail and services. This relates to Vaughan's and Hall's work on ethnic marketplaces, which identifies informal economic networks as key social safety nets of low-income and migrant neighbourhoods.

The findings suggest that villages that have seen bottom-up incremental changes and retained their organic street network generate higher movement than rebuilt villages and thus are able to shift their economies towards the service sector. Their building stock is also more adaptable to ground-floor subdivisions and retail use, while redeveloped villages often have set-back buildings with residential ground floors that cannot facilitate informal use or retail space. Since the former farmland surrounding the villages is developed into industrial land, the villages are the only possible site for restaurants, shops, and other amenities, creating many opportunities for villagers. They can be however only realised with specific pathways of redevelopment.

# **URBAN SEGREGATION OF LONDON SOCIAL HOUSING ESTATES: MEASURING ACCESS TO THE CITY AND THE QUESTION OF REGENERATION**

**Mr. Lukas Utzig**

*University College London*

**Dr Kayvan Karimi**

*University College London*

## **Abstract**

While London is currently experiencing an acute shortage in affordable housing, local authorities are selling existing council estates for private redevelopment. This practice is often explained with the notion of failure of certain buildings, such as the Robin Hood gardens estate which went on to be partly demolished in 2017. At the same time increasing evidence has been gathered, which shows that social, walkable streets and neighbourhood amenities are especially important to economically vulnerable groups as they provide the basis for local communities that act as social support networks through childcare, informal employment, or housing. However, it is often these groups that are most affected by segregation through the urban form of the neighbourhood and limited access to the wider city. Research into segregated communities by Legeby, among others, suggests that a simple regeneration of the buildings themselves does not tackle the underlying problem of social urban resource distribution.

This research will investigate the relation of urban form to the potential of pedestrian activity and distribution of neighbourhood resources for four high-rise council housing estates in London. An innovative workflow combines space syntax measures with Gravity accessibility, including the access to amenities such as shops and restaurants via the street network.

The findings suggest that access to the resources the city provides, including access to urban co-presence, is very unequally distributed between the four case studies. It is also shown to what degree some urban form is creating obstacles and how it can be measured and compared. Improving opportunities through urban form in the neighbourhood may be an alternative to demolition of the buildings. Quantifying these inequalities offers a more nuanced debate about social housing redevelopment and a pathway for sustainable improvement.

# THINK OUTSIDE THE BOX. TOWARDS NEW TRANSIENT MORPHOLOGIES: THE CASE OF POST-EMERGENCY HOUSING

**Dr Giovangiuseppe Vannelli**

*University of Naples "Federico II"*

## **Abstract**

**Background** The doctoral research this contribution is referred to assumes as background the catastrophic effects of the seismic phenomenon in Italy. Temporary settlements, permanently altering the morphology of small villages, dotting the Italian inner landscape have become even more disastrous to those peculiar contexts. When in a state of emergency, decision-making factors and political conditions are central in determining design actions. Thus, a not projective approach of politics and administrations can obstruct future scenarios of redevelopment and renewal. Moreover, political and economic systems often determine the adoption of unsuccessful post-emergency architectural solutions and, then, urban fabrics where to live in during the long-time of temporariness needed for the reconstruction in Italy seems almost impossible.

**Aim and objectives** The research focuses on the residential supply that in Italy is in charge of the Department of Civil Protection. The "box-effect" is pointed out as the thorniest design feature of those residential projects. What is worthy of being focused is the relationship between the single unit and the urban system and to this are related legal and administrative factors: the relationship between the different actors of the process - at the different scale - is something to be reinvented together with the design approach.

**Method and findings** Temporary housing design has been investigated through comparative research between international case studies, and then, leading a period of field research, while design has been used in a simulation phase as a research tool to make explicit the need of a time-based design for the proposed prototype: an incremental and disassemblable housing.

**Conclusions and Implications** In conclusion, post-disaster design is proposed as "open", "open-source", "minor". Such an approach requires and determines a manipulation of decision-making factors with the aim of an urban redevelopment and revitalisation necessary to avoid the fast obsolescence of these wide temporary heritage.

# **URBAN FORM OF SETTLEMENTS ON WATER: A MORPHOMETRIC COMPARISON BETWEEN MAKOKO AND VENICE**

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## **Abstract**

In sub-Saharan Africa, most of the urban population resides in informal settlements. Recent studies highlighted similarities between these and historical city centres, suggesting that, although there are issues related to lack of infrastructure and inadequate access conditions, the organic urban form of informal settlements presents certain qualities, such as incremental development, compactness and enhanced walkability, which are also present in historical city centres. In line with such works, this study compares the urban form of Makoko, a large informal settlement in Lagos, Nigeria, and Venice, a historical city in the Veneto region of Italy. Both settlements are characterized by an integral relation with water, intricate networks of paths and canals and transport partially relying on boats. The main urban structure of both settlements is described via eight morphometrics extracted from openly accessible data. These are then compared, both visually and statistically, across the two case studies. Since Venice underwent a multi-centennial process of urban consolidation while Makoko was more recently established, the comparison also includes the most consolidated part of the informal settlement, located north-west of the study area. Outcomes show relevant similarities between the whole of Makoko and Venice in terms of building elongation, building alignment to streets/canals, diversity of building footprints and percentage of built-up area. Furthermore, the most consolidated part of the informal settlement results even more similar to Venice, suggesting that, if Makoko is allowed to develop through the self-organised processes which brought it at its current stage, it might further evolve, to become an even more valuable urban entity. Accordingly, measures to protect the settlement from current threats of eviction should be considered by policy makers in Lagos.

# ON THE RELATIONSHIP BETWEEN URBAN FORM AND AMENITIES: A NEW PERSPECTIVE FROM QOM (IRAN)

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## Abstract

Urban amenities are fundamental for cities as they not only provide goods and services to residents and visitors, but also contribute to a set of tangible and intangible aspects, such as safety, liveliness, and liveability of the urban environment. Previous studies investigated the relationship between metrics of street network centrality and urban amenities. However, they hardly focused on further aspects of the built environment, such as plot size, floor area ratio or grain of the urban fabric. A further drawback is that relationships were mainly assessed through linear models even though more complex and non-linear relationships plausibly existed. In this work, we, first, comprehensively describe the urban form of our case study, the city of Qom (Iran), through a set of 55 morphometrics computed at the plot level, quantifying aspects of the urban fabric and street network, and second, we investigate the relationship between these indicators and commercial floor area ratio, through a set of machine learning techniques, able to handle non-linear behaviours. The best model explains up to 51% of the variance of the density measure, with coverage area ratio, plot size, floor area ratio, street canyon width, and betweenness centrality being the top five explanatory factors. Findings suggest that denser city areas characterised by small plots with regular shapes, abutting on relatively wide and globally well-connected streets are associated with higher densities of commerce and services. While the outcomes of this study do not hold universal value, the methodology proposed in this work can be replicated to explore the same research question in different contexts. It can also be used as evidence-based tool to inform design choices affecting the location of amenities in cities.

# URBAN VERTICALIZATION MORPHOLOGIES: APPLYING THE ANATOMIES OF DENSITY THEORY IN THREE CHILEAN METROPOLITAN AREAS

**Dr Magdalena Vicuña**

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## **Abstract**

Urban densities are declining alarmingly worldwide (Angel et al., 2016). The need to reverse this trend is practically a consensus on the international agenda (United Nations, 2016). This claim has been revalued after the pandemic and the debate on what dense cities gain and public policy responses should be (McFarlane, 2021). Solving the "too much" or "too little" density dilemma (Keil, 2021) requires locally situated analyzes that shed light on the limitations and contradictions of density as an urban epistemology (Pérez, 2020). Verticalization is a growing phenomenon in the global south and Latin American cities, where urban renewal is gaining strength as a y for social integration and sustainable development. In Chile, verticalization has increased significantly in its main metropolitan areas, with a high cost for pre-existing neighborhoods. Between 2002 and 2020, apartment units constituted 73.7%, 67.5%, and 41.7% of all building permits in Santiago, Valparaíso, and Concepción, respectively.

Density is a multifaceted concept (Libert & Gainza, 2014), polysemous (Churchmann, 1999), and of multiple interpretations (Berghauser Pont & Haupt 2010, Boyko & Cooper 2011, Pafka 2013). In order to monitor density and support decision-making for residential densification policies, Angel, Lamson-Hall, and González Blanco (2021) are developing the theory of the anatomy of density. The theory states that the disaggregation of density into seven measurable factors allows a deep and precise understanding of its potential, scope, and limitations. This work aims to visualize and analyze the anatomies of verticalization in the metropolitan areas of Santiago, Valparaíso, and Concepción during the 1990-2020 period, using the theory of density anatomies proposed by Angel et al., (2021). As these authors suggest, cities obtain their density from different combinations of these seven factors. Therefore, this research contributes to designing strategies that allow inclusive and sustainable residential densification.



# **EXPLORATION DESIGN ON PUBLIC AND OPEN SPACE ALONG THE CITY WALL BASED ON TYPO-MORPHOLOGICAL RESEARCH**

**Ms. Han Wang**

*Southeast University*

**Prof. Li Bao**

*Southeast University*

## **Abstract**

In contemporary China, the so-called stock renewal in cities has become a serious and significant issue towards development. Urban morphology and typology are considered as an important description for the sustainable development of urban environment, which can enter inside the genetic structure of urban space and houses. The city wall of Nanjing is not only related to the landscape and townscape as the unique monumental landmark and typological boundary, but also an important activity place and open space for the residents' daily life. Along the city wall in the inner south part of old Nanjing city, Hehutatang Block has the richest architectural relics of the Ming and Qing Dynasties and the most complete historical spatial layout and traditional house types. Taking Hehutatang as a case, this study aims to explore the design methods of public space and open space in the process of urban transition. Based on morphological and typological methods, a mixed-method approach was adopted in this research that entailed historical map overlapping and spatial syntax simulation of regional structure, boundary and architectural form analysis of the development and changes of property rights, roads and open spaces. The result has shown the regulation of transition in morphology which is responding to the change of households and lifestyles in time. Meanwhile, the formal basis to go ahead in the development of that site with new projects is summarized, and the organization of public space and open space in the residential area along the city wall is optimized. Also as the design methods in practice, urban morphology and typology can help designer pursue the origin and updates gradually instead of the symbolic and formal appearances in the previous projects. It will provide a rational model for the organizational design of public space and open space in the urban regeneration of historical areas.

# **MORPHOLOGICAL STUDY OF SHANGHAI'S CULTURAL AND CREATIVE INDUSTRY CLUSTER SPACE GUIDED BY ENVIRONMENTAL BEHAVIOR**

**Dr Han Wang**

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**Dr Xiaoyu Lin**

*Harbin Institute of Technology, Shenzhen*

## **Abstract**

The rapid development of the digital economy has been changing people's cognition style and experience of urban space. A simple semantic description of the renewal and transformation of urban physical space and environmental behavior is difficult to meet the requirements of future urban scientific development. This study takes Shanghai's urban cultural and creative industry cluster space as a research entry point, and uses human environmental behavior as a driving factor to explore the interactive relationship between urban morphology, natural environment, and human behavior. Comprehensive application of digital modeling technology to construct the physical environment of urban space, and through space syntax and multi-agent self-organizing behavior simulation technology to carry out basic quantitative analysis of the invariable parameters of the space environment and human behavior. By adopting virtual simulation technology, variable parameters that affect the space environment and human behavior are introduced, combining it with actual measurement methods to make repeated corrections. Finally, the interactive information feedback can be realized through digital visual design. The research achievements will play a positive role in the theoretical research and design methods of urban architectural planning and environmental behavior studies. The application information visualization design on rationally design and transform the shape and architectural layout of urban space can effectively organize and adjust people's environmental behavior, providing a scientific basis and criteria for the digital information transformation of urban spacial optimization design.

## **OPENING-UP OF EXTRA-LARGE BLOCKS IN CHINA**

**Mr. Hanyan Wang**

*Tongji University*

**Dr Kai Xu**

*Tongji University*

### **Abstract**

The scale of urban blocks in Chinese cities is generally larger, compared to that in Western cities. In history, considerable large amount of space that serves daily life is offered by those space within blocks, in form of semi public space or public-owned private space. Today, in a time when the bordering roads of these blocks are gradually occupied by motorized vehicle traffic and the plots within blocks enclose their borders, the offering of public space in the urban districts is significantly declined and the structure of public space system is getting vague. This paper claims that there are deep-seated reasons for such this situation, which needs to be analyzed with typo-morphological methods, while the strategies to improve public space shall also be on base of such analysis. Taking Shanghai's inner city as an example, this paper starts with identifying the BLOCK as the area defined by municipal roads with no other municipal elements within it, then conducts quantitative analysis on all such areas within Shanghai's inner city with particular observation on their longest side length and absolute area as two respective parameters, and finally concludes with startistic data characteristics of these extra-large blocks. Based on such conclusion, the paper follows with selecting a number of these blocks and carrying out Conzen methods on them. The findings are: 1) Two main morphological types can be observed: single-plot block and multiple-plot block. 2) These main types can be further categorized into several sub-types such as university campus, former state-owned industrial enterprises, stripe-form housing estate, tower-form housing, etc. According to aforementioned typological findings, various urban reconstruction or regeneration strategies on each types are proposed by this paper, on basis of both morphological target and feasibility. These conclusions can be a reference to urban regeneration planning and policy making.

# RESEARCH ON THE URBAN RESIDENTIAL SPACE FABRIC BASED ON COMPLEX NETWORK ANALYSIS – EVIDENCE FROM BUILT-UP URBAN AREA OF SHANGHAI

**Ms. Jiayin Wang**

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**Prof. Fan Yang**

*Tongji University*

## **Abstract**

The expansion of urban scale not only means the huge scale of residential population and built environment space, but also means the complexity of social network, which poses great challenges to urban governance. So, residential space fabric of metropolis is becoming the focus of Chinese urban research that can help to understand the daily behavior of urban residents. This research chooses the central built area of Shanghai as the research area, and focus on the 4454 residential quarters which were constructed since 2000. Firstly, the paper classifies the residential area according to the residential type by identifying the residential quarters of each year through the supervised learning method based on satellite image data. Then statistical analysis and change characteristics analysis are carried out according to the scope of administrative divisions. Secondly, it reveals the distribution and evolution characteristics of residential quarters based on the year by year quantitative analysis of scale, type etc. Thirdly, the complex network scientific analysis method was employed to analyze the characteristics of residential space fabric from the aspects of degree distribution, network centrality and network toughness, to explore the characteristics and significance of the residential quarters as the network central node. It points that the area scale of residential quarters in each year obey the power law. Meanwhile, such a complex network has the characteristics of scale-free network. The results of the residential quarter network in Shanghai will related to robustness, centrality, community division, network permeability, central node characteristics and so on. The conclusions of the research have important theoretical significance for the re-understanding of residential space fabric, the site selection planning and design at meso scale level in metropolis. It also has important practical value for understanding the spatial organization mode of urban residential space and applying to urban spatial planning and governance.

# **FROM A HISTORIC PLACE TO A SHARING CAMPUS: CASE STUDY OF THE SANTA TERESA CAMPUS OF THE UNIVERSITY OF FLORENCE**

**Mr. Yanchu Wang**

*College of Architecture and Urban Planning, Tongji University*

## **Abstract**

The convent of Santa Teresa in Florence was founded in the 17th century and was finally replaced by a prison in 1866. In the 1980s, under the government's plan to restore the ancient city, the prison function was moved out and the area became a campus of the University of Florence. In the 2010s, the campus was remodeled with the goal of being open to the city. The church and courtyard of the convent are being restored and will open to the public in the future. Over four centuries, the form has evolved from closed to open. Sharing becomes the direction of the change in the historic urban structures.

With the help of literature survey, field research and typological analysis of urban form, this paper analyzes the renovation strategies from three aspects. From the perspective of an open educational space, the case transforms the original internal communication space into an exhibition and meeting space open to the city. From the perspective of perceptible history, the case preserves the historic space structure and allows important historical elements to be easily seen and touched. From the perspective of the revival of the historic city, the case has become an important node of the revival by building connections of functions and activities with surrounding places. Finally, this paper summarizes three design strategies and four social conditions required for the transition from enclosed to shared urban form, making contributions to future practice.

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# **DIFFERENCES OF BREAKFAST SPATIAL DISTRIBUTION IN REAL AND VIRTUAL SPACE: AN EMPIRICAL STUDY IN THE CENTRAL CITY OF BEIJING**

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**Prof. Qiang Sheng**

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## **Abstract**

The breakfast service is an important part of local vitality which are traditionally provided by restaurants and street vendors in real space. With the outbreak of COVID-19, it has given a boost to virtual economy and delivery service providing alternative type. Under this context, how distribution of breakfast service has changed in real space? Does the location still matter? These became interesting questions. This paper presents an empirical study on the central city area (160km<sup>2</sup>) of Beijing. Based on the site survey and online research of social media data of breakfast distribution from Dazhongdianping.com and Meituan.com, nearly 3000 breakfast service are mapped in 3 categories (service only in real space, service on-line with delivery and service on-line without delivery) to study how breakfast services in real and virtual space overlap. At neighborhood scale, this paper focuses on five case areas to study the detail distribution of breakfast stores and the topological spatial accessibility of 3 types. In general, the service on-line with delivery occupy the streets with the best accessibility. Breakfast services in well-accessed location are more likely to expand on in virtual space, especially those with delivery. For the business office case area, it is found that the breakfast service only in real space and on-line with delivery are forming a competitive relationship, while these two types reveal a complementary relationship in tourist area.

# **SPATIAL-TEMPORAL CHANGES AND DRIVING FORCES OF NANNING SAN JIE LIANG XIANG FROM 1947 TO 2020**

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**Prof. Guoguang Wang**

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## **Abstract**

The urban space remains and traditional culture are facing the problem of contradiction between development and conservation. On the process of urban morphology studying, GIS and Spatial Syntax enables quantitative analysis on the evolution of urban morphology and explorations on the driving force of the evolution, through which, the change of urban form could be controlled. This paper is about one case study, taking *San Jie Liang Xiang*, Nanning, China as the study area. The research methods include historical map interpretation, urban spatial characteristic index and driving force analysis. Firstly, five important periods of *San Jie Liang Xiang* are defined. And the morphological characteristics and structural relationship of street blocks in each period are extracted. Secondly, the morphological characteristics are associated with natural driving factors and humanistic driving factors. The morphological evolution and evolution dynamics are matched to explain the law of temporal and spatial change. Finally, combining form type with form design control, this paper attempts to establish spatial form element control to guide the practice. In conclusion, the spatial pattern of *San Jie Liang Xiang* declined from distinct to illegible; the street system transformed from integrity to incomplete; the organizing of street blocks developed from scattered to aggregated; the building types evolved from single to diverse; the nature of land use changed from mixed to monotonous. The driving forces of the morphological evolution of *San Jie Liang Xiang* include the intrusion of rain and flood, the growth of waterfront area, the expansion of guild hall and commercial space, the restricted construction practice of Guangxi government, etc. The practice on the micro level of historical street blocks can be classified and controlled according to spatial pattern, street and lane system, architectural space and landscape environment, referring to which, development and conservation can be balanced in urban practice.

# **A REVIEW ON DYNAMIC CONSERVATION OF ANCIENT CITIES FROM THE PERSPECTIVE OF URBAN MORPHOLOGY**

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**Prof. Guoguang Wang**

*School of Architecture, South China University of Technology*

## **Abstract**

The protection of ancient cities has changed from static protection to dynamic protection, focusing on predicting the future based on the past and seeking sustainable development path. Practice needs innovative guiding principles, tools and methods. The layering, interrelationship, holistic and dynamic of historical urban landscape provide new ideas, with multi-disciplinary background and open operation framework. Using the method of literature review, this paper sorts out the latest research of historical urban landscape and explains its relationship with urban morphology, and expounds the understanding of dynamic conservation of ancient city from the innovative perspective of urban morphology. In the protection of ancient cities, layering is the foundation, interrelationship improves the logical relationship of protection, holistic expands the breadth of protection, and dynamic strengthens the depth of protection, which is also the ultimate goal of protection. At present, the concept and practice of dynamic conservation have been promoted and applied in many countries, such as Germany, Spain, Italy, Japan and China. The application fields include ancient cities, historical buildings, traditional villages, agricultural landscapes, etc. Its core is to explore the origin, analyze the type structure, reveal the dynamic mechanism in evolution logic, find the coupling relationship, then propose the dynamic conservation strategy. The relevant research theories mainly include Spatial Gene Theory, Anchoring- Layering Theory, Self-Organization Theory and Four-Dimensional City Theory. However, direct research on dynamics is lacking. In conclusion, the core of dynamic conservation is to conduct correlation research on the basis of stratification analysis, excavate the hidden logical relationship and dynamic mechanism in the process of change, so as to find the strategy of mutual balance between conservation and development. Therefore, grasping the core connotation of urban morphology and combing the logical ideas and technical methods of urban historical landscape can contribute to the dynamic conservation of the ancient city.



# **SPATIAL RESILIENCE OF LOCAL PLACES: A COMPARATIVE STUDY ON BEIJING'S BREAKFAST SERVICE BEFORE AND AFTER COVID19**

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## **Abstract**

The breakfast services can reflect the everyday life vitality of local places. This paper presents a comparative study on the central city area of Beijing before and after the impact of Covid19. The research area covers 160km<sup>2</sup> inside the third ring of Beijing. Based on two site surveys in 2019 July and 2020 September, over 3000 breakfast services are mapped in 6 categories (Chain restaurant, subcontracted breakfast service, fixed vendor stance, mobile vendor stance, supermarket and bakery). Space syntax model is used to analysis the spatial distribution logic of these breakfast services. Cell phone data of 2018 and 2020 are also used to provide other factors such as employment/residential densities and distances of commuting. The major findings are:

- 1) After Covid19 in the central city the total number of breakfast service reduced by 10.2%. The sharing of 6 categories remains very stable.
- 2) In general, breakfast service density relates more with residential density. But the distribution of breakfast service centres (at least over 2 breakfast services within 100m radius) relates more with employment density.
- 3) During 2019-2020, breakfast services on less accessible streets (both car or pedestrian) are more vulnerable to the decline by Covid19. In 2020, the well accessible streets have more new breakfast service opened.
- 4) The location of all breakfast centres remains stable in 2020. However, service-residence index of central area (inside 2rd ring) is higher than periphery area (between 2-3rd ring). This imbalance has been further intensified after Covid19.

As a summary, using breakfast service as a case, this study demonstrates that the street pattern and multiple scale accessibility could contribute to the vitality of local places during the impact of Covid19. The detail analysis on different kinds of breakfast service could provide additional social/economical dimension the spatial intervention and management in urban renewal projects.

# **MORPHOLOGICAL TRANSFORMATION OF HISTORIC CITY CENTER IN MODERNIZATION BASED ON MAP ARCHIVE - CASE STUDY OF HANGZHOU**

**Mr. Yihao Wu**

*Tongji University*

## **Abstract**

Historic city center is the place that preserves cultural heritage, collective memory, and local identity of the city. While in the process of modernization, many of them have been remodeled and reshaped irrevocably under the impact of western culture, with reference to morphological structures. It is quite difficult to recognize the original spatial pattern at present, which brings difficulty to urban regeneration. As a guide to this process, historical map archive could provide key information about the city's past appearance and its evolution process.

Aiming at the evolution of Hangzhou's old city from the late Qing dynasty to the early Republic of China (1840-1935), this research adopts historical map archive analysis assisted by interpretation from historical records, to display morphological transformation of historic city center in different epochs in detail. From a broader perspective, it focuses on the "phenomenon" and "ideology" in the modernization of Hangzhou, probing deeply into the mechanism of spatial change, which remedies the blind area of event-oriented research in traditional modernization study. In the aspect of urban morphology, the paper embeds the method of diachronic study into the typological approach to investigate the evolution rules of different kinds of urban morphological elements in overall and regional scale. Findings in this research would reevaluate the impact of the early modernization of Hangzhou in terms of new morphological identities, which would provide guidance or amendments for contemporary urban regeneration and heritage preservation.

# **FROM FORMALITY TO INFORMALITY: "SHARING PLANNERS" AS A DESIGN METHOD IN URBAN DEVELOPMENT OF TILANQIAO LILONG RESIDENTIAL AREA**

**Mr. Yilong Wu**

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**Ms. Yuqiu Liu**

*Tongji University*

## **Abstract**

In the aspect of urbanization, megacities in "Third World" are growing rapidly and constantly searching for ways for development, leading to the current situation of numerous informalized areas in these cities. Learning from the informality development is more viable than the previous dichotomy between First World "models" and Third World "problems" for urban research, since the future of cities lies in those of developing countries. The paper focuses on the informality development in the city center of Shanghai, taking the Lilong residence in Tilanqiao area as an example. One hundred years ago, a formal collection of commercial houses called Lilong was established in Tilanqiao due to the dramatic increase in population in Shanghai. During World War II, a large number of Jewish refugees settled here, creating a culturally mixed community, and replacing the uniform architectural style. In the present day, the area has become an informal part of the city center due to lagging infrastructure. On the basis of the participatory and action research methods, the paper concludes a new "Sharing Planners" vision for the informality area from three individual aspects of collaborative planning, stakeholders balancing and multi-agent participation. By focusing on individuals, institutions and policies, experiences and lessons learnt from the development of informality in Shanghai, the former dichotomy statement of distinguish "informality" from "formality" is gradually replaced by a sharing texture notion: The paper concludes informality, instead of unplanned chaos or exception of best practice, but as an essential pattern of considerable relevance for the urban planners in China, thus providing reference for similar cases.

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# **MEASURING THE PERCEPTUAL QUALITY OF PEDESTRIAN PUBLIC SPACE IN CONTEMPORARY CHINESE CITIES – TAKING XINJIEKOU AREA IN NANJING AS AN EXAMPLE**

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**Ms. Liang Gu, Ms. ChenYi Huang**

*Nanjing University*

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*Nanjing University*

## **Abstract**

One of the main goals of urban design is to obtain urban space with good perceptual qualities. Among the numerous perceptual qualities, enclosure, human scale, imageability, complexity, transparency, linkage, etc. are most related to the physical features (Ewing and Handy, 2009), and many scholars use quantitative methods to measure these qualities. However, when applying these methods to measure these perceptual qualities of pedestrian public space in contemporary Chinese cities, there are problems as follows: first, the existing quantitative grading standards are very diverse and they are difficult to define accurately; second, for indoor pedestrian spaces, some indicators such as enclosure, imageability, etc. need to be re-identified. This paper selects the pedestrian public space in the Xinjiekou area in the center of Nanjing as an example. Based on the existing Nolli map of pedestrian public space (Luo, et al. 2021), the enclosure, imageability, complexity, transparency, etc. are measured in a relatively more objective method. Firstly, streetscape photos of typical pedestrian public space (sidewalks, public squares, interior streets, etc.) are taken to a uniform standard. Secondly, street width, building height, number of people, signs, windows, types of elements, etc. in the streetscape are extracted to match enclosure, imageability, complexity, transparency and linkage, etc. Thirdly, the obtained evaluation results are verified by graphical representation and compared with similar studies. The research finally proposes graphical representation of perceptual qualities of pedestrian public space, which will help to optimize the urban design of space.

# RECONSTRUCTION AND ACTIVATION OF URBAN UNITS - A CASE STUDY OF TRADITIONAL HISTORIC DISTRICT IN LONGMENHAO, CHONGQING

**Dr Li Xiangbei**

*Sichuan Fine Arts Institute*

## Abstract

**Background** Despite the increasing application of the UNESCO recommendation on the historic urban landscape in the heritage conservation community, consideration of the use urban morphology in its research and practice has hitherto been limited. This communication gap is intriguing, given both approaches are rooted in classic geographical thinking around landscape.

**Aim and objectives of the study** Chongqing is a rapid developing city in western China. The Longmenhao Expansion Area has witnessed history and is called the specimen of old Chongqing. In light of the intensifying pressures for change, urban development in Longmenhao is at a critical juncture.

**Method** The dynamic identity and changing character of the area can be represented through identification of the structures, places and other traditional cultural elements of historical urban landscapes and the analysis of their historical contexts and evolution. The implementation of the strategy will thus not be successful unless it clearly addresses how to change places in ways that respect and draw on their historical patterns.

**Findings** The morphological methods provide a systematic framework for distinguishing and characterising the structure of the urban landscape. Because of the paramount interest in the continuity of the evolutionary process of the historic urban landscape, urban morphology can contribute to the implementation of the historic urban landscape idea.

**Conclusions and implications** In the course of development, Chongqing has suffered from the tendency to prioritise material and economic goals. Historically-sensitive and community-based urban landscape management that include urban design and place-making is thus a particularly important social and professional task. The principals, guidelines and tools that are concerned with a multiplicity of heritage value typologies should reflect a consensus on what to protect, assessing vulnerability to change, and prioritising actions. These can be achieved through the recognition of both integrative and morphological values of the historic urban landscape approach.

# **HISTORICAL STRUCTURE, FUNCTIONAL CHANGES AND CULTURAL CONSCIOUSNESS: THE SPACE REGENERATION OF JINLING MACHINERY MANUFACTURING BUREAU, CHINA**

**Dr Xiangrui Xiong**

*Southeast University*

**Prof. Yanhui Wang**

*Southeast University*

## **Abstract**

In the context of globalization and urbanization, the spatial and cultural boundaries are extending with the expansion of the territory and economy of the city. As a result, different forms of historical structures have been accumulated within the city. More diverse factors of culture and society indicated by these structures not only shape the urban personality but also construct the complexity of integration of historical and modern spaces. Therefore, as far as urban renewal is concerned, on the one hand, it's necessary to protect historical structures to stimulate cultural consciousness of spatial intervention to preserve the urban personality, and on the other hand, it's necessary to reuse historical structures to keep the possibilities of continuous dialogue between the past, today and future of the city. Through the methods of historical analysis and empirical research, this research takes the renewal of Jinling Machinery Manufacturing Bureau, the modern industrial sites, as a case to analyze the relationship between historical structures, functional changes, and urban development from two scales of city and area. The research shows that ;

- 1) the continuation of a stable historical structure is the key to maintaining cultural identity in the process of space regeneration;
- 2) the historical structure contains material space forms and historical narrative logic;
- 3) the cultural consciousness determines the value orientation of space regeneration;
- 4) the new functions matched culture themes can promote social values of space regeneration.

The renewal of Jinling Machinery Manufacturing Bureau has proved that activating cultural consciousness in the process of space regeneration plays an important role in urban sustainable development.

# **SPATIAL FORM COMPACT DEVELOPMENT PATH OF COAL MINING CITIES**

**Mr. Chen Xu**

*University of Chinese Academy of Sciences*

## **Abstract**

Under the background of global climate change and economic development, coal mining cities are forced to transform. However, due to the inherent geological characteristics, the transformation process is often accompanied by the abandonment of original industrial land, the hollowing out of the city center, the reduction of urban space attractiveness and the increase of commuting energy consumption. In order to realize the sustainable compact development of space, this research constructed the integrated evaluation index system from three aspects of living, ecology and industry based on geological conditions. Tangshan, a typical coal mining city in China, was selected as a case study to evaluate the integrated spatial index system on the basis of grid three-dimensional space construction. The results show that the urban area is divided by coal mines. Although the index of living and ecological services is high, the overall level of industrial activity space is low and the service coverage is insufficient. Obviously, Tangshan has achieved a relatively compact form in three-dimensional space according to local conditions, but the compactness of industrial space still needs to be improved. The integrated evaluation index system based on geological conditions aptly shows the characteristics of coal mining cities, which can provide policy reference for their sustainable and compact development.

# **EXPLORATION OF THE RENEWAL STRATEGY OF HISTORIC AND CULTURAL DISTRICTS BY THE MEAN OF SHARING : TAKE SHANGHAI TILANQIAO AREA AS AN EXAMPLE**

**Ms. Jiaqi Xu**

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## **Abstract**

With the diversification of people's needs, the traditional restoration-based conservation strategy for historic and cultural districts no longer meets contemporary demands. How to break through the traditional conservation strategy and activate the old town in a people-oriented way by the mean of sharing will be the focus of the renewal strategy of the historic and cultural districts. This paper takes the Tilanqiao area, one of the 12 historic and cultural districts in central Shanghai, as an example, to conduct a preliminary analysis on the renewal strategy of historic and cultural districts by the mean of sharing. Through field research and analysis based on Conzenian urban morphology, this paper proposes three main problems in the Tilanqiao area: inadequate shaping of iconic spaces, lack of public spaces and low quality of businesses. Through the study of three case studies, a strategy for the renewal of historic and cultural districts is concluded on the basis of sharing strategies in terms of access, interface and space, contributing to the revival of historic districts.

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# **RESEARCH ON THE EVOLUTION AND MOTIVATION MECHANISM OF INDUSTRIAL TOWN FORMS: A CASE STUDY OF SHIJIE TOWN, DONGGUAN, CHINA**

**Dr Shuya Yang**

*School of Architecture, South China University of Technology*

## **Abstract**

Since China's reform and opening up, a large number of towns in the Pearl River Delta have experienced a rapid process of rural industrialisation. Because of the cheap land and labor, rural areas have become the main undertaking areas of three-to-one-supplement enterprises from Hongkong and even around the world. Small towns abandoned the original mode of living town and vigorously developed industrial parks. Industrial areas expanded rapidly and the town forms are greatly transformed. Taking Shijie Town in Dongguan city as an example, this paper formulates the development process from traditional town to industrial town, analyses the evolution characteristics of town forms, and examines the dynamic mechanism influencing the development of town forms from the perspective of multistage planning.

The overall spatial expansion of Shijie Town has the characteristics of a circular. The expansive areas are mainly used for industry and housing, forming a form of expansion and gradual coalescence of the circular layer around the old town village. Housing forms has evolved from traditional Guangfu houses to modern owner-built houses, whose layout and space characteristics are adapted to modern life. The form of industrial parks has gone through the iteration of three generations, changing from disorderly growth to intensive building. Among them, the intervention of social forces, the market and the government at the town and village levels are the main factors influencing the evolution of industrial town forms.

# **TYPOMORPHOLOGICAL STUDY ON RESIDENTIAL BLOCKS OF TOWNS IN THE PEARL RIVER DELTA, CHINA**

**Dr Shuya Yang**

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**Prof. Yinsheng Tian**

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## **Abstract**

In the process of rapid industrialisation and urbanisation in the Pearl River Delta, the population of small towns increases dramatically, and the living space spreads in the town area. The residential blocks for local people or migrant workers, commercial houses and other types of residential space are mixed and intermingled, forming the disordered state of town living space. The aims of this study are to analyse in depth the current situation and development history of town residential blocks in the Pearl River Delta, to clarify the types and characteristics of existing residential blocks, and to provide some references for the optimization and development of the town living space in China.

In this research, buildings, plots and internal streets of blocks are considered as the main research elements. It identifies the morphological characteristics of residential blocks through typomorphology, and draws the typical process. Town residential blocks can be roughly divided into 6 types: traditional "village", row house, back-to-back house, "handshake" flat, enclosure housing block, garden-house block. Based on the social and economic background and historical data of the Pearl River Delta region, this paper analyses the history of small-town residential block development by the Italian process typology, and divides the development process of small-town residential blocks in the Pearl River Delta region into four phases: Natural growth; High-speed expansion; Construction control; Stock renewal. Finally, through the linkage analysis of the histories and distribution of town residential block types, this study explores the main driving force affecting the development of town residential blocks.

# **INVIGORATE URBAN PUBLIC VITALITY BASED ON SPATIAL CHARACTERISTIC ANALYSIS: A CASE STUDY OF LUJIAZUI CENTRAL AREA**

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## **Abstract**

After over 30 years of development and construction, Lujiazui central area has become an important financial center in Shanghai, which is a shining business card of this international city as well as a window of China's foreign economic communication, and these are the original intention in the beginning of the construction. However, this study believes that today, 30 years later, besides the role of financial center, Lujiazui central area should become a city center with more complex functions in order to provide rich public space for citizens's daily life.

The present spatial morphology of Lujiazui central area is low density of high-rise building community, involving the problems of few public open interfaces, single space function with strong privacy, weak accessibility of public space, etc. The core of the problems stems from the lack of necessary connections from space to space: the overall function of this area is relatively single, resulting in the lack of functional connection between spaces; the morphology of low density and super high rise further weakens the degree of traffic connection from space to space.

Based on the present space characteristics and problems of Lujiazui central area and the study of related cases, this research puts forward the strategies of renewal and improvement in order to enhance the public vitality of Lujiazui central area, including increasing the mixing degree of spatial functions, optimizing the distribution location of public space, increasing public open interfaces, improving the accessibility of transportation system and guiding by public policies. In addition, this study demonstrates how these strategies are presented in space through a design experiment.

# **CLIMATIC ADAPTATIONS IN RENEWED URBAN FORM: INVESTIGATION OF THE FORMAL AND INFORMAL SETTLEMENTS IN ADANA**

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## **Abstract**

Throughout human history, climatic conditions had guided the mechanisms in shaping our living spaces, however they seem to have lost that priority in the anthropocene era. Rapid urbanization and associated social economic dynamics occurring on a global scale often cause climatic data to be ignored, even in the most fundamental issues related with architectural and urban form. This course is apparent in Turkey, especially with the implementation of economy and urban policies in the second half of the 20th century; resulting in architectural and urban planning practices largely becoming a tool for producing high profit/non-climate adapted projects. During this period, an unbalanced urbanization has been followed by a redevelopment phase in country's growing cities. Adana, a Mediterranean city with hot-humid climate in Southern Turkey is examined as a relevant case in the study. Due to the population outburst caused by intense migration in Adana along with the subsequent urbanization policies manifested since 1980's; the city now faces serious microclimatic consequences as its architectural and urban form characteristics continue to change drastically. Most notably, the analysis show that the approaching wind is currently being blocked from the northern, eastern and westerns directions where most of the redeveloped settlements are located. Curiously, the informally grown settlement in the southern district seems to be the last region with potential for climatic adaptation in this regard. To examine this further, an urban form analysis in the context of climatic input was attempted in Adana by evaluating the relation between wind and urban form with auxiliary tools. The study aims to enlighten the overlooked values of 'informal' form while investigating its potentials and intends to provide valuable information for future research and development of sustainable urban policies.

# **PLACE-MAKING AND INTERFACE REGENERATION: SPATIAL REVITALIZATION OF SHAPOWEI HISTORICAL ENVIRONMENT IN XIAMEN, CHINA**

**Dr Biao Yin**

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## **Abstract**

Abstract: Urban regeneration plays a significant role in urban inventory optimization. With the advent of the whole-media era, the instant online celebrities thinking began to affect the mode of urban regeneration. Single space renovation and capital attraction have become one of the development trends, ignoring the context formed in the historical development of the city and the importance of place-making and interface regeneration. Taking Shapowei in Xiamen as an example, this paper explores the special historical elements formed in the spatial evolution from the two aspects of social and cultural changes and physical spatial changes, through literature review and field research. On this basis, a comparative study is made on the modern spatial governance of Shapowei, and the relationship between place-making and interface regeneration of spatial revitalization is analyzed, hoping to explore new ideas for urban regeneration and the protection of historical culture.

# STRATEGIES TO ENHANCE THE COMPETITIVENESS OF THE CITY BY REALIZATION OF PUBLICNESS

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## **Abstract**

As the world's economy becomes increasingly globalized, cities compete for people, capital, and jobs with other areas. It is empirically known that the "realization of publicness" is critical to enhancing a city's competitiveness. There are many actors in implementing publicness, and here the local government and corporations are the key actors. Many actors are in play, including local governments and private corporations, creating the edges of public space towards value creation. This paper attempts to analyze the physical asset of public spaces in the Seoul metropolitan area, where many jobs have been created. More than 310,000 business datasets were collected over the years of 2010, 2015, and 2020. Based on the spatial analyses of the data, the study shows the type of built-environment factors leading to the formation of attractive physical assets associated with intensive job creation. Through some case studies in the study area, this paper proposes three strategies for public space design. First, an 'Invisible public hand' strategy advocates the role of local governments to proceed with systematic management of public spaces with high development pressure. By easing the regulations restricting the use of areas, private stakeholders may capitalize on the emerging opportunity of using the site or redeveloping nearby properties. Secondly, an 'Invisible corporation hand' strategy separates the role of the public and the private. For instance, the local government continues to own the land, whereas private corporations acquire the management right and induce citizens' access to the public space. Third, an 'Affiliated with the visible hand' strategy proposes to utilize the location's premium location. Companies and local governments form a partnership to provide a "shared space" so that the space can act as an incubator to attract small and medium-sized enterprises (SMEs), venture capital, and start-ups.

# RESEARCH ON THE INFLUENCE MECHANISM OF URBAN REGENERATION POLICY ON THE FABRIC AND EVOLUTION OF PRODUCTION SPACE

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**Prof. Fan Yang**

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## Abstract

The urban development of China has entered urban regeneration process, which of production space is an important content. For a long time, the industrial policy has affected the distribution and migration of production space which caused many urban problems. Therefore, this research has important significance on Chinese urbanization.

It selects the urban area of Tianjin City as the research area, which is a typical traditional industrial base city full of various production space, based on the data from official resource and satellite images, such as plant area, location, ownership, industrial category and surrounding municipal road network about production space in past 2 decades. Firstly, it identifies the distribution characteristics of production space for per year to form an overall cognition of the evolution of the spatial pattern, and then refines the description of the distribution and evolution characteristics of the production space by overlying information, such as industrial categories and enterprise ownership. Secondly, it identifies the transformation and redevelopment site of production space, and generalizes the characteristics of scale, enterprise attribute, industry type and other. Thirdly, this research focuses on the descriptions of the disappearance production space which have transformed into other functional space and analyses it by using geospatial tools. Fourthly, it tries to reveal the driven force from the bring by land management mechanism, modern enterprise institution reform and idle industrial land revival policy, through analyzing specific cases. Finally, this research explores the stream path of policies by dividing generation closely related to the transformation of production space in Tianjin.

This research points out that the regeneration and evolution process of the production space represents the history of the national institutional environment and eco-social transformation. In the other hand, the market-oriented reform and housing commercialization reform has caused a major distortion to the production space pattern.

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# **MORPHOLOGICAL INVESTIGATION OF THE URBAN FORM OF QOM (IRAN) AT THE MICRO-SCALE: STREET LAYOUT VERSUS ACTIVITY PRESENCE**

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## **Abstract**

Structural characteristics of the street network have a crucial role in understanding the distribution pattern of activities since streets are the interaction space for two of motorized/pedestrian traffic flow throughout the city which can be applied in land use and traffic planning. Qom is a large city in central Iran with a long history of civilization which results in a diverse typology of urban form in the historic, middle and peripheral areas; accordingly, the city includes different kinds of movement-activity patterns which are the consequences of morphological, economical and social drivers. To take a step towards recognizing the patterns, this paper aims at rigorously explaining the relationship between the structural features of street layout and CS activity presence in Qom at the micro-scale of the street network, i.e. street segments, through adopting a quantitative approach by utilising an integration of spatial/GIS-based and statistical tools/techniques. Firstly, ten morphologically-homogenous high-centralised superblocks - called local morphological zones (LMZs) – are identified by modelling street network centrality index of local closeness (LCNC) using Multiple Centrality Assessment (MCA); secondly, the distribution of measures of layout/activity alongside the street segments (assigned by LCNC) are investigated using Lorenz curve. Thirdly, the distribution density of every layout/activity measure is modelled using Kernel Density Estimation (KDE) and analysed by raster comparison techniques. The preliminary findings show that CS activity distribution alongside street segments has more relationship with LCNC compared with the street nodes in all LMZs. Concerning the distribution density pattern, the highest spatial correlation is found between the street nodes (i.e. three-ways and dead-ends) and street segments' LCNC. The results can be used for achieving the goals of community planning regarding land use and traffic pattern.



# **SOCIAL DETERMINANTS BEHIND WATER TOWNS IN PEARL RIVER DELTA, CHINA WHOSE HISTORICAL TISSUES SURVIVE THE IMPACT OF INDUSTRIALIZATION: TAKE THREE TOWNS WITHIN THE SANGYUANWEI WORLD HERITAGE IRRIGATION STRUCTURES AS EXAMPLES**

**Dr Yue Zeng**

*School of Architecture, South China University of Technology*

**Prof. Qifeng Yuan**

*School of Architecture, South China University of Technology*

## **Abstract**

**Background** Area within Sangyuanwei irrigation structures is the largest and best-preserved dike ponds in Pearl River Delta and consists of Xiqiao, Jiujiang and Longjiang three towns. Although these three also suffer from the onslaught of industrialization, they have maintained much of their historical tissues.

**Aim and objectives** Through identifying the different tissues, fringe belts and morphological regions resulting from agricultural and industrial eras of the three towns' villages and townships, this paper attempts to explore the social determinants behind, and provide a reference for towns on how to preserve historical memory while developing at high rates.

**Method** Research design: qualitative and quantitative, mapping the town plans via historical books and 2022 Google earth map with GIS.

Sample: villages and townships of three towns

Analysis: summarize their characteristics, indicators include plot size, shape, organization, enclosure, land utilization, density, etc.

**Findings** The agricultural tissues haven't change, only new houses partially replaced the original ones, and grow along the periphery of old village. Then village industries grow around new houses, forming a clear circle structure.

**Conclusions and Implications** In agricultural times, since the construction and maintenance of dike ponds and embankments could not be done by one household, the three towns established a government-supervised, clan-dominated system, which shaped the villages of the time. This social structure has actually continued to this day, with clans evolving into village collective economic organizations, holding the power to allocate village resources and have the ability to play games with the government. This is why the three towns can retain so much historical tissues, but also why their land use is so fragmented. Tissues formed in agricultural era is not incapable of adapting to the industrial era, but since village collective economic organizations can only see interests within their boundaries, higher level planning guidance and coordination are needed.

# **POLITICAL REFORM AND THE FORM OF THE CITY - READING THROUGH THE ADOPTION OF MODERN PLANNING IN TEHRAN USING SPACE SYNTAX**

**Mr. Sepehr Zhand**

*University College London*

## **Abstract**

With the discovery of abundant oil resources and the bold agenda of the former monarch of Iran, a rigid and ambitious political reform was introduced in the country. Adopting a western way of economic development, these political reforms sought to not only change the social arrangement in the country, but also change the way the country was looked upon. This set path for a series of radical and quick changes in the way everyday life of the city dwellers was facing.

Given the importance of the industrialization in these political reforms and moving away from a labour-intensive economy, top-down modern master-planning changed the way the cities were thought of and in turn the way they meant to be serving the political agenda. In time for the rise of the modern methods of material production and vehicular-based strategic planning, the capital city of Tehran became the most prominent subject to these changes in terms of patterns of development and settlement schemes.

Through a conversation between the planning and policy-making documents and a quantitative analysis of the built city, this research seeks to ask how the change in the political agenda and the approach in city making logic shapes the modern metropolitan area of Tehran and what are the fundamental differences between the process of growth in the built environment before and after the implementation of these changes. This research uses the built form as a medium to develop this idea and reflect on both sides of the process. Applying network analysis and data science methods, this paper tries to describe the impact of modern policy-making in a quantified informed manner.

# THE TYPES AND DISTRIBUTION OF URBAN IMAGE " COMPOSITE PATTERN" - AN EMPIRICAL STUDY BASED ON QINGDAO, CHINA

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**Prof. Zhengliang Jiang**

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## Abstract

**Background** Kevin Lynch proposed the concept of the "Urban Image" and its Five Elements based the 'mental picture'. However, the real urban scenes are often rather different from the abstraction of the urban image among people's minds. In the real urban scene, usually, there will be a combination of two or more "urban image" elements, such as the Landmark company with the Node, the Path also act as the Edges which combine the Nodes or the Landmarks to contribute rhythm and decoration. Significantly, the patterns of urban image composition are certain and specific, not random.

**Aim and objectives of the study** This paper will discuss the patterns of "urban image" composition, its types and distribution in a certain historical city.

**Method** Based on the image survey of the "European district" (built by German colonists, 1897-1914) in Qingdao, China, the paper empirically constructs the system of urban image "Composite Pattern", and statistical of certain pattern types with the highest frequency. Meanwhile, inspired by the "picturesque theory"(Gordon Cullen) which emphasizes a series of viewpoints, continuous image, and the structured "mental landscape", the paper make an investigation on the connection and switching of the adjacent Composite Patterns, to find out the distribution laws of various "Patterns" in urban space.

**Findings** Revealing the laws of urban image structure, which benefit to get a better understanding the value elements and landscape organization with the historical cities.

**Conclusions and Implications** Compared with the "urban image (K. Lynch)" of the mental picture, the actual urban scene is more vivid and has a richer "sense of design", and its related research will also provide more direct reference for urban design.

# **CHANGES IN THE LANDSCAPE PATTERN OF THE NORTH BANK OF XIYUAN BASED ON DRAWING ARCHIVES (1669–1980)**

**Ms. Nan Zhang**

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## **Abstract**

The gardens of Beijing's Xiyuan have received widespread attention since the 1930s during the period of the Society for the Study of Chinese Architecture. In recent years the discovery of Yangshi Lei Archives and the "the Map of Government Offices in the Imperial Palace" has spurred further research into the layout of specific garden buildings. Based on six drawings from 1669, 1750, 1759, 1874, 1936, and 1980, combined with the latest laser scanning point cloud model, this paper compiles and compares the landscape relationship, architectural layout, and dimensions of individual buildings of the group over time. While sorting out the changes of the north bank of the Xiyuan, analyzed the different garden design ideas of the three emperors, Kangxi, Qianlong, and Guangxu at the same area in the context of the geographical pattern of the Xiyuan and the whole city of Beijing, and pointed out that the precious value about the Xiyuan case is that each new construction and reconstruction is based on a large scale urban pattern and a small scale architectural modulus relationship, with a very clear design concept. At the same time, through the comparison of drawing methods and expressions of different periods, analyze the diagrammatic structure and discuss the functions and meanings of drawings for the recording and presentation of landscape architecture in different technical contexts. At the level of Architecture Survey, promote the elaborate documentation of this important group of historical gardens, and at the methodological level, by combining pictorial and historical documentary analysis increase the inter-evidence relationship between the three types of research materials: physical, textual, and pictorial.

# **THE DIALOGUES IN THE REGENERATION OF METROPOLITAN HERITAGE CONSERVATION AREAS: CASE OF PINGJIANG AREA, SUZHOU**

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**Dr Gerhardes Johannes Beukes Bruyns**

*The Hong Kong Polytechnic University*

**Prof. Timothy Joseph Jachna**

*University of Cincinnati*

**Dr Yuanhong Ma**

*Shenzhen University*

## **Abstract**

In 2014, the Chinese Central Government earmarked fourteen Chinese cities with “red lines”, preventing further urban expansion. Listed as national famous historical and cultural cities in China, each of these fourteen cities contains run-down areas in its urban centre. The regeneration of heritage conservation areas (HCA) is a growing trend for future urban development, outlining specific protection strategies and spatial requirements.

The majority of such regeneration projects entail incentives driven by local governments. Linked to this, since the 1980s, urban governance has transformed from managerialism to entrepreneurialism practices. This transformation facilitates multi-stakeholder engagement in regeneration projects, and in particular, emphasising community engagement as a tool to assist with the transference of cultural values and the further promotion of sustainable development.

By examining morphological conditions and spatial parameters of the Pingjiang Area of Suzhou, this paper aims to explicate the realisation of multi-stakeholder collaboration in the regeneration process of Chinese metropolitan heritage conservation areas. The discussion will outline spatial frameworks, specific to collaboration-oriented regeneration projects and the needed morphological tools to implement regeneration strategies. Conclusions will analyse the appropriation and morphological tools associated with regeneration projects, drawing points to future research into urban morphology and city identity.

# **ISOCHRONAL 3D-STATION REALM MODEL AND MULTI-DATA BASED URBAN RENOVATION STRATEGIES IN TOD DEVELOPMENT, A CASE IN HEIFEI, CHINA**

**Prof. Yuan Zhu**

*Southeast University*

**Mr. Wang Hao**

*Southeast University*

## **Abstract**

With the development of TOD in China , the TOD based urban planning is becoming one of the most important layer during the comprehensive urban design and development. On the one hand, it aims to increase the value of existing urban land effectively by increasing the flow of people, and, on the other, to integrate the scattered and inefficient land for future efficient usage, thus gradually formed the model of TOD oriented urban renewal and development.

With the support of multi-dimensional data, this study takes Hefei feixi Station as an example to introduce the project optimization based on the data analysis of POI and space syntax in the early stage, and then combined with Urban Network Analysis (UNA) quantification operation, hoping to provide an 3D-station realm TOD urban renewal model with multi-data integration in the urban development.

In this study, the 3D-station realm TOD mode indicates that the multi-level renewal system could be organized around station and surround area by reconnecting together with the multi-scattered updating plot around the station. In the process of dynamic evolution, the optimization of the slow transport system calls for the new cognitive driving force leading to the future pattern of urban blocks, policy support, and urban morphology.

# **BALANCING THE QUALITY OF PUBLIC GOOD WITHIN THE DYNAMICS OF URBAN FORM. EXPERIENCES FROM THE REDEVELOPMENT OF RESIDENTIAL AREAS IN BULGARIA**

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## **Abstract**

The escalating speed of economic and technological development since the beginning of the 21<sup>st</sup> century is evident in the transformations of urban form and tissue worldwide and in Europe it takes the forms of both land-take and densification. The drivers behind these processes in Bulgaria have been strengthened by the dynamics of both political and economic contexts and were shaped by the radical rearrangements of the legal framework. With one of the most significant changes being the reframed balance between public and private, the attitude of the policy makers to this dichotomy has navigated the directions for urban redevelopment and the restructuring of urban tissue in Bulgaria for the last two decades.

This paper relates the quality of public good in residential areas to their morphological characteristics and aims at revealing the impact of changing paradigms in planning on urban form and land-use patterns in Bulgarian cities for the past three decades. It focuses on open public spaces and greenery, public amenities and services in an attempt to explain the challenge of balancing the quality of public good.

The paper compares the impact of the radical changes in the political, economic and legal context on the redevelopment of two different, and often considered opposing, generic forms of residential areas that shaped the urban landscapes in Bulgaria at the dawning of the mew millennium – the traditional housing neighbourhoods from the first half of the 20<sup>th</sup> century and the mass housing residential areas, called complexes, from the second half. It reflects on the morphological and structural changes from the perspective of quality of living and public good and evaluates the flexibility and adaptability of the typologies. It finally outlines the key relations between national context and city management that shape the skylines of the cities and the streetscapes of the neighbourhoods.

# TO SOLVE THE PROBLEM OF LOW UTILIZATION OF SPACE UNDER VIADUCT BY SHARING STRATEGY

**Ms. 雪霏夏**

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## **Abstract**

Urban streets have undergone three major transformations in the last 350 years, corresponding to three characteristics: visual aesthetics and development, transportation infrastructure and efficiency, shared streets. Many of the city's basic elements like rivers, streets, viaducts play a crucial role in the city. The convergence of elements gives the site its uniqueness and shapes the living behavior of its occupants. As a common urban element in the city, viaduct has a great influence on the urban spatial form. However, the space under the viaduct in China is lack of effective use and reasonable planning and difficult to pass efficiently.

This paper will analyze and summarize the adaptive renewal design of the space under the viaduct based on the urban morphological characteristics, aiming at the water landscape and space idle problems of the space under the viaduct at the intersection of Siping Road and Zhongshan North Second Road in Shanghai.

Based on the time-segment investigation and analysis of the space under viaduct at the intersection of Siping Road and Zhongshan North Second Road in Shanghai, various cases of space renewal under viaduct in foreign countries are specifically analyzed for different problems, and the activation direction and sharing strategy suitable for the characteristics of urban space in China are summarized by using typology method.

The corresponding sharing strategies are concluded from the perspectives of transportation sharing, landscape sharing, activity sharing and space sharing. The sharing tendency under the influence of different urban elements will also be summarized. Based on the existing practical experience and field research, this paper summarizes the space under the viaduct under the influence of different urban elements and proposes several feasible and easy to promote teaching strategies to contribute to the shared renewal of urban street space under the viaduct.



# ROUNDTABLES





## MURATORI, AYMONINO AND ROSSI: A COMMON RESEARCH

**Prof. Paolo Carlotti**

*Università degli Studi di Roma - La Sapienza*

### **Abstract**

The roundtable proposes to points out some common Urban Morphology research paths, that one can find starting from the works by Saverio Muratori and later by Carlo Aymonino and Aldo Rossi. Which have been developed into the Italian University since the second half of the 1950s, starting from those that Muratori offered to academic reflection. Aymonino and Rossi, collected the baton, reach at different design results. These are traces common path that has the roots in the France and German geography studies.

In the 90th years Rossi gives to French geographers the credit for having developed an important descriptive system, which represent "the *raison detre*" of the settlement, but he also their attributes the mistake of having let unexplored the perspectives of the glimpsed structure rules" (Rossi, 1995). What is – Rossi seems to suggest – the form that we must and can draw?

Afterwards Caniggia seem to give us, by the concept of "synchronic variant" of the building type and by the studies for the reconstruction of Venzone, a first response to the question. He distinguish the reversible form from the irreversible, that he recognizes in the transformation process of Urban form. He distinguishes the reversible form from the irreversible, that he recognizes in the transformation process of Urban form. He proposes on one hand a rebuild on the traces of original forms and on the other hand, a new mediate design between the different historical overlapped layers.

A solution that we can get by reconstruction of the process of transformation and giving back the place identity (where it was and how it was), other times, instead, finding by mediation in between the heritage process and contemporary requirements, the suggestions for a new architectural design.

# **URBAN FORM, ETHICS, AESTHETIC, AND HERITAGE: AN EXPLORATION OF NEW URBANITIES FOR A RESILIENT FUTURE**

## **Prof. Mirko Guaralda**

*Queensland University of Technology, Australia*

## **Prof. Malgorzata Hanzl**

*Lodz University of Technology, Poland*

## **Prof. Retno Hastijanti**

*Universitas 17 Agustus 1945 Surabaya, Indonesia*

## **Dr Sara Giroto**

*Drexel University, the United States of America*

## **Dr Leonardo Parra**

*Universidad de Los Andes, Colombia*

## **Dr Pongsakorn Suppakittpaisarn**

*Chiang Mai University, Thailand*

## **Abstract**

The relationship between people and their environment is more and more affected by global challenges and local dynamics. Climate adaptation, pandemics, and deep changes in our economic systems are morphing once more the way we think of our built and natural environments, such as cities, villages, farmlands, or wetlands. While we focus on equipping our communities to face an extremely complex future, we cannot forget the legacy of history and how to incorporate memories from our past in the new narratives for the present millennium. Urban Morphology provides us with theories and tools to inform the complex process of adaptation that our cities need to respond to our contemporary challenges, especially in contexts with conflicting interests and needs.

This round table will engage experts from across the globe to discuss how urban morphology can be used as a catalyst for different disciplines and different approaches, so to develop a people-centred approach to urban design addressing current and future challenges. The round table builds on the presenters' biennial collaboration in delivering a collaborative online charrette, engaging students from different universities, countries, and continents. Heritage conservation and management, climate adaptation, use and provision of public spaces, new economy and smart technologies, as well as social justice are nowadays often discussed as concurrent or competing agendas. The round table will discuss how urban morphology can bring together these different agendas in a creative and innovative way, in alignment with the UN-Habitat New Urban Agenda and the Sustainable Development Goals.

# **TYPOLOGY AND MORPHOLOGY: THE GENE OF CHINESE TRADITIONAL TOWN FORM**

## **Prof. Laura Pezzetti**

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## **Abstract**

Recently, China urbanization process is coming into a period of urban renewal, while traditional towns and villages are now threatened by the new processes of development and tourism consumption turning from the city to the countryside, creating pressure for settlements' change. New development is generally indifferent to existing natural and cultural landscapes, erasing every topographical and morphological sign, while preservation is mostly focused on the reconstruction of the "original" and ideal types, insensitive to historical palimpsests and to the urban value of built heritage.

While the study of Chinese urban form has achieved prominence in recent decades, still little accurate, systematic and comparative fieldwork has been undertaken. Besides, most studies reflect a weak tradition of "reading" the built landscape in its syntactic and semantic relation among "built facts" and by ordering and interrelating the superposition of different historic traces, whether they configure a homogeneous accomplished town form or more often a composite broken one.

The round table aims at the conceptual exploration of theories, tools, case studies and scientific outcomes for a comparative reading of Chinese Traditional Town Forms. The round table would like to provide the main question of research epistemology and methodology, to search what is the contact point between analysis and design.

In round table discussion, we will share the first archive of the historic towns and villages surveyed, investigated and decoded by us, to capture the gene of Chinese traditional town form, its constitutive laws and potential in a co-evolutionary and culturally sustainable development.

The integration of historic-structural studies and typo-morphological research on Chinese towns promises to shed light on the wider significance of concepts and methods developed in western schools while, symmetrically, contributing to stir new interpretative concepts valid for western contexts as well.

# CONVERGENCES OF URBAN MORPHOLOGY (UM) AND ARTIFICIAL INTELLIGENCE (AI)

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## **Abstract**

Urban morphology (UM) studies the physical form of cities. Today the physical form extends into cyberspace, a virtual domain created with programming and software. Everyday life has become increasingly infused with, and mediated, by software: Rob Kitchin and Martin Dodge define 'codespace' as the transduction or modulation of physical space through software, as a virtual-physical assemblage. In this 'odespace' defines an intermediary space of programming and machine code sandwiched between the physical and virtual city. Cyberspace is a multi-layered virtual domain. There are 'digital twins' or virtual replicas of the physical city. Codespace has layers of programming or machine code understandable to software engineers and computational machines. Artificial intelligence (AI) inhabits this invisible domain as programmes that solve problems, learn, and self-improve.

We are in a midst of a new revolution in machine learning with 'neural nets' capable of understanding human speech and written language and analysing content on images and videos. The neural nets can semantically parse scenes on images recognizing objects, creating scene graphs, and describing content with text. However, specialized neural nets for urban morphology do not exist. Neural nets can recognise artefacts from specific historical ages or learn about architectural styles only if they are supervised by experts. To create urban morphological architectural intelligence that can help with morphological research or morphologically informed urban design practices, urban morphologists need to translate their analytics and practices into software specifications. Creating specialized neural nets for urban morphology requires expertise in software engineering and programming effort and seems far in the future, but the International Seminar for Urban Form can play a profound role in debating urbantech, needs for intelligent tools and reaching to computational science and technology. This round table will present geneologies of UM and AI aiming to create synergistic convergence between the two disciplines.

# **URBAN DEVELOPMENT AND REVITALIZATION: A MULTIDISCIPLINARY PERSPECTIVE. FROM COUNTRIES TO INDEPENDENT REGIONS AND METROPOLES**

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## **Abstract**

A few years ago, I was invited to Poland by some young activists, who were asking the government to provide housing for the young generation. They told me; young people cannot marry and have children, instead many have to live with their parents at home.

Many of them were very interested in an early article by Chris Alexander entitled 'Grassroot Housing.' This article contained principles of how to get affordable housing, one of which was to avoid loans with interest and instead start a piecemeal process. You build according to the money that you could save each year plus donations and no-interest loans. My main response to this request was to develop a prototypical housing project, similar to other projects in my office.

At that time, a government housing agency, who was sympathetic to the young housing advocates, had invited me to give presentations and discuss the possibility of providing housing including their capabilities based on government policies and support. My 4-5 day meeting in Warsaw was too short to come to a conclusion and a deal. It would have been best if the government housing could have supported the younger generation by developing an individual pilot project so that both sides would get what they want.

At this point, the main idea for the ISUF Roundtable is to take up the conversation and see where things are and what reasonable options are available for the original idea of developing a pilot housing project for the younger people in Poland. Several ISUF members will participate in the discussion including 2-3 members of the initial initiative of young Polish people, who obviously would have to be invited. With the new green necessities and initiatives, the world might have changed a little and asked for new action.

# **NINETEENTH CENTURY URBAN TISSUE IN CONTEMPORARY CITIES: BETWEEN PERMANENCE AND TRANSFORMATION**

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## **Abstract**

Throughout the history of cities, regular systems of rational spatial form have been developed, which have been generally defined as “urban grids” –. Searches for the origins of the use of geometric urban forms in cities point to many directions as they are found in diverse contexts such as Roman, Hellenistic, Greek, Assyrian Chinese and even pre-Columbian. Despite being found in very ancient urban forms, high-density, urban grids are part of contemporary urban culture. Especially, nineteenth-century high-density urban tissues are present in many contemporary cities across the world. This panel proposes a relational discussion on how these patches have been transformed or maintained and which aspects of the urban tissue are resilient to contemporary transformation, carrying both meaning and permanence towards the twenty-first century. By presenting case studies from the Americas and Europe, the session aims to discuss how much of the industrial city urban form remains vivid today and the impacts of this particular type of urban tissue in increasing qualitative urbanity. We intend to present an analysis of nineteenth-century tissue samples from Sao Paulo, Rio de Janeiro and Belo Horizonte in Brazil, as well as Detroit, The Hague, Granada, Cordoba and Malaga. Regardless of their geographical location and social, economic, political and cultural contexts, are high-density nineteenth-century urban tissues flexible enough to absorb and channel all sorts and scale of urban transformations?



# POSTER PRESENTATIONS





# HISTORICAL URBAN OUTPOSTS: REVITALISING CONTEMPORARY CITIES FROM THE CEMETERIES

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## Abstract

**Background** The historic urban structure this contribution intends to investigate is generally "other" than the historic city centre, it is a heterotopy: the cemetery. The interdisciplinary research this contribution is referring to is funded at the authors' institution and seeks new possible scenarios for cemeteries.

Modern "cities of dead ones" are not transformed by new urban structures, while the former influence the shape of the latter. In most European historical cities, cemeteries have represented urban outskirts participating in the processes of shaping the contemporary city mostly consisting in sprawling suburbs.

**Aim-objectives** Enclosure walls, out of a legal condition, symbolize the exclusion of these heritage although the originally imposed distance from "the city of the living ones" has been urbanised. Out of this, (together with cultural, economic and technical reasons) to avoid the loss of a fundamental material and immaterial heritage, cemeteries have the urgent need of being rethought in both their urban and social meanings.

**Method** The search for good practices in Europe and in NY has been an important phase of the methodology developed. After tracing some new tendencies both referred to design and to immaterial heritage, a focus on a case study has been the second step: the Neapolitan cemeteries system of the Poggioreale Hill.

**Findings** Through an inductive approach, in-between spaces, urban fringes, vacant buildings and disused urban systems are pointed out as possibilities to revitalise the cemetery. Design has been a research tool for testing how to conceive a contextual redevelopment since the empowerment of "the city of the dead".

**Conclusions-Implications** By "mending" the margins between the two cities, cemeteries should be recognised as new possible centralities for the contemporary city. Cemeteries should be conceived as cities for the living ones who remember the dead. Cemeteries could be assumed as infrastructures for health, culture and art.

# STRUCTURE AND COLLAGE TWO PATHS TO THE CREATION OF URBAN ATMOSPHERE

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## Abstract

**Aim of the review :** The understanding of the "*durability*" of the city has two different perspectives in the Italian : First, "*durability*" is dominated by the diachronic urban tissue, with structural characteristics, proposed by the pioneers such as Muratori and Caniggia. Second, "*durability*" is dominated by monumental buildings and places, with collage features, emphasized by Rossi and his followers. In fact, whether it is structure or collage, they are used as theoretical perspectives or design methods, which are discussions of the urban "atmosphere" under the premise of acknowledging the value of diachronic and synchronicity of the city. This article attempts to illustrate the theoretical and methodological differences between the two paths and their respective influences on the future, and try to find a bridge between them.

**Search and review methodology :** This paper attempts to illustrate how the two theoretical logics of structuralism and collageism work on the issue of the "atmosphere" of cities through literature search, theoretical comparison, and case analysis

**Findings and Conclusions :** Urban tissue or monumental architecture, the identification of the urban primary element has essential difference. Many scholars label Muratori and Rossi as structuralist masters and collage masters. Respectively, These are also two different paths to the urban atmosphere. Therefore, the discussion undoubtedly has its great academic value, especially for the protection of historical cities and the practice of urban renewal. From the perspective of systematic analysis of Urban Morphology, If you take the British Concern School as a reference, whether from the synchronic analysis or diachronic analysis, We agree more with Muratori and Caniggia's structuralist approaches. But if we all take "reasonable atmosphere" as the goal of architectural design or urban design, then structural emphasis or poetic collage are good methods. Both of these approaches require a careful analysis of the urban morphology and a precise understanding of the urban atmosphere.

# RESEARCH ON THE SPATIAL CAPACITY OF UNIVERSITY CAMPUSES IN GUANGZHOU CITY FROM THE PERSPECTIVE OF URBAN MORPHOLOGY

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## **Abstract**

The establishment of university campuses in Guangzhou city can be traced back to the 1950s and 1960s. With the implementation of Guangzhou urban renewal policy, the city's campuses will also be developed together with it. In the era of stock development, in order to solve the contradiction of limited campus capacity and the gradually increasing number of students, it's aimed to propose a strategy to adapt to the future space renewal and renovation of Guangzhou urban university campuses. This thesis selects 8 universities in the urban area of Guangzhou city, use the research method of urban morphology to extract the plane layout, building area, street space, number of teachers and students, etc., so as to compare the indicator requirements in relevant domestic regulations in China, and compare and analyze the spatial form and capacity of several universities in the urban area of Guangzhou City. Through analysis and research, the number of teachers and students, building density and space capacity has reached the upper limit. The subsequent development of campuses should focus on the development of stock space and the adjustment and optimization of internal space, giving priority to maintaining its teaching function and supporting the talent training plan with a larger public service area. Based on this, it shall discuss the general idea of the large scale renewal and renovation of university campuses adapting to the urban development of Guangzhou city.

# RESEARCH ON THE SPATIAL FORM OF UNIVERSITY CAMPUS IN GUANGZHOU URBAN AREA BASED ON NEIGHBORHOOD SCALE AND DENSITY

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## **Abstract**

University campus space is an important part of the urban renewal process in Guangzhou. The university campuses in Guangzhou's urban areas were first built back in the 1950s and 1960s. With the development of the times and changes in people's travel patterns, the correlation between the scale of student teachers, pedestrian and vehicular traffic, and the scale and density of the neighborhoods within the campus has objectively changed.

This paper analyzes the spatial patterns of university campuses in the urban area of Guangzhou by using neighborhood scale and density, and takes the policies and developments related to urban renewal in Guangzhou as the base point to make a comprehensive analysis and evaluation of the university campuses in the urban area of Guangzhou with the question of which neighborhood scale and renewal transformation methods are suitable for them.

In this paper, we extract the spatial planes of the university campuses in the urban area of Guangzhou, analyze the neighborhood scale and density of the university campuses, and quantify the balance of people and vehicles on the streets.

It is found that the relationship between the neighborhood scale and density of university campuses in the early urban areas of Guangzhou and the current scale capacity of university campuses has reached the upper limit.

The follow-up should focus on the internal structural adjustment and renewal and transformation optimization of the structure and scale of the neighborhood system for the development of the stock space. In line with the overall urban regeneration strategy of Guangzhou, priority is given to the strategy of safeguarding the teaching function and supporting the talent cultivation program, so as to explore the general strategy for the renewal and transformation of university campus neighborhoods in the process of stock development in the urban area of Guangzhou

# STUDY ON CLUSTERING OF URBAN FORM CONTROL UNITS BASED ON RISK THEORY

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## Abstract

With the increasing threat of new types of risks represented by global climate change, the "uncertainty" emphasized by the risk theory has become the most urgent problem to be faced and considered in modern urban planning and governance. As the main element of the basic structure of the city, the urban form control unit should reflect the sensitivity, vulnerability and resilience of the city to deal with new types of risks, but the analysis on this issue needs to be further improved. This study selects Guangzhou, China as the object, with reference to the relevant theories of risk society and risk city, trying to start from the three aspects of social group attributes, renewable energy application potential and ecological water storage potential, to classify and analyze "risk-based" Guangzhou urban form control units. The results show that the Guangzhou urban form control units have a high degree of characterization of residents' cohesion and micro-water ecosystems, while the acceptance of renewable energy is still at a relatively early stage. Therefore, the capacity of Guangzhou to deal with new types of risks needs to be strengthened on the basis of full social participation. This study helps enrich the connotation and practical value of urban form theory.

# **SPATIAL JUSTICE AND WORN-OUT URBAN TEXTURE: WHAT ARE THE MOST IMPORTANT FACTORS IN URBAN TEXTURE RENOVATION? (EVIDENCE OF VAHIDIYEH NEIGHBORHOOD IN TEHRAN)**

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## **Abstract**

**Background** Urban worn-out textures have faced various challenges. The burnout has penetrated their structure and has caused some issues. It has led to spatial inequality among the urban districts, and the worn-out neighborhood in structure, services, and function has unequal conditions in comparison to the another neighborhoods. Hence, spatial justice tries to create justice and compensation of defects in worn-out textures. The Vahidiyeh community in eastern Tehran has chosen to study as an area with old fabrics and outdated features.

**Aim and objectives of the study** This study attempts to express the priority of renovation through a spatial justice approach to the Vahidiyeh community.

**Method** This study adopts the descriptive-analytical method, the data has been gathered by questionnaires, the sample is 382 which is calculated by the Cochran formula at limited statistical populations. In the data analysis, we used the factor analysis method, which was run in SPSS 25. In this study, we have used 26 indices to cover our issues.

**Findings** The findings describe six factors that have an impact on the Vahidiyeh renovation, which we named in the associated sub-index. These Factors are "accessibility and spatial utility", "safety and health", "physical features", " Density and accumulation ", " Rights and laws ", and " Supportive and financial features" accordingly, these factors have covered 65 percent of Variation, while two first factors cover 35 percent of the total variation.

**Conclusions and Implications** In conclusion, in the transformation process of Vahidiyeh by spatial justice approach, it's preferable that emphasize accessibility and spatial utility indices alongside safety and health indices.



# **CONSTRUCTION OF FLOOD CONTROL PLANNING MODEL FOR LINJIANG HISTORICAL AND CULTURAL TOWNS: TAKING DAXU ANCIENT TOWN AS AN EXAMPLE**

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## **Abstract**

In the stage of rapid development of global warming and urbanization, the contradiction between the production and living needs of citizens and the frequent waterlogging is prominent. The existing basic research on flood disasters focuses more on cities and watersheds, and less on suburban revitalization. However, under the guidance of the traditional idea of selecting the location of camps, China has built a large number of historical and cultural ancient towns along the river, all of which face huge flood risks. The frequent occurrence of flood disasters continues to threaten the production and living space of residents, making it difficult for residents to lack happiness in life and difficult to protect the historical heritage of ancient towns. At the same time, due to the limitation of financial resources and manpower, the efficiency of rescue organizations has been greatly reduced, making the protection of ancient towns in a more difficult situation. Taking Daxu Ancient Town in Guilin City, Guangxi Province as an example, this paper introduces in detail the use of architectural space, protection response methods and emergency response modes in the face of flood disasters, proposes the protection and response strategy of ancient towns for flood disasters and constructs a protection model, provides a basis for the planning and management of ancient town protection and flood prevention and emergency rescue, and reduces the negative impact of waterlogging disasters in ancient town areas on the lives of ancient town residents and cultural and historical protection.

# **A RESEARCH STUDY ON HISTORICAL PRESERVATION AND URBAN RENEWAL OF THE BUND**

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## **Abstract**

The Bund became the first area of urbanization in Shanghai in 1843. After experiencing the golden construction era in the 1930s, it formed a unique urban form of 'high-density enclosed blocks'. In recent years, with the focus of Shanghai's urban development shifting to urban renewal, the Bund area is also gradually entering a new urban renewal cycle, facing challenges for space expansion and functional improvement, and also facing the problem of mutual restriction between historical preservation and spatial growth.

Therefore, in the renewal process of the Bund area, it is necessary not only to meet the spatial growth brought by the changing functions, but also to maintain its unique historical urban form and morphological characteristics. However, some projects in the 1990s ignored the unique urban form of the Bund, destroying street interfaces and spatial forms. It is urgent in this cycle to establish a more targeted and operable framework of historical preservation to balance and stabilize the impact and changes brought by the renewal and development projects in the historical area.

This study will take the Bund as the research object, review the historical process of its urban form and the formation of its urban spatial morphological characteristics, take 'block-street-building' as the research framework, analyze its multi-level spatial morphological characteristic elements, and establish its historical protection framework in the process of urban renewal. Further, this study will take the renewal projects of three blocks in north of the Bund area as a case study, analyzing how the historical preservation framework could play an effective role in the renewal process, so as to deal with the uncertainty of development projects in various scattered blocks, and to maintain the stability and continuity of the urban form of the Bund historical area.

# **BREAKTHROUGH THE ANCIENT GUANGZHOU: TYPO-MORPHOLOGICAL PERSPECTIVES READING THE LONG BUND AREA (1888–1937)**

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## **Abstract**

This paper uses typo-morphology methods to analyze the Long Bund area in Guangzhou between 1888-1937, started building during the transition from ancient to modern times of Guangzhou, which is also between the two morphological periods. The historical research shows pressure accumulated behind the Long Bund such as the pursuit of new urban image, economic transition and the city's transformation from land to sea. New construction technology also supported the breakthrough of ancient Guangzhou city from the interface of land and water. There was artificial guidance by successive governments in the development process, however due to the social chaos, it shows the characteristics of natural growth.

This research shows how typo-morphology theory works in complex social and economic environment. Several fringe-belts could be found here moving southward with the sedimentary Pearl River shoreline through thousand years. Until the modern era, based on the municipal engineering of embankment, the Long Bund fringe-belt surpassed the ancient Guangzhou city and became the most prosperous center area. Classical urban morphology distinguishes basic buildings from specialized buildings, but in the built plots of the Long Bund, specialized buildings occupy a large proportion and are the basic elements in urban tissue.

The study reveals that the Long Bund area still corresponds with the classical urban morphology theory, which is the continuation of the sequence pattern of Guangzhou southern fringe-belts zone. The accumulation of social and economic pressure precedes the spatial expansion, this eliminated the stagnation in fringe-belts. Meanwhile, water system deeply participates in the construction of urban form. The building typology analysis shows that even specialized buildings here could be found designed under the same typology series with basic buildings. There was historical continuity in the method and plot. This paper will help understanding the complex mapping relationship between socioeconomic background and urban form.

# TOD-LED URBAN EVOLUTION: AN ANALYSIS OF THE RENEWAL STRATEGY OF LONDON KING'S CROSS

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## **Abstract**

**Background** The urban development trend is changing from "incremental development" to "stock improvement". At the same time, the large-scale construction of rail transit makes us further consider the role of TOD in the evolution of urban structure.

**Aim and objectives of the study** The London King's Cross Regeneration Program provides a sample of urban renewal. This paper reviews the development of King's Cross and analyzes the characteristics of its different renewal stages. From the perspective of urban evolution, it attempts to summarize the methods of urban renewal guided by TOD from the aspects of resource reorganization, spatial catalyst, slow travel value, compound business forms, and interest coordination and expounds on the significance of TOD for urban stock renewal.

**Method** Research design, Research sample, Quantitative comparative analysis.

**Findings** The renewal process of King's Cross in London shows that TOD's dynamic guidance has played a continuous role in promoting the urban renewal of the area. From the completion of King's Cross Station to the opening of the Eurostar International Railway and the connection of subway lines, the development of transportation functions inevitably promotes the evolution of urban structure.

**Conclusions and implications** The development of TOD strengthens its renewal significance as an urban catalyst, and the development of rail transit stations will support and optimize the land use structure of surrounding areas. The resulting complex business formats, a good ratio of land use functions, and a more complete transportation system are the basic needs of urban renewal and upgrading. At the same time, through the integration of scattered space, functions, and resources, the boundary between the station and the surrounding urban space is broken, which will eventually affect the comprehensive development of the city in more dimensions.

# ROADS, PLOTS AND BUILDING TYPES IN THE IMPLEMENTATION OF URBAN RENEWAL PLANNING: A CASE STUDY OF CANTON, CHINA IN THE EARLY 20TH CENTURY

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## Abstract

**Background** Canton (Guangzhou in southern China), with history of over 2,000 years, underwent tremendous changes around the early 20<sup>th</sup> century. Inspired by Western urban planning theories, the urban planner presided over large-scale urban renewal, including demolishing city walls, repairing, and expanding roads and building public gardens.

**Aim and objectives of the study** Through the case study, this research explores the process, intrinsic motivation and leading factors of changes in urban morphology during the implementation of urban renewal planning.

**Method** The research is based on case study method. By arranging the *Guangzhou Jingjie Tu* (Map of land divisions and boundaries) and other historical maps, historical documents and photos, the research takes the information of the streets, plots and building types as the main sample, within range of civic center area at that time. The analysis focuses on the changes in the land property, measure of plots and building type.

**Findings** The road construction leads to two different situations. One is to widen the original road (including the demolished city walls), and the other is to open up a road that did not exist due to political speculation of creating a city axis. The former contributed to a new building type “QiLou” (骑楼 arcaded street house), with a special kind of title deeds as compensation of relocation household. The latter is based on the plots of government property, due to expected appreciation of land value and reduction of land acquisition cost.

**Conclusions and Implications** Urban planners regarded urban public space (mainly public gardens, boulevards, and avenues) as main controlling factors in urban planning. The mass-produced new building types is closely related to the changes in land property and measure caused by the urban planning.

# RESEARCH ON THE INFORMAL URBAN SPACE AND THE METHODS OF URBAN REVITALIZATION: BASED ON TWO CHINESE HANDSCROLLS IN QING DYNASTY

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## Abstract

Informal urban space is an important part of the vitality and diversity of an urban area, which have a close relationship with the rise-and-fall of itself. The bottom-up way to build and use the city has a long history, but it seems easy to transfer or just disappear and hard to get the official permission. The contradictory aspects could also be found in some historical paintings. As the outstanding examples of the “genre painting” drawn by court painters in Qing Dynasty in China, 12 paintings of *Emperor Qianlong’s Southern Trip of Inspection* not only contain series of informal space about everyday urbanism, but also show the coexistence and equilibrium between the informal and formal space. Taking the second and sixth rolls as an example, this paper analyzes the spatial structure, building characteristics, environmental details and crowd activities, and summarizes the ways to represent regionalism and diversity. In a further comparison of the two rolls, the commonality is revealed as the methods of urban design, which is evaluated in two cases of urban revitalization located in the city of Xuzhou and Jincheng respectively. This research finds that “movable” space and behaviors play an important role in the creation of vitality in different ages and locations, as a necessary supplement to formal and fixed informal space and behaviors. Without mobility and economics, the informality pursued by contemporary planners will lose its soul.

# RESEARCH ON THE EVOLUTION OF HUMAN SETTLEMENT IN THE WATERY AREA OF SHAOXING

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## **Abstract**

China has long history of water environment modification, which plays a crucial role in the morphological changes of ancient cities and villages in water rich areas.

This research reveals the relationship between water-oriented and city-village morphological changes at regional, urban, block and building scales.

The research object is Shaoxing Region of China, which has a history of human-water interaction of 2500 years. Based on ancient books and ancient maps, using mapping and data analysis to establish the morphological relationship between the changes of ancient city-village and water environment.

The results show that, on the regional scale, there is a coupling relationship between the ancient city-village form and the water environment of Shaoxing. A model based on the dynamic balance between human and water is formed, which is operated by the construction of water conservancy projects and characterized by the changes of water system and city-village forms. On the urban scale, the evolution of central landscape, traffic organization and block function are rooted in the aforementioned dynamic adjustment model of human-water. Water conservancy projects often become spatial nodes, which play a prominent role in creating the sense of local memory. On the block and building scale, the public water system undertakes a variety of short-term residential activities, realizing the compound and efficient utilization of public space. The long-term symbiotic life with water makes the residential buildings a unique "I" plane and produced various ways of interactive construction with the water.

The historical form of city and villages with water environment in Shaoxing area is not a simple juxtaposition relationship, but a multi-level coupling system formed in the long-term interaction and has become a germinal container of local features. Its coupling relationship and internal order should be paid attention to in the protection and renewal of ancient cities in water rich areas.

# **INFLUENCE OF DECISION-MAKING FACTORS AND MECHANISMS ON URBAN HOUSING REDEVELOPMENT UNDER THE BACKGROUND OF "STOCK RENEWAL": A CASE STUDY OF XIAOSONGTAO DISTRICT IN NANJING**

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## **Abstract**

The drastic changes in cities and social spaces brought about by China's urbanization in the past four decades have resulted in the continuous erosion and destruction of the traditional urban tissue, and the construction of new cities and districts has gradually tended to be homogeneous. The "stock renewal" redevelopment model proposed by China in the new urbanization policy in 2016, and the decision-making factors for urban renewal were gradually diversified. Only by fully recognizing the formation and evolution of its "hidden" urban tissue can we achieve the sustainable development goals of urban revitalization and improving the happiness of urban life.

This paper selects the Nanjing Xiaosongtao district, which has undergone multiple renewals, as the research object, and aims to explore how economic and housing policy driving, residents' participation and community planners' involvement interact with each other and influence the process of urban redevelopment since the "stock renewal" policy. Through the comprehensive use of morphological typology, multidisciplinary interdisciplinary analysis methods, a specific study is carried out on the evolution process of urban space and residential space, and the process mechanism of multiple decision-making factors acting on the investigation of household entry in the early stage, communication and guidance of community self-renewal in the middle stage, and design and construction in the later stage is discussed. It reveals the interactive influence of top-down policy driving, bottom-up resident participation and planning and design throughout the whole process on the redevelopment process of urban tissue. It is pointed out that it is the multi-party participation that promotes the formation of the complex urban tissue in this area, while retaining the diverse space and crowd structure of the area.

It provides a new design idea and operation model for future urban redevelopment and revitalisation, and also provides a reference for urban redevelopment from a multi-disciplinary perspective.



# **RESEARCH ON REDEVELOPMENT SOLUTIONS FOR URBAN DIVERSIFIED DISTRICT - TAKING THE XIAOSONGTAO DISTRICT IN NANJING, CHINA AS AN EXAMPLE**

**Ms. Zixuan Liu**

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## **Abstract**

The large-scale urbanization in China in the past decades has brought about drastic changes in urban and social space. Under the new urbanization goal proposed in 2016, urban renewal has changed from "incremental urban development" to a redevelopment model of "Existing urban renewal and development". New problems arise, such as how to maintain the vitality of the original community and meet the various needs of the resettlement of aboriginal people in the redevelopment of urban diverse districts. Only by fully understanding the formation and evolution of its "hidden" urban tissue, and putting forward corresponding practical solutions, can the sustainable development goals of urban revitalisation and urban life be improved.

This paper selects the Nanjing Xiaosongtao district, which is diverse and has undergone several renewals, as the research object, and aims to explore how the political, economic, social and housing policies as well as the planning and design of architects participated in the research and practice of the redevelopment of this site in the latest urban renewal project. Through the comprehensive use of morphological typology, multi-disciplinary analysis and other methods, the concrete research is carried out on the street redevelopment mode of the plot and the "efficient" renewal scheme of residential space, and the operation rules behind the renewal mode were discussed. Thus, the feasible project plan for the renewal of the district with the diversity of urban morphology, building types and inhabitant types is revealed. It is pointed out that it is the joint participation of multiple parties that promotes the formation of an efficient urban regeneration tissue in this area, while retaining the diverse space and crowd structure of this area.

This paper provides new practical solutions and operation models for future urban and architectural renewal, and also provides a reference for urban redevelopment from a multidisciplinary perspective.

# RESEARCH ON RESILIENT STRATEGIES FOR URBAN REDEVELOPMENT

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## **Abstract**

Urban redevelopment process is facing the issue of lacking reserved land, unmatched land property, complex property rights and the planning lag, which slow the process of urban renewal. Therefore, it is necessary to introduce resilient strategies at the beginning of urban development to improve the adaptability of cities so as to deal with the uncertainty of future urban redevelopment and establish a sustainable urban renewal mechanism. The paper starts from three aspects: the difficulty of urban redevelopment, the introduction of resilient strategies and the exploration of practice. A series of resilient development strategies such as planned development unit (Pud), performance-based planning, incentive zoning, transfer of development rights (TDR), white site and reserved site are systematically summarized. Then through the cases of Hudson Yards District in New York, Maruchi Station in Tokyo, this paper demonstrates how resilient strategies can guide urban redevelopment.

# **RUSSIAN INFORMAL SETTLEMENTS: MORPHOLOGY AND REASONS BEHIND THE SPREAD**

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## **Abstract**

As the Russian saying goes, there is nothing more permanent than temporary. The present work emphasises the contradiction between interpretation of informal urbanisation between the state, real estate powers and the locals and its consequences in two regions: Moscow and Krasnodar, Russia. Both chosen territories have high opportunities for economic investment into infrastructure and housing development. However, they are reversed in terms of administrative control and power. These two cases illustrate the dependence of informal practices and housing morphology on regional institutional contexts in the post-soviet space. Using administrative data about the location, time period of registered illegal settlements, and occupied land characteristics, the housing typology will be classified through geospatial analysis by size, scale, age, location, nature of use, and the visibility of (il)legality within the city. Connecting these findings with data about the economic, demographic, and real estate municipal dynamics, conclusions about the reasons behind the spread of discovered types of informal housing are made. By content analysis socio-political relations, data from the official and unofficial, local and federal social networks and mass media are analysed for the discussions of informality. It is discovered that the nature of cooperation between tenants differ: in Moscow region there are detached houses at most, disconnected to each other, having no infrastructure, and located at the periphery; whereas in Krasnodar region they are self-made, overcrowded settlements located inside the cities. At the core of the problem there is a disproportion of power and unwillingness of the state to develop informal urban areas: both sides (administration and ordinary people) do not seek in each other a negotiator. As a result, the government demolishes almost all the founded houses with law violations without litigation, while mistrust of locals grows each year, embedding itself in the improvement of forms of illegal development.

# **THE REVIVAL OF THE FRINGE BELT: A STUDY ON THE EVOLUTION OF THE URBAN MORPHOLOGY OF BOVISA, MILAN**

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## **Abstract**

The fringe belt refers to the area formed on the urban fringe during periods of slow urban growth or interruption. When the city resumes growth, the fringe belt will form a pattern embedded in the urban area. Due to the different formation principles, the road structure and architectural texture of the fringe belt are obviously different from the urban areas that develop stably under normal circumstances. Generally speaking, due to its special nature, the development pace of the fringe belt is obviously slower than the rapid speed of the expansion of the central city. However, as an inseparable part of the city, its redevelopment has great potential in urban development.

This paper selects Bovisa of Milan as the research object. As the fringe belt formed in the early days, it has now become an important urban area of the city and has retained its unique characteristics of the layout. By redrawing the historical maps, this study sorts out the development process of the Bovisa area under the background of urban changes in Milan since 1880, and decomposes them into three components: road system, architectural texture and green space to analyze the morphological evolution process of Bovisa area, trying to explore the changing laws and motives of urban morphology in the revival of the fringe belt. The study found that the unique road system in the Bovisa area laid the foundation for the formation of diverse block forms, improved the block's ability to accommodate a variety of architectures and spaces, and enabled it to quickly adapt to the subsequent new developments in the process of urban development, which have an important impact on the redevelopment of the inactive regions of the fringe belt.

# **SOCIAL DETERMINANTS BEHIND WATER TOWNS IN PEARL RIVER DELTA, EVOLUTIONARY ANALYSIS BETWEEN GEOGRAPHIC TYPOLOGY AND URBAN MORPHOLOGY OF JIANGNAN HISTORICAL WATERTOWNS IN NORTHERN ZHEJIANG, CHINA**

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**Mr. Congyue Zhou,**

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## **Abstract**

Over the past century, water played vital role in the urban system in Jiangnan, where water was beneficial for agricultural irrigation and inland river navigation in the agricultural ages. The development of watertowns in Jiangnan region has tight relationships with their geographic environment, of which territorial character is declining due to urbanization and social transformation. This paper establishes a morphological overview of typical historical watertowns evolution process from the early 20th century to nowadays, and intends to find out how spatial structures of watertowns interact with water in the influence of urbanization. Using the Conzenian methods, we summarize five types of watershed topography in northern Zhejiang, which is one of the relatively developed areas in Jiangnan region. Then in the view of geomorphology and urban geography, maps and photographic data in four years of 1918, 1969, 2000, 2022 are vectorised to outline the two-dimensional variations of water bodies and building forms of 19 traditional watertown samples. Tracing watertown's evolutionary process suggests that water forms and urban forms vary in particular geographic contexts and provides support for the contemporary design and construction of water-orient habitats.

# **THE VARIETY WITHIN ORDERED URBAN STRUCTURE: THE TRANSFORMATION OF MORPHOLOGICAL CHARACTERISTICS IN SIMING DISTRICT FROM 1920 TO 2020**

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## **Abstract**

With the rapid expansion of Chinese cities, the urban form in Xiamen has been undergoing drastic changes. Siming District, a historical commercial center in Xiamen, is studied to interpret morphological changes between 1920 and 2020. The purpose is to make a chronological analysis of morphological characteristics, focusing on the changes of street structure, plot patterns, layout of composite buildings. The principal aim is to understand how urban physical form have evolved over time and how they have influenced the morphology of the city. The link between urban design canon and urban morphology is also to be proposed through the morphological analysis. This paper illustrates the changes of physical form in blocks and plots. It explains the growing trajectory of Siming District during the last centenary, through the graphic representations of street structure and building typology. It argues, despite the ordered urban structure is well reserved, the variety occurs in the form of mass development and volumetric typology only in certain blocks. The findings show that market economy and planning policy directions collaboratively play a part in facilitating morphological evolution. The resultant urban form strongly suggest these two conflicting factors shapes the current urban form: variety within ordered urban structure coming up as another choice of new text urbanism.

# **RESEARCH ON OPTIMIZATION ALLOCATION OF SUPPORTING FACILITIES FROM THE PERSPECTIVE OF LIVING CIRCLE- A CASE STUDY OF WUJIANG DISTRICT, SUZHOU**

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## **Abstract**

(Background)Under the background of no longer building closed communities in principle and implementing open residential policies, the balanced and reasonable allocation of supporting facilities is crucial for the implementation of this decision.(Aim of this study)Based on the living circle theory, this paper sorts out the relevant research on the supporting facilities of the living circle. (Method)Taking Wujiang District of Suzhou City as a research case, it analyzes and summarizes the current problems through the investigation of the current situation of the supporting facilities of the living circle in Wujiang District. This paper proposes the principles, methods and strategies for the optimal allocation of four-level supporting facilities including residential neighborhoods, 5-minute living circles, 10-minute living circles, and 15-minute living circles. (Conclusions)This paper explores the configuration of supporting facilities in the living circle of Wujiang District, and provides a reference for the preparation of control detailed planning and overall planning for open residential areas in the future.

# RESEARCH ON QUANTITATIVE EVALUATION AND INFLUENCING FACTORS OF THE VITALITY OF NEWSSTAND – TAKE BEIJING FOR EXAMPLE

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## Abstract

Newspaper kiosks used to be cultural Windows of cities, but in the data era, they face many challenges of survival and problems of future renewal. At the micro level, this study obtained the total number of transactions of 25 existing kiosks and the number of transactions of each derivative function through field research, and carried out a quantitative evaluation on the vitality of kiosks based on this. The paper further analyzes the explanatory power of five parameters, including population density, commercial function, topological form, geometric form and street walkability, on the vitality of the existing newsstands. At the macro level, based on Baidu Street View time machine, this study obtained the spatiotemporal differentiation data of 277 newsstands in the western part of Beijing, which covers an area of about 160 square kilometers (2013-2021), and compared the difference of the above five parameters of the death and the existing newsstand space in an eight-year time span. In this way, we can reveal the reasons that affect the vitality of the newsstand for a long time. It is found that the walkability and population density are the main factors affecting the vitality of newsstands, both in the existing newsstands and the newsstands within a period of eight years. In terms of each function, the correlation between the number of transactions of newspapers and periodicals and the number of transactions of life and retail functions and the two parameters of walkability and commercial function density are different. On this basis, the paper puts forward some strategies, such as function updating and space positioning updating, in order to provide reference for the demolition, construction and urban renewal of the newsstand in the future.



# **SPATIAL RESILIENCE IN DAILY LIFE – COMPARATIVE STUDY ON SPATIAL GOVERNANCE OF BEIJING HUTONG DISTRICT BEFORE AND AFTER**

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## **Abstract**

The commercial vitality of the community reflects the rigid needs of local residents in daily life. Under the dual influence of the deconflict and the COVID-19, the loss of vitality is exposed while the urban landscape is improved, which affects the convenience of residents' life. Based on Baidu Street View time machine and field survey data, this study analyzed the recovery of business forms in nine hutong districts covering 13km<sup>2</sup> in the central urban area of Beijing, and analyzed their distribution rules and changing trends (2015-2020) by using space syntax model. According to the statistical results, in addition to the clinic, all kinds of community businesses have decreased significantly, and the business forms of main and non-staple foods, vegetables and fruits have recovered relatively high, which reflects the toughness of community basic functions. In spite of the overall significant decrease, the places of community business gathering and distribution on each street segment are very stable. Compared with the analysis results in 2015 and 2020, the distribution of the total number of community commercial shops in each street segment has a high correlation with the integration parameters of the standardization Angle in the radius of 1000 meters, and the rule is more obvious after the rectification, which reflects the toughness of the place brought by the spatial connection. Through the quantitative statistics and model analysis of the recovery amplitude and spatial distribution location of different business forms, this study aims to provide the basis for humanistic precision community governance and data-oriented urban design.

# THE INTEGRATION PATH OF THE HISTORY AND LIFE OF URBAN SPACE

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## **Abstract**

It is the general requirement of urban renewal and construction in China during the 14th Five-year Plan period to strengthen urban cultural characteristics and improve the quality of urban life.

At present, there are some theoretical and methodological contradictions between the enhancement of urban characteristics and the improvement of urban life, and it is necessary to explore and solve the method of the integration of the history and life of urban space.

This paper takes Xuzhou “cultural axis space” as an example, by using literature analysis summarized urban historic space, field research summary of the urban living space, finally adopts the method of graphic analysis on the historic elements of urban cultural axis space and life factor integration analysis, In order to solve the integration of cultural heritage and public life in urban renewal.

Through the analysis and research, it is found that the integration path of history and life of urban space can be the overall construction of urban cultural environment, the integration of modern urban life into urban historical places, and the integration of urban cultural elements into urban public life.

Through constructing the path of the integration of the history and life of urban space, it provides ideas for the construction of urban characteristic culture and the improvement of urban life in urban renewal.

# SCALE AND COMPOSITION, A STRATEGY OF REDEVELOPING THE HISTORIC AREA IN SHANGHAI OLD TOWN

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## **Abstract**

The old town of Shanghai is the cradle of Shanghai city and still at the center of the grand urban pattern. Being an important historical and cultural area, together with its surrounding district formed the core of the city's economy, public activity and culture. The renewal of the old town will also be a crucial component of the establishment of Shanghai as a distinct global city, which combines difficulties from all aspect of the economic sustainability and cultural feature and no longer can be avoided in the following development.

Complicated and specific issues could be located in the renovation and design of the old town. And this study mainly hopes to discuss the realization of the cultural feature and the urban fabric in the process of redevelopment, focusing a certain area of the old town. The area selected was the block between *Wangyun Road* and *middle Henan Road*, in the center of the old town, which significantly influenced the continuity of the urban fabric, as the object of the research. Through detailed mapping and field visits, we explored the variegated and spontaneous spatial characteristics of the town's fabric and the unique local humanistic structure reflected in between. And searching for a way to achieve the integral development and cultural continuity in the context of local urban renewal.

Through research, we found that in the old town of Shanghai, which has the characteristics of *Jiangnan watertown* landscape and *Lilong Shikumen* residence, scale and composition are important factors for understanding the spatial and humanistic structure of this area, corresponding to the richness of morphological texture and the anfractuous spatial network. On this basis, attempt to propose a method of typifying different scales and combinations, thus, achieve the goal of guiding the following practice of the local urban redevelopment.

# **IMPACTS OF DAILY SUPPLY ON THE LAYOUT OF RETAIL STORES IN OLD COMMUNITIES: A CASE STUDY OF SHAPINGBA STREET, CHONGQING, CHINA**

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## **Abstract**

The study of spatial layout of small businesses in old urban communities is of great significance to improve the basic guarantee of residents' life. Chinese cities have entered the stock development stage, and community micro renewal has become a hot spot in planning practice. In this context, the allocation of small facilities has become a research trend. As the main supplier of daily necessities for residents in old communities who lack the conditions for large-scale commercial construction, small commerce plays an important role in the supply of urban public services. Based on the complex network analysis method, this paper constructs a three-level supply and demand network of purchase point, small commercial point and residential point, transforms the multi vertex network into a single vertex network or analysis, obtains the type characteristics, distribution characteristics and coupling characteristics of small commercial supply and residential demand, and puts forward planning suggestions on this basis. The data analysis shows that the type of small business is closely related to the layout and the type of residential area, but not closely related to the type and layout of purchase points, which is caused by the purchase mode of small business. Through the analysis of coupling characteristics, it is considered that small businesses provide a large supply of daily necessities in the community. It is suggested that the layout of small businesses should be considered in the planning of public facilities, and targeted spatial optimization strategies should be adopted in combination with the characteristics of the community.

# **ANALYSIS OF LAND EXPANSION IN NEW URBAN AREAS BASED ON FRACTAL THEORY: A CASE STUDY OF LIANGJIANG NEW AREA IN CHONGQING, CHINA**

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## **Abstract**

In the relatively underdeveloped western region of China, the national new area is an important stimulus for regional development. Driven by the policy support, the city expanded and evolved rapidly, and completed the urbanization process of high proportion of land in just a few years. The existing research on the evolution of the new area focuses on the average land output value, public service level and population attraction, and the research on the land use structure is less; The research method pays attention to the mathematical analysis of statistical data and the calculation of economic benefits, and the research on land use form is less. In order to explore the change law of land use structure in the new area and reveal the dynamic characteristics of regional land use classification, taking Liangjiang New Area of Chongqing as an example, this paper analyzes the land types from 2010 to 2020 based on fractal theory, including calculating the land use structure of each time slice, as well as the fractal dimension and stability index of various land uses. The results show that the expansion speed of urban land gradually slows down, all kinds of land show the phenomenon of temporal and spatial agglomeration, the stability coefficient gradually increases, and the land structure and spatial structure tend to be stable. The fractal dimension of non construction land decreases gradually, and the difference of construction land decreases.

# RESEARCH ON THE RESILIENCE ASSESSMENT METHOD OF URBAN FORM BASED ON "RESOLUTION"

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## **Abstract**

In his seminal work, Conzen recognized that the evolution of different morphological types of towns has different persistence, which reflects the resilience of the physical environment to the pressure of change. Based on the breadth of the concept of form, scholars have begun to combine the typo-morphology with resilience theory. On the one hand, typo-morphological method has great potential in assessing the resilience of urban form. On the other hand, there is a need to combine typo-morphological methods and resilience assessment to promote urban form practice. Therefore, from a resolution perspective, this paper discusses the methodological ideas of urban form resilience assessment. Firstly, the experience and limitations of the current research on morphological resilience assessment methods are briefly described, and the ideas of morphological resilience assessment are discussed by typo-morphology. Secondly, combined with the current research works of the urban morphology as a socio-ecological system, the concept of "resilience assessment unit" is proposed, and its four levels: plot combination unit; block unit; urban area and urban unit are expounded, including delimitation method and elements. Finally, it points out the advantages and limitations of dividing the resilience assessment unit based on the plot as the basic unit.

# **COMPARATIVE STUDY ON THE SYSTEM OF FLOOR-AREA-RATIO TRANSFER FOR HISTORICAL DISTRICT PRESERVATION AND RENEWAL: GUANGZHOU'S AND TAIPEI'S EXPERIENCES**

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## **Abstract**

The emergence of floor-area-ratio transfer system originated in the USA in the 1960s. As a means of balancing interests and constraints, it was applied to the renewal and preservation of historic urban forms. Taking the practices of Taipei and Guangzhou as examples, this paper analyses the development process and influencing factors of the floor-area-ratio transferred system, compares the differences between Taipei and Guangzhou, and draws the following conclusions.

In Taiwan, the original intention of introducing the floor-area-ratio transfer is to protect the development rights of owners, which have been limited by the protection of historical blocks. The floor-area-ratio transfer in Taiwan is a formalized system, and the social groups and interest groups that rely on it have a great influence on the development of the system. Finally, a thriving floor-area-ratio transfer market has formed in Taiwan, involving many market participants. In Guangzhou, the floor-area-ratio transfer is an informal system arrangement that satisfies the financial balance of the developer with protective conditions. It is the transfer between different plots within the same developer. The planning committee system has become an option to compensate for the lack of legal sources.

# **A STUDY ON THE REAPPLICATION OF JACOBS' URBAN VITALITY THEORY IN URBAN RENEWAL DECISION MAKING-TAKING SHAM SHUI PO, HONG KONG AS AN EXAMPLE**

**Ms. Dan Ye**

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## **Abstract**

Urban renewal is a necessary path for urbanization to advance to a certain stage. China's urban construction has moved from the era of increment to the stock, and the old-urban areas of many cities have entered the renewal stage. Compact and vibrant urban space is an important urban design goal under the renewal orientation, and it is urgent to explore how to re-energize or continuously enhance urban vitality. Jane Jacobs proposes that rich urban diversity enables cities to generate vitality, which has important theoretical support and practical application in the context of current urban renewal needs. However, these old areas are characterized by higher density, more diverse spatial forms, and more complex urban diversity. Therefore, the re-application of Jacobs' diversity and vitality theory based on the case of American cities in the renewal of Chinese high-density cities needs to be further extended and optimized. This paper first reviewed Jacobs' theory of diversity and vitality and took Sham Shui Po in Hong Kong, a representative of Chinese high-density cities, as an example to check whether the theory is still applicable. This paper combines quantitative analysis based on geographic information systems and on-site survey to analyze the typical characteristics of the Sham Shui Po in four aspects: mixed use, short blocks, mixed-aged buildings and density, and finally we propose new elements and methods when applying Jacobs' theory to analyze similar high-density urban areas. The study concludes that: i) the specific functions of study areas influence residents' behaviors and can be analyzed using big data; ii) the time span of mixed-age buildings, the degree of mixing, and the specific functions should be considered when using this theory; and iii) the measurement range of population density should be adapted to the spatial characteristics of the city, considering the walkable distance of the residents.



# **INTERPRETING THE EVOLUTION OF "VOID" AS THE TOOL FOR HISTORIC URBAN LANDSCAPE READING AND ENHANCEMENT IN FORMER CONCESSION AREA: THE CASE STUDY OF TIENTSIN**

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## **Abstract**

Following the extended cognition of historical urban landscape, former concession area considered as the unique zones with certain historic and artistic value are undergoing a tremendous conservative change. Current projects targeted the refurbishment on significant cultural relic and design reinforce on character buildings. These economic service-oriented transformation raised the issue on environmental rupture, gentrification and the decline of landscape diversity. Giving the glance at the variety of void spatial forms, the aim of this study is to integrate the neglected formation process of park, garden, plaza as well as the cul-de-sac into urban construction in modern time meanwhile clarify their dominating role in historic urban landscape image. Take the whole concession area of Tianjin in modern times as the case intended to emphasize its inseparable structural scope. Using historic maps of multiple periods as discussion base, superimpose historical images and textual information to sort out continuous evolution further launched a comparison study on different concessions, finally extract diagrams interpreted this transformation process in masterplan. Through these multi-analysis, we found conversion of voids into public facilities like park or gardens occurred due to the enclosure of public buildings. In turn, those facilities maintained surrounding road network and plots form stable, represented by the restriction of construction size and density. On the other hand, "void" in residential zone involved into a three-hierarchies schema ordinating "Hangdao(inner lanes)" with outside boulevard and community's public area. In sum, this paper reveals the structural role of "void" in the original concession area, demonstrates that the external spaces such as parks (including sports fields), boulevards and lanes have continuous historical and cultural interpretive function similar as architectural elements. This formative accentuation on void eventually lead to a landscape tool bridging the individual architectural enhancement with creative urban project.

# **SPATIAL ANALYSIS AND PROTECTION OF TRADITIONAL VILLAGES BASED ON SPATIAL SYNTAX: A CASE STUDY OF LINLUO VILLAGE OF THE DONG ETHNIC GROUP IN SANJIANG, GUANGXI**

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## **Abstract**

After a long period of accumulation of agricultural society, traditional villages have bred unique material space and cultural connotations. As a typical representative of traditional villages, Dong villages have unique geographical location and rich material and cultural characteristics, and their spatial protection and cultural inheritance have far-reaching significance and value. Affected by the current urbanization construction, traditional villages have suffered different degrees of destruction. As a representation of the social culture of the village, the protection of the material space greatly affects the development and inheritance of the village. In this paper, spatial syntax is used to quantitatively analyze the spatial morphology of Linluo Village from the aspects of village integration, connection value, control value, and comprehensibility, and summarize the characteristics of its spatial form and the internal spatial characteristics of village buildings. It is concluded that its spatial development lacks planning and capital intervention is excessive, and it is necessary to balance the contradiction between social development and physical space through systematic planning from space to management. Through the analysis of the village space, the article provides a reasonable spatial optimization plan in order to better protect the material space of the village and better inherit the traditional culture.

# **DISCUSSION ON THE EFFECT OF TOPOGRAPHIC BARRIER ON THE MORPHOLOGY OF CHINESE MOUNTAINOUS CITIES: TAKING SOUTHWEST CHINA AS AN EXAMPLE**

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## **Abstract**

China is a mountainous country and mountains account for 69% of the country's land area. Therefore, relevant scholars believe that the second half of Chinese development with high quality urbanization is in the mountainous region. And topographic barrier in this mountainous district have been produced unique morphology of mountainous cities which also have negative impacts such as excessive construction costs and information blocking. So we take mountainous cities in southwestern region which own the most mountainous cities in China, as the research object to analysis how to achieve high-quality development with mountainous region in China. Firstly, we summarize the types of topographic barrier such as horizontal cutting, vertical limitation and integrated guidance to form four morphological types of mountainous cities including clump, ribbon, radial, and group over time by figure-to-bottom relationship and typological analysis. Then this interweaving of natural and artificial built environment forms a generalized spatiotemporal evolution model of mountainous cities. Finally, this evolutionary process has also formed spatial effects of different scales from region, urban and block perspective, respectively. Therefore, this article expects to introduce a Chinese unique mountainous urban space, providing a reference for development of mountainous cities in other countries.