



| DOCONF/2021 |
| **FACING POST/SOCIALIST** |
| **URBAN HERITAGE** |
| PROCEEDINGS |



FACING POST-SOCIALIST URBAN HERITAGE

8-9th October 2021, Budapest, Hungary

<http://doconf.architect.bme.hu/>

Proceedings of the 4th international doctoral–postdoctoral conference organized by the Department of Urban Planning and Design, Faculty of Architecture, Budapest University of Technology and Economics (BME), and the Foundation for Urban Design, Budapest.

urb/bme

DOCONF/2021

FACING POST/SOCIALIST

URBAN HERITAGE

date /

8-9th October 2021, Budapest, Hungary

venue /

1111 Budapest, Műegyetem rkp. 3, 2nd floor, room 10

organised by /

Department of Urban Planning and Design

Faculty of Architecture / Budapest University of Technology and Economics (BME) / <https://urb.bme.hu/>

and

Foundation for Urban Design, Budapest

opening by /

Melinda BENKŐ, habil. PhD / Chair of the conference series

Associate Professor at the Department of Urban Planning and Design, BME & Head of Standing Committee on Urban Planning and Design, Hungarian Academy of Sciences

Prof. György ALFÖLDI, habil. DLA / Dean of the Faculty of Architecture

Professor of the Department of Urban Planning and Design, BME

Prof. András FERKAI, DSc / Head of the Committee on Architecture, Hungarian Academy of Sciences

Professor emeritus of the Moholy-Nagy Art University, Budapest

36 lectures presented in 6 consecutive sessions /

mass housing / Melinda BENKŐ habil. PhD (BME) / Prof. Richard KLEIN PhD, HDR (ENSAP de Lille) / David TICHÝ habil. PhD (TU Prague)

shrinking cities / Bálint KADÁR PhD (BME) / Prof. Zorica NEDOVIĆ-BUDIĆ PhD (UIChicago, UCDublin) / Angelica STAN habil. PhD (IAUIM Bucharest)

the fifties / Kornélia KISSFAZEKAS PhD (BME) / Endre VÁNYÓLOS DLA (TU, S-HUT Cluj) / Federica VISCONTI PhD (UNINA Naples)

resilience / Árpád SZABÓ DLA (BME) / Daniel KISS PhD (ETH Zürich)

re-collective (with a workshop on Oct 10) / Julianna SZABÓ PhD (BME) / Aleksandra DJUKIĆ PhD (TU Belgrade)

leisurescapes / Domonkos WETTSTEIN PhD (BME) / Prof. Lubica VITKOVA PhD (TU Bratislava)

36 lectures presented by /

doctoral students, candidates, or post-doctoral researchers who are architects, landscape architects, and/or planners arriving from different architectural / planning doctoral schools of 13 countries (Czech Republic, Estonia, Germany, Hungary, Italy, Netherland, Slovakia, Slovenia, Poland, Romania, Russia, Serbia, Spain)

detailed programme /

<http://doconf.architect.bme.hu/>

The conference is in English, and participation for the audience is free. Everyone is welcome!

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FOREWORD

The bi-annual DOCONF series provides a comparative overview of current doctoral research in architecture, urban design, urban planning, and landscape architecture focusing on the urban challenges related to the inherited physical – built and natural – environment of post-socialist cities in Central and Eastern Europe (CEE) and post-Soviet Asia. The organizers, the BME Department of Urban Planning and Design and the Foundation for Urban Design wish to promote international cooperation facilitating academic network building for scholars active in these specific fields of research through meeting in person to teach and learn from each other.

DOCONF2021 proposed six thematic sessions: mass housing neighbourhoods, shrinking cities, the Fifties, resilience, re-collective, and leiscapes. Each session was prepared, proofread, and moderated by members of the scientific board, who are university teachers, and in most cases also doctoral supervisors either at the BME Department of Urban Planning and Design, Budapest, at a university in another post-socialist city or in a Western country (see the call of sessions on pages 8-21).

DOCONF2021 featured successive sessions consisting of presentations and discussions. Even though 2021 has been strongly affected by the COVID-19 pandemic, the Chairs, besides the Hungarian faculty of the hosting department, arrived from the Czech Republic, France, Italy, Romania, Serbia, Slovakia, Switzerland, and the USA. The 36 selected speakers, doctoral students, candidates, and post-doctoral researchers (holding a doctorate degree for less than 5 years at the time of the conference) study at various doctoral schools of architecture or planning in thirteen countries.

I believe that the DOCONF conference series is an important step towards learning about each other's research fields, comparing research methods, giving presentations, and writing academic papers published in this open access e-Proceedings.

I would like to thank you all for being active in this year's DOCONF experience, working on (preparing or proofreading) papers, presenting and taking part in the discussions in Budapest, on October 8th and 9th, 2021. And last but not least, I would like to say a big thank you to my colleagues and students at the BME Department of Urban Planning and Design for their contribution to the success of DOCONF2021.

I hope that we continue the DOCONF series, this exceptional international doctoral meeting related to challenges of the post-socialist urban heritage.

<http://doconf.architect.bme.hu/>

See you in 2023!

Budapest, 11th October 2021

Dr. Melinda BENKŐ habil. Ph.D.

Chair of DOCONF series



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Department of Urban Planning and Design, FA-BME, Hu

MASS HOUSING

mass housing neighborhoods




Chairs:

Dr. habil. **Melinda BENKŐ** PhD / Budapest, H
BME Department of Urban Planning and Design / mass housing research platform / European Middle Class Mass Housing

Dr. habil. **David TICHÝ** PhD / Prague, Cz
FA CTU Department of Building Theory / UNIT architekti Architectural Studio / Housing Estates What's Next research platform

Prof. **Richard Klein** PhD, HDR / Lille, F
ENSAP Lille / docomomo France / docomomo international



Throughout the world, mass housing was the answer to access decent living conditions after the Second World War and is still a used built answer to the housing shortage in many countries. Modern and contemporary theory and practice shaping these housing developments seem to be global, but the urban form, architectural characteristics, technical details, ownership system, space division, everyday life, etc. are varied locally. In post-socialist cities, most of the housing estates were publicly owned, centrally planned, built, and managed developments, but after the privatization process their conditions changed and they have a lower ability to integrate current housing requirements. Nevertheless, mass housing neighborhoods represent highly specific areas of cities demanding conceptual and thoughtful public policy decisions regarding their complex sustainability and livability.

Faced with their actual status, the housing needs, aspirations of the inhabitants, or the climate issues and the pandemic situation, what are the possible changes in this urban heritage? How not betray the social and egalitarian ideals which motivate the construction of these neighborhoods? And what challenges lie ahead for mass housing?

The abstract proposal should focus on a relevant theoretical sub-topic, as demolition / renewal, modern / contemporary, shrinking / growing, high-rise / low-rise, density / intensity, sustainability / livability, public / private, whole / part, planned / informal, monofunctional / multifunctional, etc. or/and show comparative study of key locations or/and one case study from a post-socialist city. Criteria for case studies are that at least one example presents post-war (after 1945) mass housing neighborhood from a post-socialist city, with. min 500 dwellings realized in min. two buildings realized for middle and/or lower class. The best knowledge of the types and forms of collective housing must go through all the data enabling these architectures to be characterized: sponsors, designers, companies, urban situations, and development projects, construction techniques, references and influences, receptions, transformations, and critical analysis of contemporary situations.

SHRINKING CITIES

a chance for sustainability and smart transformation in shrinking cities




Chairs:

Dr. **Bálint KÁDÁR** PhD / Budapest, H
[BME Department of Urban Planning and Design](#) / [DANURB+](#) / [ResearchGate](#)

Dr. habil. **Angelica STAN** PhD / Bucharest, Ro
[UAUIM Department of Landscape and Urban Planning](#) / [ResearchGate](#) / [LinkedIn](#)

Prof. **Zorica NEDOVIĆ-BUDIĆ** PhD / Chicago, IL & Dublin, Irl
[UIC CUPPA](#) / [ResearchGate](#) / [LinkedIn](#)



One of the paradoxes of globalization has been the polarization of urban environments: on one hand, the world's growing population concentrates in large cities; on the other hand, smaller cities and towns have experienced a demographic decline and labor migration. Consequently, shrinking cities are facing an accelerated spatio-social and cultural deterioration. In the paradigm of growth and accumulation, the chances to recover from shrinkage are small, as the affected cities are involved in a vicious cycle of regression and loss of attractiveness and capacity to recover.

Very strong recovery projects and policies are needed. The successful examples implemented so far (Oswalt and Rieniets 2007, Hollander, 2009) demonstrate that capitalizing on decline to set aside land for recreation, agriculture, green infrastructure, and other non-traditional land uses will enable shrinking cities „to reinvent themselves as more productive, sustainable, and ecologically sound places” (Hollander, 2009).

The pandemic of 2020, has triggered a new urban dynamic. Large cities suddenly have become vulnerable and fragile because of their density and centrality, losing their attractiveness. Attention has turned to the neglected and chaotic peripheries of the big metropolises and to the small, isolated and sparsely populated towns. These declining places are suddenly seen in another light, re-opening the discussion about the need for deeper changes in urban life and the chance to re-invent these places by a different approach to resources and opportunities.

With the above premises, we invite contributions to address the following topics in a Central and Eastern European context:

- examples of successfully integrated strategies for shrinking cities,
- unique characteristics of shrinking cities by region or historical circumstances,
- matching of planning actions and the types and / or causes of shrinkage,
- adaptive re-use of abandoned/declining infrastructures and venues in shrinking cities,
- case studies of projects building on values associated with peripheral or shrinking places,
- opportunities and trends in shrinking cities induced by post-pandemic adjustments..

THE FIFTIES

'socialist in the content'? 'national in the form'?




Chairs:

Dr. **Kornélia KISSFAZEKAS** PhD / Budapest, H
BME Department of Urban Planning and Design / [LinkedIn](#)

Dr. **Endre VÁNYOLOS** DLA / Cluj, Ro
Sapientia Faculty of Technical and Human Sciences

Dr. **Federica VISCONTI** PhD / Naples, I
UNINA Department of Architecture



The state socialism after World War II, can be divided into marked sub-periods of which the '50s is perhaps the most controversial one. Maybe this decade saw the biggest contrast between the common belief in the need for social changes and the political will disguised by dictatorial demagoguery. In this context, the role of the architects was interpreted more broadly by contemporary political leaders. They were convinced that the designers could influence social mentality, by creating the 'life-frame' of the new society.

1952: G.M.Orlov, a Stalin-award-winning Soviet architect, visited Budapest to help Hungarian architects formulate the new urban planning and architecture according to the social-political order versus 'cosmopolitan modernist ideology'. The instructions were as a summary of the political expectations, which included guidelines such as the transition to collective work, the widespread use of standardized designs, mass housing construction, the awareness of the urban significance of new public buildings, the roles of the new urban spaces and streets, the importance of the silhouette effects in the urban design; professional tasks related to the introduction of socialist realism. Presumably in every country of the Eastern Bloc was a "Comrade Orlov" who mediated Soviet directives amicably and oversaw its implementation. However, the transposition of centrally formulated ideas into local practice can show differences.

The main topic of the session is to formulate the contradictions of the 1950s, among others:

- soviet directives versus local tendencies;
- professional commitment to individual architecture versus the politically expected direction;
- among noble ideas, such as equal opportunities, housing as a fundamental right for the wider strata, and consequently the relationship between mass housing and quality;
- to deny modernism and to formulate new stylistic features in contrast to the formal features of socialist realism.

The aim of the session is to objectively evaluate the urban architecture and architectural events of the decade, to analyze the relationship between the idea and reality, paying attention to their current context.

RESILIENCE

how resilient can cities really be?




Chairs:

Dr. **Árpád SZABÓ DLA** / Budapest, H
BME Department of Urban Planning and Design / CZSZ studio

Dr. habil. **Maciej LASOCKI** PhD / Warsaw, Pl
WUT Chair of Urban Design and Country Landscape / WUT studies in English

Dr. **Dániel KISS** PhD / Zurich & Basel, Ch
ETHZ Network City Landscape / XM Architekten



Our exposure to the new coronavirus reminds us how fragile the normality of everyday urban life can be in states of crisis. Cities and their subsystems—such as their infrastructures, public spaces, and housing—are increasingly becoming subject to systemic disturbances. Be these induced by disease outbreaks, global warming, economic emergencies, or socio-political tensions, an important question to ask remains, how urban systems perform in weathering these disruptions.

With response to the current pandemic, the hosts of this panel suggest inquiries into the post-socialist city's resilience, with particular regard to its public spaces' ability to accommodate and continue to function in the face of disruptions. We do so keeping in mind that the very genesis of post-socialist urbanization is also associated with an elemental shock, namely with the shift from party-state systems to market economies.

Within this context, we would especially like to focus on the consequences of Eastern European and post-Soviet urban renewal practices of the past decades. We are interested in the diversity, vitality, adaptability, and appropriability of the resulting urban spaces and, thus, how different redevelopment models determine the future resilience of cities.

This panel invites papers in one of the following themes:

- regional and global contextualization of post-socialist urban transformation;
- investigation of socialist and post-socialist models of urban renewal;
- East-West comparisons concerning renewal practices;
- studies into the resilience of cities and their subsystems (e.g. public space, housing, public and commercial services);
- foresights of post-pandemic urban recovery investigated in the context of urban resilience.

We welcome all kinds of methodological approaches, ranging from historiographies, single case studies, and comparative analyses, to project-based theses, participatory observations, field researches, and all other qualitative and quantitative methods.

RE-COLLECTIVE


new collective experiences in the central and eastern european housing sector



Chairs:

Dr. **Julianna SZABÓ** PhD / Budapest, H
[BME Department of Urban Planning and Design](#) / [Cohousing Budapest Association](#) / [E-Co-Housing](#)

Dr. habil. **Aleksandra DJUKIĆ** PhD / Belgrade, Sr
[UNI-BE Department of Urbanism](#) / [LinkedIn](#) / [Researchgate](#)



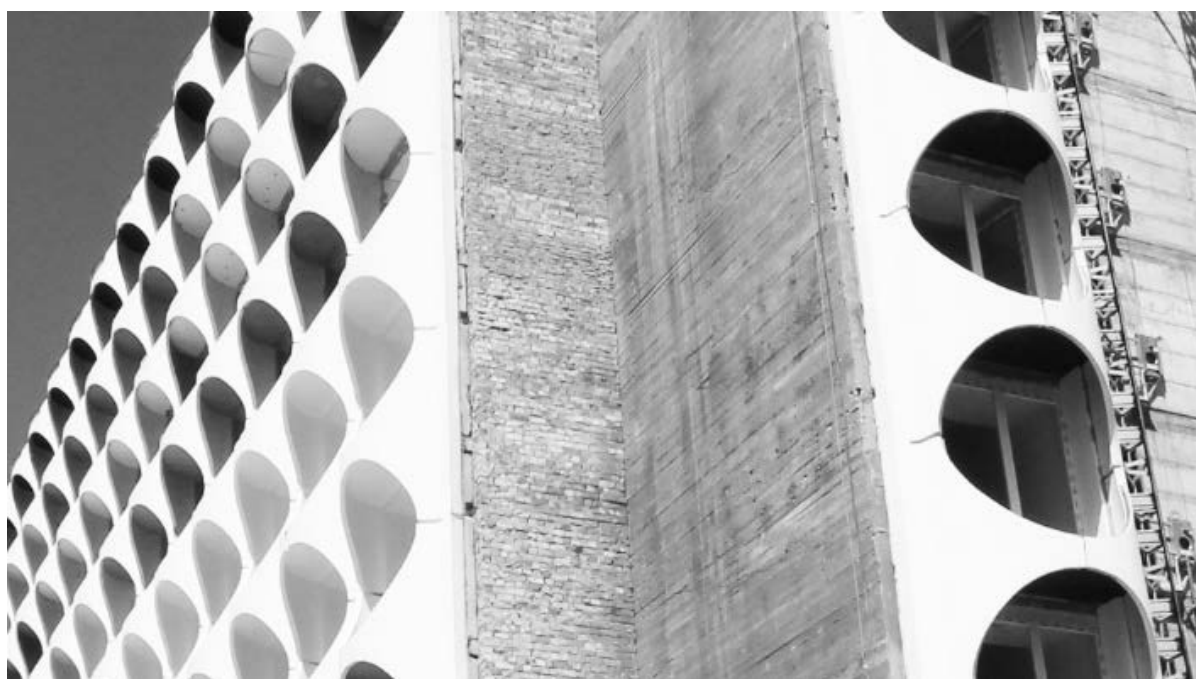
As a result of (re)privatization of the housing stock, the growth of social disparities, and the one-sided housing policies, a distorted housing market has developed in most of the cities in the post-socialist countries, generating problems in affordability, mobility, sustainability, etc. Community housing initiatives could be a solution to these issues in many aspects. Despite their low proportion on the housing market in Western Europe, many researchers see community housing as a realistic and promising alternative to the traditional urban housing sectors, and especially to the single-family model. They could offer an alternative to urban real estate developments or the state or municipal social rental housing sector, melted to a minimum in these countries. However, experience has shown that the co-housing movement faces accumulated difficulties and show little practical results in the post-socialist region.

Community housing experiments show a very heterogeneous picture in their philosophy, architecture, organizational and financing forms, community building methods, depending on the different housing traditions, legal framework, and housing policy trends of the countries. In this session, we are looking for researchers who are partners in founding an east-west European co-housing think-tank. Our topic is the analysis of the new experiments, the general obstacles to community housing experiments, and the creation of new models. We are waiting for abstracts on the following topics:

- the use of community housing models in urban development, especially in urban renewal processes,
- urban development, real estate policy, and housing policy instruments supporting community housing,
- participatory planning methodologies in community housing models,
- financing models of community housing models, methods for affordability,
- organizational and social models of community housing,
- experiences of co-housing development from the socialist period,
- co-housing for ageing population and multigenerational community,
- is co-housing the future of design?
- co-housing – sustainable community.

LEISURESCAPES


post-socialist transformation challenges on seasonal landscapes



Chairs:

Dr. **Domonkos WETTSTEIN** PhD / Budapest, H
BME Department of Urban Planning and Design / research & education platform

Prof. **Lubica VITKOVA** PhD / Bratislava, Sk
STUBA Department of Urban Design and Planning / personal webpage at STUBA



Freedom appeared on a new scale but with a different meaning in eastern and western landscapes after the Second World War. While in the West, freedom emerged in the form of the right to leisure, in the East, holidays became a means of consolidating social policy. The increasing infrastructure capacity has opened up new opportunities for domestic tourism and recreation for a wider range of society, while it became a showcase for socialism for international tourism. However the building process transformed the landscapes spectacularly, the buildings were designed just to meet the functional needs of seasonal tourism focusing on a short period of land use. Simple and lightweight, experimental buildings soon became widely popular and deeply positioned in the collective memory as landmarks.

After seventy years, new trends in landscape transformation are taking place. Post-socialist resorts are now being shaped by privatization and tourism concepts instead of socialist ideology. Formerly modern tourist monuments today struggle with problems of heritage protection and rehabilitation. The buildings, once built for seasonal purposes, should now be redesigned to meet the needs of year-round tourism. At the same time, communal memory still looks with nostalgia at the modern architectural monuments of early mass tourism.

The new forms of freedom pose new challenges to the post-socialist leisure escapes. How have new tourism trends transformed landscape identities? What rehabilitation challenges and tools are emerging in the renewal of tourist facilities? In what ways is it possible to define new concepts for post-socialist leiscapes?

We look for answers at different scale levels: In addition to landscape-scale processes, we are also looking for answers to the problems of resort settlements and the architectural heritage. Abstracts can build on theoretical concepts, case studies, process interpretations and spatial comparative analyzes among post-socialist countries or between Eastern and Western Europe.



PROGRAMME & CONTENTS

DOCONF2021 / FACING POST-SOCIALIST URBAN HERITAGE

4th doctoral / postdoctoral conference organized by the Department of Urban Planning and Design, Faculty of Architecture, Budapest University of Technology and Economics, Hungary / 8th-9th OCT 2021

venue: BME 'K' Building / 1111 Budapest, Műegyetem rakpart 3. 2nd. floor 10
for the abstracts and further information please visit:

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CONFERENCE PROGRAM

8th OCT / FRIDAY

8:30-9:00 REGISTRATION

9:00am – 9:30am OPENING

Dr. Melinda BENKŐ
Chair of DOCONF / H

Prof. György ALFÖLDI
Dean of the Faculty of Architecture, BME / H

Prof. András FERKAI
Head of the Committee on Architecture, Hungarian Academy of Sciences / H

9:30am – 11:00am: THE FIFTIES

Chairs: Dr. Kornélia KISSFAZEKAS / Budapest BME H & Dr. Endre VÁNYOLÓS / Cluj Ro & Dr. Federica VISCONTI / Naples I

Ana BORANIEVA / Barcelona E / MK
In the Shadow of Skopje's Railway Artefact: The Interscalar Character Of The Artefact As A Condition For Constructing New Centrality. (pp84-95.)

Ekaterina GLADKOVA & Prof. Valerii KOZLOV / Irkutsk Ru
Urban planning concepts for the renovation of microdistricts in the 1950s-70s: the result of a workshop in Irkutsk (pp138-147.)

János KLANICZAY / Budapest BME H
Measuring the architectural experience: comparing the '50s and '70s during urban walking tours (pp194-205.)

Bárbara Mylena DELGADO da SILVA & Dr. Eszter KARLÓCAINÉ BAKAY / Budapest MATE H / Br
People's Park: An overview from examples of Post - Socialist urban parks in Europe (pp106-115.)

11:30am – 1:30pm: MASS HOUSING NEIGHBORHOODS

Chairs: Dr. Melinda BENKŐ / Budapest BME H & Prof. Richard KLEIN / Lille F
& Dr. David TICHY / Prague Cz

Maciej SWIDERSKI / Amsterdam NI / PI

Heritage-inspired local knowledge as a tool for planning the future of late-modernist housing estates (pp400-411.)

Réka MÁNDOKI & Dr. John ORR / Cambridge UK / H

Learning from the past - How to create sustainable mass produced buildings today? (pp264-273.)

Jitka MOLNÁROVÁ / Prague Cz

Bottom-up transformations of modernist housing estates (pp308-319.)

Sofia BORUSHKINA / Milano I / Ru

Top-Down Large-Scale Urban Interventions and Density Profile: the Housing Renovation program in Moscow (pp96-104.)

Nikola MITROVIĆ & Dr. Aleksandra DJUKIC / Belgrade Sr

Mapping informal changes - new meanings and new patterns of usage of mega blocks: case study New Belgrade (pp296-307.)

Munkh-Erdene TOGTOKHBAYAR & Dr. Tamás PERÉNYI / Budapest BME H / Mong
Post-socialist urban housing form: Changing ger districts in Ulaanbaatar (pp412-423.)

3:00pm – 5:00pm: SHRINKING CITIES

Chairs: Dr. Bálint KÁDÁR / Budapest BME H & Prof. Zorica NEDOVIĆ-BUDIĆ / Chicago IL USA, Dublin IE & Dr. Angelica STAN / Bucharest Ro

Dr. Branislav ANTONIĆ / Belgrade Sr

Reviving Socialist Shrinking Towns in the Lower Danube Region in Serbia by Embracing their Modernist Urban Heritage (pp30-39.)

Andreea Catalina POPA / Bucharest Ro

Shrinking cities on the Romanian side of the Danube river (pp366-377.)

Mattias MALK / Tallinn Est

With or Without You: The Local Significance of Rail Baltic in Pärnu (pp252-263.)

Anna Kornélia LOSONCZY / Budapest BME H

Rákospalota vs. Újpalota: changing centrality of District XV, Budapest (pp240-251.)

Ágnes BERTYÁK / Budapest BME H

Shrinking villages - Population retention and tourism development opportunities of the settlements of Órség (pp72-83.)

9th OCT / SATURDAY

9:00am – 10:00am: ONLINE PLUS

Chairs: Dr. Melinda BENKŐ & Dr. Domonkos WETTSTEIN / Budapest BME H

Antonio NEVESCANIN / Lodz Pl / Hr / from *mass housing* session
Urban Regeneration of The Socialist Modernist Housing Neighborhoods in Lodz, Poland and Zagreb, Croatia (pp320-331.)

Romana HAJDUKOVÁ & Alžbeta SOPIROVÁ / Bratislava Sk / from *shrinking cities* session
Brownfields and green infrastructure in the region of „triangle of death” (pp182-193.)

Lyudmila KOZLOVA & Dr. Anastasia MALKO / Irkutsk Ru / from *the fifties* session
The structural role of public spaces in 1950-80s mass housing: Experience and Prospects of the Akademgorodok district in Irkutsk (pp216-227.)

Andrea NÓBLEGA CARRIQUIRY & Amaia CELAYA ALVAREZ / Barcelona E / from *resilience* session
Urban Resilience in post-Soviet built environment renewal: the case study of Yakutsk (pp332-343.)

Olena LEMAK & Prof. Ľubica VITKOVÁ / Bratislava Sk / from *leisurescape* session / *Transformation of the Danube recreational areas (pp228-239.)*

10:00am – 12:00am: RE-COLLECTIVE (hybrid session)

Chairs: Dr. Julianna SZABÓ / Budapest BME H & Dr. Aleksandra DJUKIĆ / Belgrade Sr

Anica DRAGUTINOVIC & Prof. Uta POTTGIESSER / Delft NI / Sr - online
Regenerative Design and Co-Commitment as Decisive Factors in Mass Housing Revitalisation (pp116-125.)

Yulia BELOSLYUDTSEVA & Dr. Vitaly STADNIKOV / Moscow Ru
Problems of land division as an essential instrument of regulation and urban regeneration in Post-Soviet Russia (pp50-59.)

Diana GALOS / Cluj Ro
Urban housing in the countryside: community building and real estate policies (pp126-137.)

Zofia PIOTROWSKA / Warsaw Pl - online
Reimagining housing cooperatives in Poland: transformation strategies for the future. (pp356-365.)

Annamária BABOS / Budapest BME H
Key challenges of implementing the cohousing model in CEE countries Comparison Hungary and Poland (pp40-49.)

1:00pm – 3:00pm: RESILIENCE

Chairs: Dr. Árpád SZABÓ / Budapest BME H & Dr. Dániel KISS / Zürich-Basel Ch

Bence BENE / Budapest BME H

SPACE SYNTAX & OCOKA - Possibilities of Using Geospatial Technology for Military Analysis on Urban Terrain (pp60-71.)

Dominika GRABOWSKA-ROPEK & Maria JANKOWSKA / Warsaw PI Post-pandemic urban planning rules – future predictions (pp148-157.)

Rachel GYÖRFFY / Budapest MOME H

Towards a Potemkin City: Motifs and Consequences of Reconstructivism in Central- and Eastern Europe (pp158-169.)

Marcell HAJDU / Weimar D / H

Fragmenting Emptiness: The Democratic Resilience of Post-Socialist Public Spaces in Contemporary Budapest (pp170-181.)

Rania MATROUK & Shaha MAITEH / Budapest BME H / Syr

Urban Resilience to in Post-Socialist Cities: A Descriptive Comparative Study Between Courtyard Block and Panel Housing (pp284-295.)

Mariia TUMUREEVA & Dr. Valery KOZLOV / Irkutsk Ru

Novo-Lenino district in Irkutsk city as a post-socialist model of transformation (pp424-433.)

3:30pm – 5:30pm: LEISURESCAPE

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FULL PAPERS

Towards More Resilient City: Improving Public Health by Increasing the Usage of Urban Green Open Space - a Case Study of New Belgrade

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ABSTRACT

The modern lifestyle has generated major stress-related issues that are seriously affecting public health in cities. Alongside the current pandemic treats, public health became one of the crucial elements of city resilience. The usage of open green space in urban, residential areas can be beneficial for citizens' overall physical and psychological health and well-being. Although there is a trend of improving green infrastructure and usage in post-socialist housing districts, there are different types and patterns of open space usage. This paper aims to identify these differences in order to provide innovative suggestions for increasing the use of open green space in residential areas. The methodology consisted out of theoretical and observational techniques, including a survey of 120 participants. New Belgrade was selected as a case study, with a comparison analysis done on two distinctive open green spaces in this area, combining expert observation and semi-structured interviews. Results provided essential insights into connections between spatial characteristics, user satisfaction, and usage regarding open green space in New Belgrade. Thus, this paper could present a knowledge base for developing guidelines on improving the urban design of different open public spaces that could empower their usage and, therefore, influence citizens' healthier lifestyles in residential neighborhoods.

KEYWORDS

public health, open green space, open space characteristics, open space usage, post-socialist cities, New Belgrade.



Figure 1 and 2. (1) New Belgrade architecture; (2) Greenery and open space inside the mega blocks. (Source:

https://www.reddit.com/r/brutalism/comments/bg2s38/part_of_the_blocks_6164_new_belgrade_serbia/)

1. Introduction

Public health became one of the most important resources and, therefore, a deeply interesting research topic in recent years. Due to the ongoing pandemic and overall stress-induced lifestyle, this issue has raised a lot of discussion on the global level. The resilience and adaptation of cities alongside healthy city concepts have been the primary topic of scientific research, strategic planning, and city regulation. Urban dense city areas are crucial for public health, being that majority of the population are spending a significant amount of time in their homes. Therefore, the question of the health and well-being of the residents is mainly oriented towards individual health, habits, and lifestyles. Also, it is shaped by the environment, which can play a significant role in public health outcomes. Extensive literature and studies suggest how different green open space elements can have an essential role in affecting users' overall health and well-being and the quality of user experience, and city livability. This relationship between nature and people is a rather complex one. The benefits of spending time in open space are numerous, but they could be determined by the type of open space, by the natural as well as built characteristics, and by way of usage. This particular connection is being analyzed in the paper. Additionally, the location of the open space concept in New Belgrade is chosen as a research polygon within the specific socio-cultural and economic contexts of various open public spaces' planning and management. This research aims to provide deeper knowledge of which specific criteria of open green space in residential mega-blocks can influence its usage.

2. Methodology

The research process is divided into theoretical and observational methods. The first part of the paper is dedicated to the extensive literature review showing exactly how open green space can improve public health, especially in residential areas of the city. The findings previously shown are based on the supporting theories and available research. More studies regarding the elements of open green space and their linear correlations with public health outcomes compared to the amount of literature found on the means and types of open space usage.

In the observational part of this research, we will present the case study analysis done both on the open space characteristics and the usage. For the case study, New Belgrade was chosen as the biggest residential area of its kind in Central and Eastern

Europe. Comparison analyses were done between two main types of open green space in New Belgrade. The first type is a "public" type of open space in the proximity of housing mega blocks in New Belgrade. These areas are waterfronts of two rivers in Belgrade - Sava and Danube. For the purpose of this research a Sava waterfront has been selected because of the proximity to housing buildings. Type 2 of the open space are those open spaces inside the residential mega blocks. Although they do not have any physical restriction of usage, they are primarily used by the residents and are considered private. Mega housing block called "21st block" has been chosen as an exemplary unit and one of the first blocks of its kind constructed in New Belgrade.

Comparison between these two exemplary types of housing blocks was developed based on two criteria: (1) spatial and functional characteristics and (2) open space usage. The first criterion includes indicators such as location and functions, accessibility, natural and built characteristics of open public space. The second criterion included categories of users; frequency and duration of usage, and activities in which they engage, alongside the people behavioral patterns. Two main methods for the comparison of the two criteria above were expert observation, in situ analysis, and the survey via interview among users. Expert observation and the interview were done in the period of two months, from March until May 2021. The interview was conducted among 120 users in total (n=60 for each open space type).

The interview was simple and semi-structured. It was developed based on previously mentioned criteria divided into two parts. The first part of the interview included questions about the user satisfaction with the spatial characteristics (location and functions, accessibility, natural and built characteristics). Participants were asked to rank their level of satisfaction with grades from 1 (not satisfied) to 5 (very satisfied). In the second part of the interview, participants were asked about the usage of open green space in New Belgrade mega-blocks. More precisely, they were asked about the frequency (how often do they visit open space), duration (how much time they spend in the open space) and activities (what they usually do in open space). Among these two types of open space, we have established similarities and distinctive differences in spatial characteristics and patterns regarding behavior and overall usage characteristics, presented in the following section.

3. Background research

This paper analyzed different theories, strategies, and possibilities for improving public health in residential areas. In particular, two main parts of theoretical background research are connected to public health benefits concerning (1) open space characteristics and (2) open space usage. In the last few decades, the new paradigm of health represented the transformation of health perception. It made significant changes in healthcare systems, hospital care procedures, and the overall design of hospital complexes and open space and architecture in general (Marić, 2020). Concepts such as user-oriented health and patient-centered care focus on prevention rather than on the treatments and medicaments. This started the culture of healthier lifestyles, including more frequent usage of open green space and acknowledgment of their health-related benefits while introducing the importance of the living environment (Thwaites et al., 2005). Furthermore, this led to changes in the residential building design and the urban design of open space and nature-based solutions, therefore increasing the city's resilience.

3.1. Open space characteristics and public health outcomes

When we speak about open space, we mainly focus on the greenspace. In this paper, we are focused on the housing areas of the city. A couple of extensive studies show a correlation between natural environments and health (Thompson et al., 2012). An epidemiological study conducted in the Netherlands indicates that residents of locations rich in green areas enjoy better general health (Maas et al., 2006). Also, access to gardens or green spaces close to housing units is believed to affect residents' general level of health (Nielsen & Hansen, 2007, Marić, 2020; Thompson et al., 2012). It is well-known that natural elements of open space have a rather important role in improving public health, focusing on natural characteristics that influence our sensory systems. More precisely, greenery and landscape, sunlight, even natural sounds and smells can affect our body through the human sensory systems and enhance the physiological processes in the body (Thake et al., 2017, WHO, 2016). This is done by reducing stress, thus reducing blood pressure, and regulating heart rhythm, which further results in better work of the whole organism and regulates circadian rhythm and hormonal status. In this way, the immune system is strengthened, and pain and muscle tension are reduced. Thus, it can be concluded that being outdoors reduces the risk of chronic non-communicable diseases, cardiovascular diseases, diabetes, malignancies, obesity, and other diseases, and prolongs life expectancy itself (Giles-Corti & Donovan, 2003; Hartig et al., 2014; Ulrich et al., 1991). Many of the theories that support these findings are oriented towards analyzing the influence of natural surroundings precisely on the stress levels in human bodies. According to Environmental psychology, the environment can have a significant role in producing or reducing the overall stress levels and anxiety, which deals with the relation between man and the context (Giofrè and Đukanović, 2016; Hartig et al., 1991). Numerous studies show how people are drawn to natural settings compared to urban ones. Further, Psycho-evolutionary theory argues men have an inherited ability to respond positively to various elements of nature (Ulrich, 1984; Ulrich et al., 1991). In the 1980s, Kaplan & Kaplan established Attention Restoration Theory (Kaplan & Kaplan, 1989), where the therapeutic effects of nature are defined through our perception and attention. The above-mentioned natural characteristics of open spaces can positively affect psychological changes in the body, i.e., exposure to natural conditions strengthens the immune system and reduces the risk of various chronic diseases. From the aspect of mental health and well-being, staying in open spaces calms and improves mood, positively affects brain functions, and stimulates serotonin and dopamine secretion. This induces positive behavioral and psychological changes, emotions, and cognitive activities. Also, it has been proven that greenspace can reduce brain fatigue, stimulate the regeneration of the nervous system, have a beneficial effect on restoring attention, activating the involuntary "spontaneous" attention. These processes reduce the risk of mental illness, psychosis, depression, and anxiety (Gidlow et al., 2012; Hartig et al., 2014; Kaplan & Kaplan, 1989; Thompson et al., 2012; Ulrich, 1984, 1991). Apart from natural elements, built characteristics of open public space can influence the improvement of public health (Marić, 2020).

Apart from the natural elements of open green space, there is a significant social dimension of these spaces. Open public space has always served as a focal point of social life in a city. Many researchers claim that spending time can enhance the connection between people (Đukanović et al., 2017; Marić, 2020). More precisely, the urban design of open green space can significantly define the type of usage and people's behavior. Visual identity and aesthetics can be more and less satisfying. Open space alongside with urban furniture, such as seating capacity and position as well as

protective elements can influence better communication and socialization. Additionally, the arrangement of urban furniture and greenery, garden elements, and other can induce more physical activity and recreation. The sensory and multisensory design of open space is defined to positively impact people's health and well-being. Healing gardens and Japanese gardens are good examples of how the urban design of open green spaces can have a therapeutic influence on the users (Stigsdotter and Grahn, 2002).

In this paper, particularly, we are analyzing the connection between open space characteristics and their usage. Although the elements of open green space undoubtedly have a positive impact on health, the impact level depends on the open space usage. According to the literature, the way and means of open space usage often depend on the aforementioned characteristics of the space. The more users are stimulated with the natural characteristics and urban design of open space, the more time they spend in these spaces (Đukanović et al., 2017; Marić, 2020). Also, there is a difference between passive and active usage of open space. According to Ulrich (1984), even passive form of spending time in open green space, such as a view towards the green landscape, is salutogenic and can help in reducing stress (Ulrich, 1984). On the other hand, several scientists argue how active usage of greenspace has a more beneficial role in general health outcomes (Marić, 2020; Thompson et al., 2012; WHO, 2016).

In this paper the correlation between open space characteristics and usage is analyzed in the residential area of New Belgrade, the largest municipal district within Belgrade, Serbia. New Belgrade was chosen because of its immense size and population, grand boulevards, and massive apartment buildings lined up in numbered mega-blocks, with inner greenspace areas and waterfront areas.

4. The case study - open green space of New Belgrade

The location of New Belgrade has been chosen as a research polygon, as the largest urban district in Serbia. Today, more than 300.000 citizens are living in around 800 residential buildings and more than 90.000 units (Savić, 2000; Waley, 2010). It was first envisioned as an administrative district. Still, soon it becomes an almost strictly residential area with distinct mega structures placed in between the historical territory of Belgrade and Zemun (Blagojević, 2012). The construction started in the 1950s, and it is still ongoing. In the last few decades, this area has undergone a rather significant transformation. The original planning idea was transformed following the trends in commercial and business usage. New functions were added, and it is becoming the epicenter for a new business district. Although lacking a variety of use, the New Belgrade area had a significant area of greenspace and well-designed open space areas (Blagojević, 2007). These areas are often considered as lost spaces or simply spaces around the built structures. However, starting from the 2000s more and more open space is covered with new construction that is slowly threatening to cover most of the greenspace initially planned for this residential area. This slow process of change is primarily driven by international capital, with global companies investing in the construction of large retail, leisure, and business facilities, which led to the transformation of open space usage (Waley, 2011).

Open space inside the mega blocks is considered less private as it was during the beginning of the area development. The post-socialist architecture of New Belgrade (see Figure 1) is rather unique but often considered rigid, while greenspace improves the visual identity and the overall quality of living (see Figure 2). However,

regarding urban design characteristics, the potential of open space in New Belgrade is often underused or poorly maintained. One of the main problems is the ownership, or the lack of communication between the government responsible for the land and the people living in the mega-blocks. Importance of participatory planning, i.e., community planning and the role of citizens of New Belgrade's mega-blocks is crucial (Jovanovic and Stupar, 2021).

In the following text we will present the spatial characteristics of two mega-blocks in New Belgrade based on the user's perception. This research analyzed two main types of open space in the New Belgrade area (see Figure 3). The Sava waterfront (type 1) and the open space inside the 21st block (type 2). We will present results based on the aforementioned methodology - the spatial characteristics and user satisfaction, as well as open space usage.



Figure 3. The locations of two types of open space in New Belgrade; (Source: author).

4.1. Type 1: The Sava waterfront

The part of the Sava riverfront used for this research is open green space located in the recreational area of the Sava riverfront, on the southern border of the New Belgrade municipality. It is in near proximity to the housing area, accessible for all types of users. The main functions of this area are recreation, leisure, sport, and commercial. Prevailing features certainly are natural ones, such as the river and the green landscape, with sunlight and natural sounds (see Figures 4,5,6). The complete site is equipped with urban furniture for communal use and small shops, famous coffee places, and restaurants on the river, popularly known as "splavovi" (see Figure 6). Pedestrian and bicycle paths are located on different levels and go through the whole area. In addition, the site is adequately equipped for different types of physical activity, such as courts for other sports and open gyms. The riverfront area offers various places that are proved to be beneficial for mental and physical health. Places for socialization, sport, and recreation are dominant comparing to sites designed for intimacy and peace. However, users are mostly satisfied with the accessibility,

functions, location, and built characteristics (average grade among users is 4), while the highest grades of satisfaction have been given to the natural features of this area (most of the users graded natural characteristics with the grade 5). Among the spatial features, participants stated they enjoy the most the relaxing view of the green landscape and pedestrian paths, while a few participants said they frequently visit the open-air gym. The majority of users visit the area usually once a week and stay for more than an hour. While at the riverfront, users spend time with family or friends, engaged in activities such as walking or cycling. Among them, there are a lot of people using coffee places and restaurants on the river.



Figure 4, 5, and 5. Sava waterfront area; from the left (4) The greenery; (5) Pedestrian path; (6) Riverboat restaurants "splavovi."

(Source: MareBG; <https://commons.wikimedia.org/w/index.php?curid=60610058>)

4.2. Type 2: The "21st block"

Type 2 of the open space are those inside the residential mega blocks. The primary function of these mega blocks is residential with a mixture of commercial and educational use (Jovanović, Ratkaj, 2014). The 21st block was one of the first blocks constructed. It represented a unique architecture of the post-socialist modern architecture, with residential function and a large open space area. It was built from 1962 to 1966 and was a mainly residential block, with three different housing units - six residential towers, two apartment blocks, and one residential meander, with over 2,300 housing units (Djukic et al., 2018). The location of this mega block is connected to the main city bridge and the biggest commercial center "Ušće" in Belgrade. It is located in the eastern part of the municipality at the "entrance" to New Belgrade; it is semi-open, surrounded by busy roads. The central location and the general trend for new construction in New Belgrade led to changes in appearance, usage, and open space characteristics. Today it has mixed functions, with educational institutions: two kindergartens, Elementary School and Gymnasium, alongside numerous business and catering facilities and sports facilities (Figure 7, 8). Although they do not have any physical restriction of usage, the open spaces inside these residential blocks are primarily used by the residents and are considered relatively private. Open space is dispersed in between the built structures and concentrated inside the educational complexes. It consists mainly of pedestrian paths and squares, with parks with trees and small areas with grass (Djukic et al., 2018). In the place of former open space areas now are new modern office buildings with small greenery and large parking lots. While the majority of users are satisfied with accessibility, location, and function in general (average grade is 4), natural characteristics were graded with a middle grade of 3. Users mainly stated how there is a lack of greenspace inside the block. Also, they considered built elements insufficient and not well maintained (average grade is 2). Although most users spend time in open space areas almost every day, they either live

or work in the area, and they usually spend 15 to 30 minutes in open space. The usage is mainly passive. People are passing through or just sitting outside of their buildings. Some of the users are spending time in the playgrounds with their children or pets.



Figure 7 and 8. 21st Block; (7) Aerial view; (8) Office buildings in the block. (Source: author: redportal.rs; <https://redportal.rs/cooltura/2301/najduza-zgrada-u-srbiji>.)

Table 1. Comparison of two types of open space in New Belgrade based on spatial characteristics and open space usage (Source: author)

Criteria	Indicators	Type 1 The Waterfront		Type 2 Block "21st"	
		Expert observation	User satisfaction (1-5)	Expert observation	User satisfaction (1-5)
Spatial characteristics	Accessibility	Mainly public open space	Average grade 4	Mainly private open space	Average grade 4
	Location	Waterfront area, in the proximity of housing blocks.	Average grade 5	One of the main intersections, open block.	Average grade 4
	Function	Housing, recreation, leisure, and commercial usage.	Average grade 4	Residential block, with education and office buildings.	Average grade 4
	Natural characteristics	Sava River, Greenery, forests, fresh air, and natural sounds.	Average grade 5	Small areas with greenery.	Average grade 3
	Built characteristics	More variety, Pedestrian and bicycle paths, playgrounds, and restaurants on the river.	Average grade 4	Less variety, office buildings with small amounts of greenery, playground, and parking lots.	Average grade 2
Open space usage	Frequency	Once a week		Everyday	
	Duration	More than 1 hour		15 to 30 minutes	

	Activities	Mainly active: walking, cycling, running, playing with children or pets, eating, drinking.	Mainly passive: passing through, sitting, relaxing.
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Results provided insights into both spatial features and means of usage regarding open green space in New Belgrade. The results are shown as an overview of two exemplary open space areas individually and in comparison (see Table 1).

All of the participants from the two mega-blocks defined potentials and problems that could influence the usage of open space. As main potentials they listed natural elements such as greenery and landscape, alongside with particular spaces such as children playgrounds and pedestrian paths. Regarding the problems, majority of users stated low maintenance and possible government «top-down» new construction projects that could endanger the existing open space in the New Belgrade area.

5. Discussion and conclusion

Theories mentioned in the first part of this paper showed that the usage of open space that has natural characteristics is beneficial for human health in general, while built characteristics can influence the means and ways of the use. This is measured in frequency, duration, and activities. All of these three categories affect the level of physical and mental health and well-being, i.e., public health. Therefore, the usage of open space in urban areas and mainly residential neighborhoods should be increased. In this paper, we examined the usage of two different types of open space in New Belgrade. The first type is a waterfront area near the residential buildings, while the second is open space inside the mega blocks. While there are no physical or functional restrictions for using each of these open space areas, type 1 is considered more public, while type 2 is more private, according to the categories of users. Another, more important difference between these two types is in the natural and built characteristics. Type 1 has a large amount of greenery, including forests and parks, as well as equipped areas for recreation or leisure. On the other hand, type 2 has rather dispersed and not well-maintained open space areas that are slowly evaporating under new construction of office buildings. These differences are also regarded in the level of satisfaction among users, which ultimately led to significantly lower satisfaction with both natural and built characteristics for type 2. Features such as vistas towards the river and greenery, variety of different and equipped open space areas to influence the duration and active usage of open space in type 1. Furthermore, while comparing the usage of these two types, the results showed interconnections between individual criteria used. In particular, type 1 that got a higher overall satisfaction score is used for a more extended period of time while engaging people in more active usage, which is the ultimate goal because it is considered more beneficial for their health outcomes.

Theoretical background research showed how open space, with its spatial characteristics, could influence overall public health and therefore make the city more resilient on the local level. In particular, more frequent and more active usage of open green space can improve the physical and mental health of people in residential areas. Furthermore, this research determined how users' satisfaction with natural and built open space characteristics could directly influence the frequency, duration, and activities people engage in open space. Therefore, by improving the urban design of green landscapes in urban open spaces, we can contribute to the better public health of people in residential areas and to the higher resilience of a city. Additionally, it is important to address the question of local community and the people participation in

the process of regeneration and reconstruction of New Belgrade and especially new development in the open space area. This approach to open public space of these mega-blocks could contribute to socialization, better usage of open space, sustainable practices, stimulating interaction between context and design, while understanding the process of participation as a mutual learning, effort, and development (Jovanovic and Stupar, 2021).

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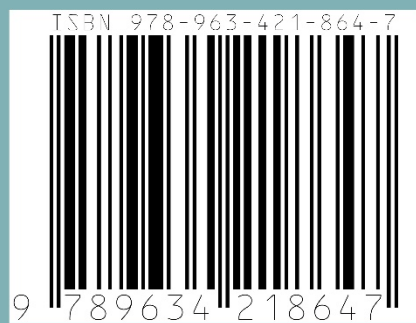
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