







# FACING POST-SOCIALIST URBAN HERITAGE

8-9<sup>th</sup> 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 /

8-9<sup>th</sup> October 2021, Budapest, Hungary

venue /

1111 Budapest, Műegyetem rkp. 3, 2<sup>nd</sup> 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 /

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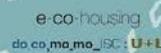
The conference is in English, and participation for the audience is free. Everyone is welcome!

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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 8<sup>th</sup> and 9<sup>th</sup>, 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





## SCIENTIFIC BOARD & SESSIONS

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**Secretary of the DOCONF series:**

Dr. Domonkos WETTSTEIN PhD

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

**Members of the Scientific Board of the DOCONF2021:**

Proofreaders of the full papers ■

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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](#)



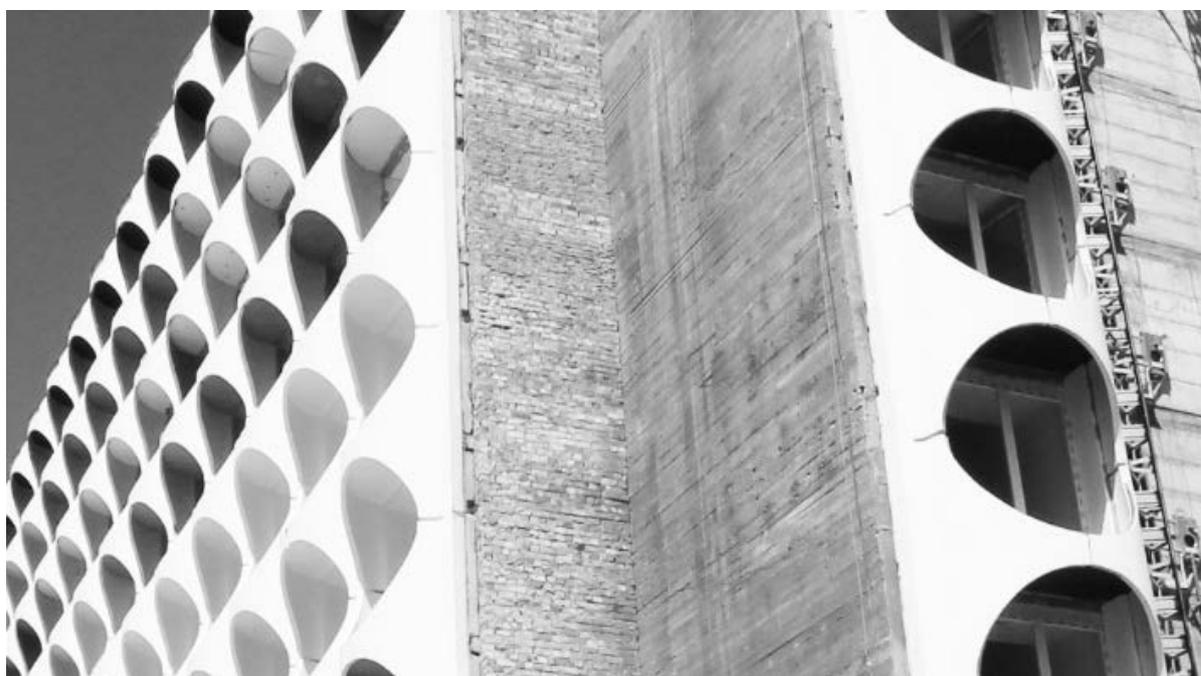
As a result of (re)privatization of the housing stock, the growth of social disparities, and the one-sided housing policies, a distorted housing market has developed in most of the cities in the post-socialist countries, generating problems in affordability, mobility, sustainability, etc. Community housing 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

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

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for the abstracts and further information please visit:

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CONFERENCE PROGRAM

8<sup>th</sup> 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.)*

9<sup>th</sup> 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

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Bence BENE / Budapest BME H

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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

Chairs: Dr. Domonkos WETTSTEIN / Budapest BME H & Prof. L'ubica VITKOVA / Bratislava Sk

Gabriel SILVA DANTAS & Dr. Ildikó Réka NAGY / Budapest MATE H / Br

*Resilience of urban forms in context of Urban Green Infrastructure: Study case of Ferencváros, Budapest (pp390-399.)*

Dr. Jelena MARIC / Belgrade Sr

*Towards more resilient city: improving public health by increasing the usage of urban green open space - a case study of New Belgrade (pp274-283.)*

Kinga SÁMSON / Budapest BME H

*Hungarian amusement parks from the fifties to nowadays (pp378-389.)*

David KLEPEJ / Ljubljana Slo

*Planning Urban Tourism Infrastructure in Post-War Socialist Slovenia: the Case of City hotels (pp206-215.)*

Flóra PERÉNYI / Budapest BME H

*Experimental architecture: examining Hungarian campings through the examples of two different styles in the socialist era (pp344-355.)*





## FULL PAPERS

# Reviving Socialist Shrinking Towns in the Lower Danube Region in Serbia by Embracing Their Modernist Urban Heritage

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## ABSTRACT

*A socialist city was one of the most important spatial legacies of a socialist state in Eastern Europe, where its main tenets were adjusted to (re)form an urban environment for proletariat as a focal group. However, the implementation of a socialist-city agenda was confronted to the urban legacy of pre-socialist periods in many East European cities and towns with long history. Therefore, the 'purest' socialist cities were usually completely newly-formed urban settlements. The most notorious examples were usually bigger or middle-size cities with the large plants of heavy industry. They have been often exploited as a research theme last years, usually regarding their fast and uncontrolled urban shrinkage after the fall of socialism. This focus has left smaller socialist cities and towns somehow 'in shadow'. This research is dedicated for three examples of new socialist towns located in the Lower Danube Region in Serbia: Donji Milanovac, Tekija, and Brza Palanka. All of them are unique due to their formation; old towns were flooded by the formation of two artificial lakes in the Iron Gates System on the Danube River, so new towns were fast built in modernist manner to relocate the population from the former ones. Today, these towns are more known in Serbia by extreme urban shrinkage due to the overall isolation by the formation of both lakes. Nevertheless, the recent rise of cultural tourism on the Danube has given a new impulse for the towns' life. This paper aspires to revalorise their modernist urban heritage and to discuss if this element can be utilised for their further regeneration, driven by cultural tourism on the Danube.*

## KEYWORDS

*Socialist city, new towns, modernist urban heritage, shrinking cities, the Danube, the Iron Gates, planned cities, heritage-led revitalisation*



*Figure 1. Donji Milanovac and the Danube in the Iron Gates Gorge (Author: B. Antonić)*

## 1. Introduction

A socialist city is one of the well-known urban constructs developed during and after socialism. It is based on the premise that a city has a very important role in a socialist system, because it was a place or a 'habitat' for proletariat as a focal group. This view was established even in the first years of socialism in the USSR (Kopp, 1970). However, the full development of a socialist city happened only after the World War II, where socialism spread across the eastern half of Europe.

Kopp (1970) noticed that a socialist city was the pure example of a modernist city by its physical side. In accordance to the principles of modernist urbanism, the socialist city had a strict urban zoning, with the accent on industry, basically linked with proletariat; urbanisation was even regarded as a side-product of industrialisation (Makhrova & Molodikova, 2007). Thus, it is not rare to find the former socialist cities with vast industrial zones, which even make 1/3 of the entire urban area (Stanilov 2007). On the other side, central functions and urban centres were neglected, as a reminiscence of pre-socialist, capitalist city (Djukić et al, 2018). Residential zones were somewhere in-between, but with an ideological support to multi-family housing in a 'super-block', a huge urban block with open structure and a lot of greenery, typical for modernist urbanism. Dwellings in such residential blocks and mass-housing estates are frequent in the European East – they make 20-40% of entire housing stock (Temelová et al 2011). Both industrial areas and mass-housing estates have been heavily affected by urban shrinkage process after the fall of socialism.

The explained model of socialist city was not, however, implemented in its full scope in many cities. Many Eastern European cities and towns had preserved their historic, pre-socialist cores and their radical transformation into a new, socialist urban ground in the postwar situation with limited finances and with a significant pressure from rural immigration were very costly and irrational thereof. Therefore, the tenets of a socialist city were used partially and with regional and local customisations in many cases. Additionally, the significance of the preservation of historic urban cores,

developed in the previous epochs, arose across Eastern Europe after the 1960s (Djukić et al 2018).

The only places where the implementation of a socialist city was straightforward were new cities, as a ‘tabula rasa’ for such experiments in modernist urbanism. These new cities were relatively frequent in the areas with previously sparse urban settlements, such as Siberia in the USSR/Russia. In the other countries with the already established network of urban settlements, the examples of these cities and towns were rarer – they were built in specific circumstances. For example, such cities and towns were built next to newly-open mines or as relocated settlements due to the formation of the artificial lakes created by damming rivers. The majority of them were formed as mono-structural cities, dependent on one economic/industrial branch or even one huge public industrial enterprise.

After the change of economic environment with the post-socialist transition in the 1990s, the new socialist cities with monostructural economy have lost their economic base and have become a showcase of extreme urban shrinkage. Their main concentration in the (former) socialist countries (Bernt, 2016). These cities actually merge two more problematic (“abnormal”) models of shrinking cities in a typology by their economic performance: monostructural shrinking cities due to its economic uniqueness and the “shock therapy” model of post-socialist shrinking cities, due to their regional uniqueness with fast political and economic transition (Bontje & Musterd, 2005). This situation has proven to be ‘perfect’ for sudden and uncontrolled urban shrinkage (Kühn & Liebmann, 2012). Russia has the highest number of “monotowns” (Rus. *Моногород*) in the World – 319 of them, with 10% of all Russians. They are mainly located in the country north and Siberia (Veryavkin, 2021).



*Figure 2. The Iron Gates Gorge is the most scenic section of the Danube (Author: B. AntoniĆ)*

This paper investigates three such cases in the Lower Danube Region in Eastern Serbia, the part of the former Socialist Yugoslavia. Three small towns – Donji Milanovac (See: *Figure 1.*), Tekija and Brza Palanka – were relocated due to the formation of two artificial lakes created by new hydro-plants on the Danube River in the Iron Gates Region during the 1970s and 1980s. After their relocation, their development was frozen, so the towns have entered the state of extreme urban shrinkage in the post-socialist times. The recent rise of cultural tourism in the Iron Gates Gorge, the most scenic section of the Danube (see *Figure 2*), has opened new perspectives for their regeneration, but this process still faces many limitations (Kadar & Gede, 2021). Interestingly, this challenging position – frozen urban development for decades – has left their legacy of modernist urbanism (and architecture) intact. These circumstances inspire this research – to revalorise their

heritage of modernist (macro-scale) urban planning and to discuss if this element can be utilised for their further regeneration, driven by cultural tourism on the Danube.

## 2. Methodology

This research is created as a multi-case study on three selected towns – Donji Milanovac, Tekija, and Brza Palanka (See Figure 3).

The multi-case study is chosen because small towns in Serbia are rarely examined independently last decades and up-to-date theoretical knowledge is scarce. In addition, literature for three selected towns is scarce and mainly limited to several books which are not basically from the field of urban studies. Many of them are even biased, i.e., laments and melancholy about the former towns and their urban life. Therefore, the main source for this paper is talks with experts from the main local institutions and their view on the mentioned books, as well as on-site research.



Figure 3. Location of three selected towns in the Lower Danube Region in Serbia (Author: B. Antonić)

In line with these limitations, it is important to use a comparative analysis in this research, to enable obtaining high-quality scientific data. The comparative analysis is done by two parallel lines: (1) through the comparison of the demographic statistical data of these towns, with the elements of historic context, and (2) through their urban morphology. This dual approach allows achieving the better understanding the development of these towns and their interdependence to the Danube.

## 3. Historic and Demographic Context

The modern history of three selected towns begins in the early 19<sup>th</sup> century, with the fast development of the central part of the present-day Serbia, which was then the nucleus of the current state – the Principality of Serbia. All towns got their rights of a market town (Serb. *Varošica*) in the late 19<sup>th</sup> century, which was crucially the result of an intensive transport on the Danube during the course of the century. The Lower Danube Region in Serbia is very specific, because its backbone is the longest gorge of the river, 120-km long Iron Gates. The position of the gorge within the broader Danube Area makes it more physically isolated by mountains, without sizable rural surroundings and more remote concerning inland connections (Antonić et al, 2018). This means that the Danube has played a significantly bigger role in the formation and development of these three towns than in the case of many other Danubian cities and towns, which have plains and valleys with a lot of other resources in their background.

Although all three towns have shared their historic development in two last centuries in general, they differ relating to the several important parameters of their urban characteristics (see *Table 1*):

**Table 1. The main data of three selected towns in the Lower Danube Region (Author: B. Antonić)**

Town	Declared as a town – Year	Current town status	Municipal seat	Type of initial town	Rural part
Donji Milanovac	1866.	Yes	Yes, before 1965	Planned	No
Tekija	1885.	No	No	Regulated	No
Brza Palanka	1885.	Yes	Yes, before 1965	Irregular / organic	Yes

Donji Milanovac is the most interesting case among three selected towns, because the town has been twice planned and developed in a planned manner in the last two centuries. The first plan was enacted in 1832, which transferred an initial organic settlement from an island, now submerged by the Danube, to the right side of the river (Kojić 1970). During the course of 19<sup>th</sup> and the most of 20<sup>th</sup> century, Donji Milanovac developed within this regulation and got an orthodonal matrix (see *Figure 3*). The other two towns – Tekija and Brza Palanka – had a less regulated genesis (Kojić 1970). In both cases, the urban morphology of their old matrix preserved the elements of unfinished regulation: irregular settlement form, fuzzy network of streets and blocks and physically unfinished centre. Nevertheless, Tekija was developed as a compact urban-rural settlement, whereas Brza Palanka was rather dispersed, with two different strata: a lower, town section along the Danube Road and next to the town port on the Danube and an upper, rural section close to more fertile land on the plateau above the riverside.

The demographic analysis of the period before the relocation of the towns (See *Table 2*) shows the period of the fast developed in 19<sup>th</sup> century due to the intensive trade and transport on the Danube, which changed after the rise of rail as a key mean of transport at the end of the century. In the next few decades in the early 20<sup>th</sup> century, the development of these three towns was more an urban stagnation. The only exception was Donji Milanovac, which grew in the 20<sup>th</sup> century due to significant mining activities (coper mines) in the mountains behind the town. In the case of Brza Palanka, the demographic increase was related to the rural part of the settlement.

**Table 2. Demographic trends for three towns before relocation – 1815-1970 (Sources: Kojić, 1970; SORS, 2014)**

Town	Population censuses							
	1834	1868	1884	1910	1931	1948	1961	1971
Donji Milanovac	705	1,207	1,211	1,634	2,160	2,274	2,669	2,595
Tekija	-	982	1,158	1,367	1,109	1,385	1,635	1,342
Brza Palanka	-	616	1,013	1,513	2,008	1,730	1,801	1,668

The construction of two hydroelectric dams – the Iron Gates I (1972) and the Iron Gates II (1984) – caused deep changes for three analysed towns and their inhabitants. The artificial lakes formed by the dams required the relocation of all of them; Donji Milanovac and Tekija were completely relocated, as well as the lower, town section of Brza Palanka (see *Figure 3*).

The official demographic data realised for the decades after the relocation of the towns has showed that this process was already the socio-economic failure at the

end of socialism (Orlović, 1994). Then, all towns have witnessed an extreme urban shrinkage after the start of the post-socialist transition, which can be easily exemplified through their fast depopulation (see *Table 3*). Actually, Brza Palanka and Donji Milanovac were among the fastest declining urban settlements in Serbia by the population census in 2011 (Antonić et al 2020). From economic perspective, the towns have lost their previous economy linked to the Danube (transport, services, and fishery). The problem is also that the towns have never transformed into industrial centres. Furthermore, their already weak rural surroundings have become demographically emptier with all these changes in the gorge. Hence, this position makes them unique for general urban development in post-socialist space, where a “normal” urban shrinkage is still considered as the consequence of the deindustrialisation of cities (Haase et al 2016). At local level, this unique challenge has ‘haunted’ local authorities – how to manage the future of these small towns without proper international examples?

**Table 3. Demographic trends for three towns after relocation – from 1991 (SORS, 2014)**

Town	Population censuses				Average age, 2011
	1991	2002	2011	1991-2011	
Donji Milanovac	3,338	3,132	2,410	-27.8%	43.4
Tekija	1,129	967	792	-29.8%	45.9
Brza Palanka	1,557	1,076	860	-44.8%	49.5

#### 4. Morphological Analysis of three towns

Built in the late socialism, all three selected towns – Donji Milanovac, Tekija and Brza Palanka – present an ultimate modernist urbanism and architecture in the small format frozen in their initial state due to later shrinkage. For instance, these towns were planned without significant industrial zones and with just a few multi-family buildings in central locations.

However, these towns also differ between each other by the quality of their legacy of modernist urbanism (see *Figure 4*).

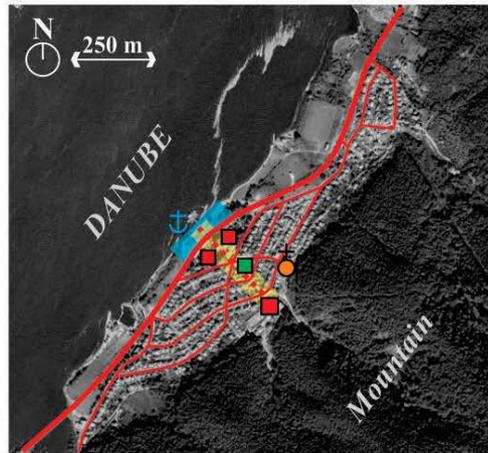
The most inventive case is the new urban matrix of Tekija (see *Figure 4a*). Initially, it was questionable if the town would be relocated as a new one or its population simply resettled to nearby settlements. Fortunately, new Tekija was built on a hill above the old settlement in the early 1970s. The new settlement was built on a hill above old Tekija. The position of the hill was successfully implemented in the new plan of a town. While almost all streets are winding as they follow terrain and isolines, the main street is oppositely straight and it connects the lowest and highest points in Tekija, a port and elementary school. Due to significant inclination, this is a pedestrian-only street, designed as a picturesque 250-m long cascade stairway. All public facilities, such as a local culture centre or administrative hall, are located along this street, making a clear form of a central axis. Hence, looking from above, Tekija resembles as a bird landing on the Danube, where the pedestrian street is its spine, while other/‘normal’ streets on both sides are the wings of this ‘bird’.

Donji Milanovac was built at the same time as Tekija, but its urban matrix did not bring similar ingenuity (see *Figure 4b*). First, the location of a new town was obviously an issue, because Donji Milanovac was relocated several km downstream from old settlement. Then, a chosen area for the new town lacked appropriate space, so the land of the present-day lower part of the town along the Danube Riverfront (centre) had to be consolidated.

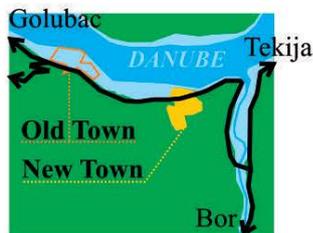
**a. TEKIJA**



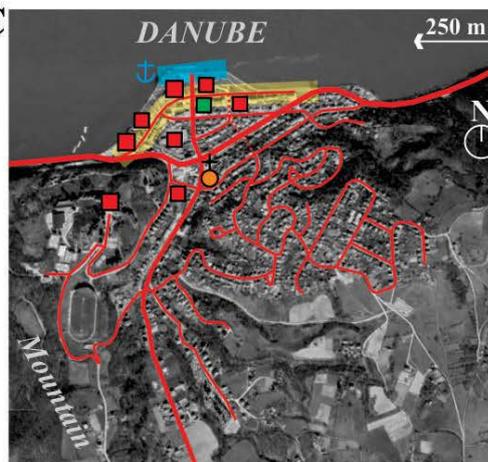
**Upper:**  
Position of old and new town  
**Right:**  
Urban matrix of new town



**b. DONJI MILANOVAC**



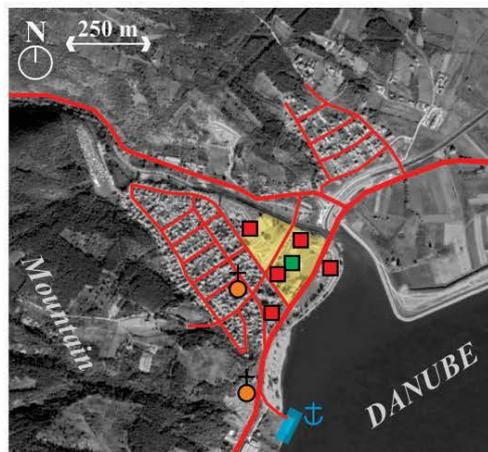
**Upper:**  
Position of old and new town  
**Right:**  
Urban matrix of new town



**c. BRZA PALANKA**



**Upper:**  
Position of old and new town  
**Right:**  
Urban matrix of new town



LEGEND	
<b>Left maps</b>	Old Danube course
	New Danube course
	Old town
	New Town
	Land
	Road
<b>Right maps</b>	Street
	Pedestrian street, quay
	Centre, central area
	Port-dock area
	Town Hall
	Church
	Public services (post office, school, culture centre)

Figure 3. Urban morphology of Tekija (a), Donji Milanovac (b) and Brza Palanka (c), as new modernist towns in Serbia (Author: B. Antonić)



The logic of the urban plan of the new town is also different than in Tekija, because the central axis of the town with the main public facilities is along the riverfront. This axis is somehow peripheral to the town morphological backbone – a transport 'cross' consists of east-west road as the main link to other settlements in the Iron Gates and north-south road, which is rather internal and connects a lower centre with a regular street matrix and upper tourist and residential areas with a curved and à la organic street matrix. This intentionally curved urban matrix of the upper, residential part of the town has been an inspiration for local jokes, such as "living in a kidney" for the inhabitants of its eastern part, where streets shape a kidney-looking urban block.

Both Donji Milanovac and Tekija were completely and smoothly relocated in the 1970s. Brza Palanka is not such case. The previous, combined urban-rural settlement is not completely relocated during the construction of the Iron Gates II Dam (see *Figure 4c*). Its upper rural part was preserved, whereas the lower urban part of Brza Palanka was relocated to the top of a hill 1.5 km north from previous location and next to the old riverside of the Danube. This approach has ultimately preserved the two-part structure of the settlement. This top of the new urban part of Brza Palanka is relatively flat, which allows a freedom in urban planning and design. However, Brza Palanka was developed in the early 1980s, when the first, economic signs of the crisis of Yugoslavian socialist system started. It seems that this timing was critical for the town planning – the town shows a simple form without any innovation or specificity. Its shape is rather orthogonal, with a further orthogonal organisation of blocks and streets. The blocks closer to the Danube on south-east are with public facilities and public greenery, while the other ones are only with single-family housing.

## **5. Instead of conclusion – Future prospects of three selected towns**

Findings from the previous two-step analysis reveals that three analysed towns – Donji Milanovac, Tekija and Brza Palanka – were not planned to be urban settlements of greater importance. They do not have industrial zones, big central zones or multi-family neighbourhoods. However, their modernist urban morphology is significantly impacted by the Danube, especially in the cases of Donji Milanovac and Tekija.

The recent rise of (cultural) tourism on the Danube has made an impact on local life. Tourism sector is currently the most developed in Donji Milanovac. Aside that this town is the largest one in the research, it is also the only one where centre and the most of central activities are located next to the river, so town life is really on the Danube. However, modernist urban matrix and architecture is still an unused potential. In conversation with local experts in culture and tourism, they still do not see this element as an important feature for local development, but as a prospective 'niche' in the local offer of cultural tourism.

The biggest potential for the future tourism development is Tekija, which unique modernist urban matrix is not exploited enough, even though the central pedestrian axis can be utilised to open magnificent views on the gorge from its upper point. Local people are aware that the central pedestrian axis with central functions shaped in a modernist manner is a very specific local feature, but they are still without broader plans on how to utilise it. The only issue is they recommend the upper point of the axis as a beautiful viewpoint to the Danube and the town. This is, however, without proper tourist signalisation.

At the end, Brza Palanka has limited prospects due to the obviously unfinished urban matrix, which did not bring any innovation. The main advantage in this town is a lot of free space along the Danube, which can be used a plot for the further urban facilities, which can eventually upgrade local tourist offer, as well as the quality of local urban life.

In all three cases, as well as across the Serbian Iron Gates, local people, experts and government representatives underline the importance of the recent state-led flagship projects to facilitate local economy, especially in (cultural) tourism. There are many examples for this: the reconstruction of Golubac, Ram and Fetislam fortresses, the formation of the museum of “Lepenski Vir” Archaeological Site and the new headquarters building of “Đerdap” National Park with the museum of local flora and fauna. The recently promoted construction of modern Danube Magistral Road through the Iron Gates is the latest example of these projects. They are relatively expensive projects, but the development of local SMEs, such as new tourist accommodation, restaurants, retail, taxi companies, tourist and tour-guide agencies or small cultural facilities, prove that these projects have significantly triggered local level.

## ACKNOWLEDGEMENT

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# Key Challenges of Implementing the Cohousing Model in CEE Countries: Comparison Hungary and Poland

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## ABSTRACT

*Nowadays the cohousing model is widely applied in different countries of Western Europe. The adaptation of this model is in its initial phase among the Central Eastern European countries (CEE). While this model is also capable of developing post-socialist urban housing, on a small-scale*

*This essay proposes to map and categorize the key challenges of implementing the cohousing model in CEE countries, like the Czech Republic, Hungary, Poland, Serbia, Slovakia, and Slovenia. The method is to analyze and compare the experimental cohousing projects in Hungary and Poland. In Hungary, cohousing NGOs and initial grassroots groups are formed, while in Poland projects are under development and some pilot projects are being implemented. The analysis is around the characteristics of creation and the adaptation of the cohousing model. It tries to unravel the reasons for the success of the Polish case studies, as well as to collect their difficulties.*

*The expected outcome of the essay is a structural overview of the obstacles and possibilities of implementing the cohousing model in Hungary and the European post-socialist region. This overview could highlight the key challenges of the topic and it can be as a basis of the cohousing implementation framework.*

## KEYWORDS

*cohousing, co-creation, cohousing adaptation, cooperative housing*



Figure 1. **CollAction Budapest initiative group: creating the common vision** (Photo: Babos Annamária)

## 1. Introduction

The liveability of cities and the availability of affordable and sustainable urban housing is an unquestionably important challenge both at the moment and in the future. In recent years, possible solutions to the problems of urban liveability today are presented by social innovations, cultural changes, and alternative architectural and housing forms, all of which allow for our cities to be more sustainable, the citizens to be more satisfied with their life and urban housing to be increasingly sustainable and affordable.

The known methods of the European contemporary cohousing model, such as co-creation, participatory design processes, and neighbourhood design, do not only enable the establishing group an affordable and sustainable housing option, but it also exerts a positive impact on the urban environment. It may contribute to establishing social and physical sustainability in urban areas, and create a healthy mix of common and private areas in a high-density urban setting as well. Cohousing and its shared characteristics are often applied with different models in Western-European housing systems (La Fonda and Tsvetkova, 2017; Twardoch, 2017). In contrast with it, in the Central Eastern Europe (CEE) region the spread of the cohousing model is still in its initial phase, because of social attitude and ability, financial and legal circumstances. (Glatz and Komlósi, 2015).

This paper tries to reveal the reasons why the adaptation of the cohousing model is not successful in the CEE countries. The research method is to analyze well-known experimental cohousing projects from Poland and Hungary. In both countries, the cohousing creating process is inhibited, so the analyzed projects are not like the Western ones. There are similarities between the two countries, but a fundamental difference is that larger-scale projects could be implemented in Poland. The research questions are the following: How is it possible to implement a large-scale cohousing project in Poland? What factors helped this? How can the Hungarian and other CEE countries learn from this adaptation?

### 3. The terminologies and cohousing creation model - 2000

For the forms of communal living different terms are used by professions, collaborative housing has been adopted as an umbrella term of these housing forms (Czischke et al. 2020). In this paper, the following well-separable terms are used: (cohousing, housing cooperative, and social housing). The main differences between them are that cohousing describes the community aspects of communal living, the housing cooperative focuses on questions of legal ownership and affordability. This form determines the community through the sharing of ownership. Cohousing is a wider category, which can have initiatives based on private property too (Larsen 2019). In contrast to these two definitions, the focus of social housing is to support people in social need, such projects do not necessarily have community usage.

The methodologies for community participation in the Western-European cohousing creation model (co-creation) are well-practiced and contribute to the success of the project (Tummers 2015). Future inhabitants can share different steps of the creation process. So varied levels of shared responsibility can be observed (Scotthanson and Scotthanson 2005), these can be divided into five different groups (Babos et al. 2020): Future inhabitants can take part in the common idea formulation (Fenster 1999), can have the control of design decisions through the participatory design process, and can have complete control in community self-development (McCamant and Durrett 1988). By community self-construction inhabitants can also participate in some part of the building construction (Babos 2019). It is also possible to join a collaborative housing movement and use other groups' experiences (Czischke 2018).

### 4. The adaptation of cohousing model in Hungary and Poland

Although cohousing model has not been fully adapted yet, there is a growing interest in cohousing in the following CEE countries, the Czech Republic (Bestakova 2015), Hungary (Babos et al. 2018), Poland (Twardoch 2017b), Serbia, Slovakia (id22: Institute for Creative Sustainability 2017) and Slovenia (Ogrin 2016). In these countries cohousing NGOs are formed, projects are under development, and some pilot projects, as experimental cohousing developments are being implemented. The adaptation of the co-creation model and the implementation of the cohousing model in CEE countries are different as in Western Europe.

#### 4.1. Positioning the cohousing situation in Poland

Nowadays, profit-oriented and individual developments are mainly taking place in the Polish housing market. Although some housing initiatives start to occur, which can be classified as cooperative housing or cohousing projects. (Twardoch 2017a) The implementation of bottom-up housing development in Poland faces several difficulties, which was summarized by Habitat for Humanity Poland.

The first problem is to create a group of people with the same and appropriate economic capacity and creditworthiness. Money is a significant obstacle to implementing these projects. The wealthiest part of the society could afford participation in developing a cohousing project. Furthermore in Poland, the legal framework of cooperative housing ownership is non-existent, nevertheless, a civil-law partnership agreement or agreement on a joint construction and ownership could be functional as a cooperative one. The scarcity of appropriate plots of landforms may also be a reason for the low popularity of cohousing. The offered plots are either too

expensive – targeted at profit-oriented developers – or unsuitable (too small or regulations do not allow for multi-family housing development). Another barrier to collaborative housing initiatives is the lack of a greater level of engagement of the inhabitants (the members of a cohousing) and the lack of proactive, action-oriented people or groups. Low cohousing popularity in Poland may be also caused by its practical absence from housing debates and innovative solutions. (Kutypa et al. 2018)

Despite these circumstances, some cohousing pilot projects have been implemented in Poland; these differ in their basic approach. Analyzing three initiatives, experimental cohousing projects in Poland represent three different approaches towards the initiator: as a completely bottom-up initiative; benefiting from the support of the city or a non-profit organization.

#### 4.2. Experimental cohousing projects in Poland



Figure 2. Case studies from Poland, in order: Self-build Housing Cooperative Pomorze, Self-build Housing Cooperative Konstancin, Self-build Housing Cooperative Nowe Żerniki (photos: NajlepszaBudowaPL, investmap.pl, R.Paczkowski)

*Self-build Housing Cooperative Pomorze* is located in the suburbia of Gdynia - Wilczno. The project is about 3 multi-unit buildings with a total of 24 apartments. It was founded because of the high prices in the housing market, so the initiators tried to provide housing for the immediate families. The buildings of the Pomorze are simple and are built repeatedly, in order to lower the construction costs. The future dwellers initiated the project, it is an entirely bottom-up initiative. Dwellers took part in the site selection, in the operation of design and construction works. But the difficult element was getting the financing, because of the lack of experience in granting loans for cooperative buildings initiated by the dwellers as a group. The dwellers maintain the buildings together but besides, they have no other shared activities. They own the property together, the project operates as a civil law partnership (Twardoch 2017b).

*Self-build Housing Cooperative Konstancin* is in the Warsaw metropolitan area, in Konstancin. The project is a terraced building with 8 apartments. It was built as social housing assisted by Habitat for Humanity Poland. This help involves: providing legal counsel, supporting the preparatory work, securing material donations, involving volunteers in the construction works, supporting in negotiations with a bank, and readiness for guaranteeing the loan to the families. The future dwellers' involvement

in the co-creation process is strong: they formed the group, selected the site, and created the architectural design together. As the group had a lack of money, they do not have shared inside spaces, they only share the building’s surroundings, the garden. They do not have any common activities, however, they plan on cooperating, when they can organize homeschooling for their children (Habitat for Humanity- Poland 2021).

*Self-build Housing Cooperative Nowe Żerniki* development is in Wrocław. In this case, the project was initiated by the city, under a bigger development project. Over the two-year workshops, there were developed guidelines for the area and also detailed solutions for particular plots and public spaces. It was determined that three plots of the area will be designated for construction groups, so tenders were prepared for bottom-up cooperatives. To proceed with the tender it was obligatory to provide a signed partnership agreement and a ready development concept, in which it was obligatory to design common areas. The chosen project was a block containing 3 multi-unit buildings, with a total of 18 apartments. The project has common areas, like a stroller room, a bike garage, and a common day-room for the organization of events. in all three buildings. There are also extra business spaces: a dentist’s office, a nursery, and a café. The inhabitants took part in the development process and the co-creation, they have common activities too. They maintain the buildings together, organize events and the café is run by the members of one of the self-build housing cooperatives (Kutypa et al. 2018).

**Table 1. Case studies from Poland (Own editing, Source of the data: Habitat for Humanity-Poland)**

	Self-build Housing Cooperative Pomorze	Self-build Housing Cooperative Konstancin	Self-build Housing Cooperative Nowe Żerniki
Basic information			
Status	Finished	Finished	Finished
Date	2012	2018	2014
Housing type	Cooperative housing	Social housing	Cohousing
Building type	3 multi-unit building	Terraced building	3 multi-unit building
Number of flats	24 (8x3)	8	18
Shared spaces	garden	garden	<b>stroller room, a bike garage, common day-room</b>
Shared activities	Maintenance	(plan to have)	events, parties, <b>run a café</b>
Shared tenure	civil law partnership of inhabitants	homeowner association of inhabitants	civil law partnership of inhabitants
Shared creation			
Initiator	dwellers	non-profit organization	city
Financial construction	loan secured with the plot, scheduled construction	loan bailed by Habitat for Humanity Poland,	loan/private founding
Support	no	support in gaining finances and voluntary work from Habitat for Humanity Poland	municipality support in acquiring plots, law support

#### 4.1. Positioning the cohousing situation in Hungary

The Hungarian housing market is similar to the Polish one: it is dominated by developers or individual housing projects. Though some small-scaled housing initiatives start to occur, which can be classified as bottom-up cohousing projects. While the idea of collectivity turned up in market-based or city-supported housing developments (Babos et al. 2018).

However, there are several obstacles to the implementation of the cohousing model in Hungary, these are the same in Poland but may be supplemented by the following: Developing and designing cohousing needs professions to be prepared for the new challenges and the growing number of initiatives, participatory design process, mentoring and mediation methods and the architectural requirements of the community, these topics are missing in architecture education. The other blocking factor is the lack of information about cohousing: it often happens that although someone has a desire and need for community housing, they do not know if this option exists at all or how to start the process. One of the biggest barriers is to be found in the misconceptions about cohousing or rental housing, people think owning a property is safer, which is closely related to the shared rental forced on people in socialist times (Glatz 2016).

Despite these circumstances, some experimental cohousing pilot projects have been implemented in Hungary too. The three initiatives from Hungary represent the different approaches towards the initiator: as a bottom-up initiative; initiated by the municipality of a city or by a non-profit organization.

#### 4.3. Experimental cohousing projects in Hungary



Figure 3. Case studies from Poland, in order: Zugló Housing Coop, Biró Foundation Housing, E-Co-Housing (photos: Rákóczi Collective, Annamária Babos, ABUD -design,)

*Zugló Housing Coop* is Located in Zugló, in one of the popular residential areas outside the center of Budapest. It is a three-story co-living space within a multi-generational building. The initiators (called: Rakóczi Collective) have been working for around seven years to establish the first collectively owned, rental-based housing cooperative building in Hungary. The group's aim is to make a cooperative housing network based on the Zuglo Housing Coop pilot project. The building is owned by a civil law partnership, where the members are the inhabitants of the building and they rent their rooms for a fixed price. The inhabitants took part in the creation process: they negotiated about the loans, organized the co-design, and made construction works too. They share more spaces, co-living means that in this building dwellers have separate bedrooms and share the spaces which are necessary for everyday life. The 7 private rooms are around 20 m<sup>2</sup> per person, with further 150 m<sup>2</sup> common inside spaces (kitchens, bathrooms, living room, storage spaces, collective spaces) and a large garden (Szabó - Szarvas 2020).

*Biró Foundation Housing* is located in the XII. District of Budapest close to nature. The building is co-living within a five-story family supported by a foundation. The In Memoriam Dr. Biró Éva Foundation's aim is to maintain a social project and provide community living and home for young professionals who are working in the field of health care. They have separate bedrooms and share the kitchen, living room, working room, storage spaces, sauna, and the garden with a pool as well. This project is a community of 8-10 young adults, who can apply for short-term subsidized living. The Foundation owns the building and selects inhabitants regarding their social background and possible integration into the community. The Foundation developed the project, so the inhabitants did not take part in the creation. They share the activities of everyday life and caring about profession and self-development through organizing lectures and workshops (Babos – Horogh 2020).

*E-Co-Housing* – “Co-creating a Regenerative Housing Project Together with the Community ” project will be located in Zugló, Budapest. It is a housing project co-financed by the European Union (in the third Urban Innovative Action Program) and the municipality of Zugló District. The E-Co-Housing project aims to build a new multi-unit building with 27 affordable (supported rental) apartments for people in social need. While the E-Co-Housing project development creates a new model of urban social housing with the ecological building technology and the community methods of the cohousing model. It is expected from this new model to contribute to sustainable development in the sense of environment, society, and economy: the affordability, the ecological technologies, and the community methods will increase each other's efficiency. The futural dwellers are not involved in the creation process, the design of the building is based on focus group meetings. They have to apply for the apartment every 3 years. The building will be owned by the municipality, the residents will rent their apartments at a lower price compared to the market. The use of the common multifunctional room, garden, storage, and shop will be specified during the implementation within the framework of the mentor program for dwellers (Kuhk 2020).

**Table2. Case studies from Hungary (Own editing, Source of the data: CoHousing Budapest Association)**

	Zugló Housing Coop	Biró Housing Foundation	E-Co-Housing
Basic information			
Status	Finished	Finished	In planning process
Date	2019	2014	?
Housing type	Cooperative housing	Social housing	Social housing
Building type	multi-generational family house	family house	multi-unit building
Number of flats	2 use as 1	1	27
Shared spaces	Kitchen, living room, garden, storage	no Garden, living room, kitchen, sauna	<b>Multifunctional room, garden, storage, shop</b>
Shared activities	Maintenance, activities of everyday life	activities of everyday life, caring about self-development	Childcare, events, repair work
Shared tenure	Owner: civil law partnership Renter: dwellers (can be the same)	Owner: the foundation, Renter: dwellers	Owner: the city Renter: dwellers
Shared creation			
Initiator	dwellers	non-profit organization	city
Financial construction	Private loans of the members	Biró foundation financialized	City gives the plot, UIA financialize the construction works
Support	no	no	EU support via UIA project

#### **4.4. Obstacles and opportunities of the cohousing creation model in CEE countries like Hungary and Poland - 3000**

Cohousing initiatives are a novelty in Poland and Hungary and could become one of the trends in the housing market. When comparing realized experimental cohousing initiatives in these countries one important thing has to be noted: there are no realized multi-unit building scaled projects in Hungary yet, and there are no projects with real cooperative ownership. It can be stated that the Polish projects emphasized the self-build group, but in the Hungarian project, the common space and activities are more important. Other differences are that the Hungarian projects are from Budapest, the capital, but the Polish ones are from different cities, which could come from the different approaches of the citizens to the innovative housing solutions of the countryside and the capital.

If we look at the six case studies, we can state that the features of the cohousing model are realized in only one project, in Self-build Housing Cooperative Nowe Żerniki. In this project, the municipality predetermined the importance of the model and accordingly supported the project as well and the common spaces in it are much more for the public. Generally, cohousing in Western Europe contain many common spaces or rooms for spending time together. Unfortunately, such places are not created within Polish, Hungarian, or CEE countries cohousing communities.

It can be stated that the community solutions (common idea formulation, participatory design process, self-development, community self-construction, or joining to a collaborative housing movement) in the co-creation process of cohousing are not used in the examined CEE countries. Its theoretical and practical knowledge is a fundamental obstacle to the adaptation of the cohousing model. This is why they try to reach compromises in different ways from country to country and even from project to project, in which the essence of cohousing can be lost.

## 5. Conclusion

An analysis of experimental cohousing initiatives, both Polish and Hungarian, leads to the conclusion that the essence of the cohousing model is – at least for now – feasible with financial and legal support. Furthermore, to prevent modifying the original concept of a cohousing project, all actors as experts, initiators, and supporters would need continuous monitoring of the projects. This statement is also supported by the fact that initiative groups in Hungary often appear and disappear (for example Öko Közösségben Élni, Fainfalva, B-Oldal, Rural-cohousing, Király co-living), seeing the amount of work ahead (CoHousing Budapest Association 2020). The opportunities for these initiative groups could be much wider with indirect and direct support and help from the experts. The results of the research reveal that the following steps could lead to the implementation of cohousing model in the CEE countries: From the expert side, a continuous learning, dissemination of knowledge about the cohousing and co-creation model would help the community part of the projects. From the supporters (both civil and public sector) side, the change of legal structure enabling collective self-build and ownership, as well as providing of specific real estate (either empty houses or empty plots) to communities for cohousing projects.

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# Problems of Land Division as an Essential Instrument of Regulation and Urban Regeneration in Post-Soviet Russia

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## ABSTRACT

*The transition to market economy in the post-socialist countries marked the need for the formation of property rights, a legal real estate market and therefore zoning and land-use regulation system. Subsequently, the process of land subdivision has started, and continues up till the present moment. This paper is focused on the practises of land division in two types of territories in Russian cities – that of historic cores and Soviet large housing estates. In post-soviet economy the consequence of the privatization policy shows that it is focused on the premises by themselves, but not the buildings and plots. In this article we highlight the spectrum of problems connected to this phenomenon, focusing on those related to management, financing, and renewal of territories.*

## KEYWORDS

*parcellation, ownership, co-management, microrayon, historic core*



*Figure 1. Mass housing development of microrayon (Source: author's own materials)*

## 1. Introduction

Socialism gave birth to a special type of urbanization and impacted new urban processes, which changed functional content with city morphology. One of them was the elimination of private ownership. The State was the only subject responsible for the maintenance of the whole estate. In some countries with similar institutional organizations, however, there were differences in property management: in Serbia, for example, socialism supposed decentralization, self-management and market elements in Planned Economy and urban planning. (Antonich, 2016) This land use structure saved some continuity there while, in Russia there was the total loss of ownership and understanding of the role of parcels in city development.

Peculiarities and problems with maintenance and management are notably shown in microrayons, the territories of multistory mass housing. These types of areas accommodated 40% of the population in Post-Socialist Europe, and 10% in western European countries (Kempen et al., 2005). Microrayon structure is totally different from that of the naturally developed historical city that has been appearing via agreements among various owners, and the precise borders between private plots and public spaces that have characterized it. (Melnikova, 2020) Because of the huge size and open plan structures, there are no differences and borders between the inner and public spaces of microrayons. Their planning models support the collective use of all areas as paths, greenery zones and playgrounds of all kinds. After apartment privatization, residents were left alone with such concepts and controversial uses.

Free privatization is not finished yet, and almost every condominium is a mix of privatized and municipal apartments. This phenomenon not only complicates the management and modernization of these buildings, but also reduces the possibility of strategic territory development. A specific incoordination of ownership is revealed in controversial situations where municipalities manage the land around buildings with 90-100% privatized apartments. Low percentage of the dwellers without legal rights for the land complements the low level of the development of civil society.

Immaturity of civil society, underdeveloped legal bases, and the incomprehensibility of financial mechanisms define the contradictions in land division. The approach to land division depends upon municipal policies and the quality of Land

Use and Zoning Regulations. As a rule, such documents do not regard parcel regulation as a condition of sustainable land use management. The result of these problems is land use disorder, which leads to an erosion of the urban texture and a morphological misbalance. This reduces the potential for complex improvement of the urban spaces. We look at this issue through the prism of land ownership, which reflects the relations of State and Society and has an impact upon the approach to territory planning.

We believe the problem lies with the insufficient definition of the legal bases related to the management of apartment houses and their territories. Important lessons related to this can be drawn from co-housing as an integrated practice.

## **2. Transformation of the legislation in the realm of land relationship in Russia**

Before describing present problems, we have to mark some of the key points of Russian land use relationships.

### **2.1. Before 1917**

Urban development was based on the principle of private parcels and separate households, with their own buildings included within the borders of the plot. An owner's relations were regulated by Neighbor Rules of Town Codes: rules which set the location of a building's borders relative to the plot, the position of windows, and the shape of the roof relative to the neighbor's yard.

Legislation of the 19th century developed within the setting of a civil society which undeniably valued private ownership. It is for that reason that it was protected much better then than it is now.

### **2.2. Soviet Period**

The development of land turnover and relationships ended in 1917 with the adoption of the Decree of Prohibition on Real Estate Trade. Regulations on "Socialist land management" and "On Measures for conversion to socialist land-use" (1919) set only two forms of land-use: State and Collective. The expropriation of property without compensation was the "condition for arbitrary interferences of the officials in land-use affairs, which consequences we are still watching" (Dutlova & Nikonov, 2008). With the lack of property rights for real estate and market economics, the only subjects of development were municipalities and state enterprises.

The elimination of private property created an issue related to the maintenance and control of vast amounts of unregistered land. Meanwhile, state policy was focused upon industrial development, and data on residential land became unclear and blurred as a result. (Goncharova & Krivokoneva, 2011) The legal borders for parcels of households within the historic centers of the cities disappeared, and the understanding of responsibility within the borders of the plots was lost. At first the responsibility was assigned on so-called House Committees, then later on the Neighborhood Committees whose sizes were totally different from pre-revolutionary households and were much larger. The phenomenon of the Neighborhood Committee substantially explains the problems of communal management and maintenance in today's microrayons.

## 2.3. Nowadays

After the breakup of the USSR, the State stopped being the only subject of territory development; privatization diversified the list of stakeholders who have influence on urban development. The first Urban Code was developed in 1998 for the regulation of the use of privatized land plots and real estate. This document announced the principles of zoning regulations and obliged municipalities to develop The Regulations of Land Use and Development. The conditions to use these kinds of documents emerged only after adoption of the Land Code in 2001 and the Urban Code in 2004, with a number of changes targeted at developing the system of territorial planning and urban zoning regulations. (Trutnev et al., 2006)

The legislative acts were intended to move urban development from individual decisions to legal regulations. They became, however, an additional administrative barrier because of a possibility of unlimited changes due to their low level of detailing. The quantity of regulated parameters is incomparably low compared to European & American analogues. High level of land use without registration rights for the land and low level of civil society development are the key problems preventing the proper use of Land Use & Urban Development Regulations. Additionally, one of these issues hides the peculiarities of privatization.

The “Law of Housing Privatization in Russian Federation” (N 1541-1 from 04.07.1991) started the process and, in December of 1992, citizens got the right to a one-time free privatization of their dwelling (Kostrov, 2011). By 2016, more than 80% of all residential premises were privatized. Russia had become one of the leaders by share of privatized housing. Nevertheless, the peculiarity is that the sizes of the lots are very small. Many apartments are in collective ownership with shares even smaller than one room. Therefore, these kinds of owners are incapable of maintaining and managing their estate. This is in contrast to the situation in other countries where ex-social housing was left under the control of large companies. (Bernt, 2018)

Russian privatization is a voluntary process. Some dwellers are able to save “social rent” status, which can be beneficial for a number of reasons. First of all, it is tax-free real estate and land. Secondly, there is no need to pay an overhaul fee. And third, there is a possibility to get services from the State such as repairs and the provision of similar housing in the case of an emergency. There are restrictions, however, on using it for rent, the registration of the tenants, sale, the will and replanning. Thereby, in almost every multi-apartment house which was built before the epoch of privatization, we can find a mix of social tenants and owners with controversial rights, intentions and abilities. Only the owners of premises, however, can be the owners of the shares of collective property. Such circumstances lead to complicated relationships in the administration and maintenance of the houses and the areas around them. This is in turn reflected in the form of Russian cities. One of the reasons for this is that only residential premises were transferred to ownership during the privatization of apartments in Russia. Registration of shared ownership of land and common property required a separate voluntary procedure. (Kostrov, 2011) Therefore, such a form of privatization has no connection to the land plot, which is truly a physical embodiment of legal property rights.

## 3. The microrayons

Owners are responsible for the maintenance of the property, as well as for its management under the Housing and Civil Law. This duty is a consequence of the ownership. (Genzler & Lykova, 2009) As such, the effects of free privatization

mentioned above influence both ways of management and land division. While the historic centers have the original parcels which could be legal basis for present land division, microrayons' structures were initially shaped without formal borders and were not meant to distinguish responsibilities. Microrayons' inner areas are as public as the street--that is why we have faced problematic implementations of this legal framework.

There is a choice for apartment owners over whether to register the plot under and around the house blocks as their collective property. (Housing Code of the Russian Federation, 2004) Thus, there are three scenarios of property ownership which will be considered further.

1. First scenario. Plot is formed and registered by the perimeter of the building. (See Figure 2.)

Area around the house is left undivided. It is used by homeowners, although it is formally owned by public authority. Therefore, maintenance and financing of the area around the house is governed by public authority. This approach is widespread in Samara, Chelyabinsk, Novokuibyshevsk and some post-Soviet countries. (Malakhov, 2016)

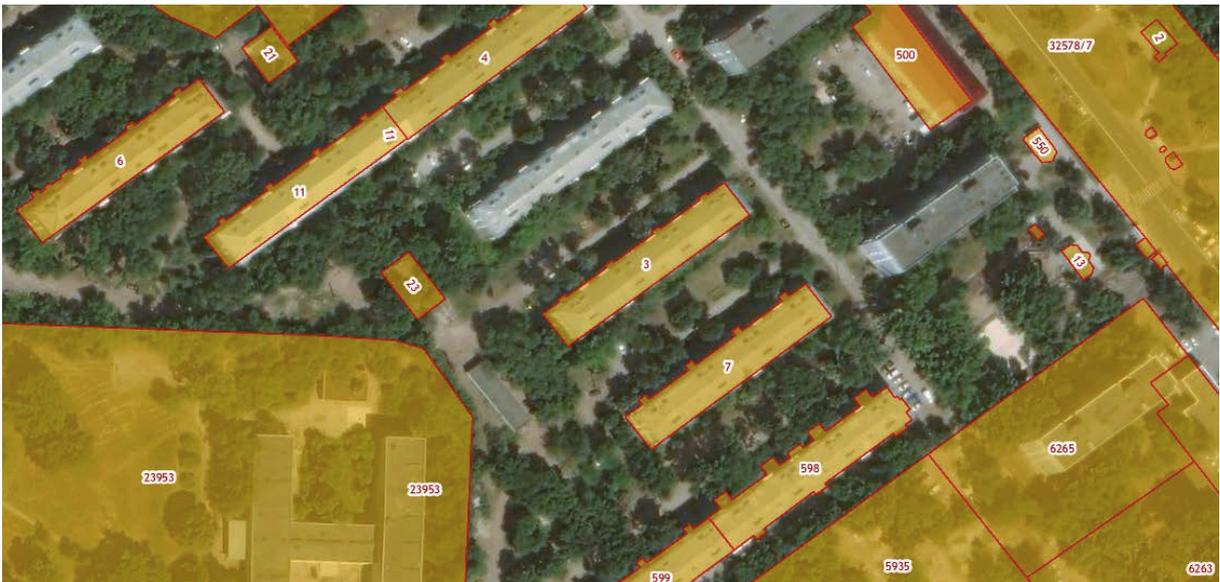


Figure 2. Fragment of the land division in Samara (Source: [pkk.rosreestr.ru](http://pkk.rosreestr.ru))

Evidence shows that this approach follows from the current situation. There are 3 ways to manage apartment houses in Russia: managed directly by owners, by homeowners' associations founded by owners, and via the transfer of functions to service management companies. The first 2 ways struggle with huge financial and organizational obstacles. Besides, because of poorly developed civil society institutions, residents rarely take responsibility for house maintenance and especially plots including the courtyard. Consequently, residents often transfer maintenance and management of the territory to public authorities.

Therefore, public authority controls the plots, which should be owned and controlled by its users - the residents. This leads to a number of negative effects. Firstly, a large part of urban territory is managed ineffectively and does not bring income to the city budget. Secondly, apartment residents use the land for free while not owning it, which results in uncertainty about land rights. Additionally, this provokes conflicts and economically motivated temptations for public authorities and developers

to occupy the land. This in turn can lead to the formation of new plots in the courtyard, and unsystematic in-fill buildings or other public authorities' needs. (Trutnev, 2015)

2. Second scenario. There is another approach - "complete land division" - used in Novosibirsk, Ekaterinburg, Kazan, Nizhny Novgorod, Kaliningrad, Tolyatti, Perm, Irkutsk, Saint Petersburg and in many developed countries as well. (Malakhov, 2016) (See *Figure 3*.)

In this case all the territory is divided into parcels which allow for distinguished responsibilities and gives residents the right to manage their own property - land plot of the apartment building. This approach is more systematic than the first one. It was used in Russia until 2014, when the requirements for a plot's parameters according to the original norms (those of the construction time) were eliminated. (Town Planning Code, 2014) "Complete land division" means that the spending on courtyard maintenance is transferred to the homeowners, which helps to save budget funds. Residents, however, are often not ready to be responsible and pay taxes for that. Because of the different income levels of the dwellers, service management companies hired by them face shortfalls in funds and can not fully assume their responsibilities. (Klimanova & Stadnikov, 2016)



*Figure 3. Fragment of the land division in Nizhny Novgorod (Source: pkk.rosreestr.ru)*

3. Third scenario. Situation "in between" occurs where the amenities close to the house are included in the parcel. This is typical for Moscow, Saint Petersburg and Ulyanovsk. (See *Figure 4*.)

In this case there are still undivided parts between plots, which make up close to 50-60% of the block. (Malakhov, 2016) This can lead to negative effects as in the first approach "bordered by the footstep of the building".



Figure 4. Fragment of the land division in Saint Petersburg (Source: pkk.rosreestr.ru)

All things considered, the way land is divided depends on the legislative base of land ownership, the financial instruments and the extent to which civil liability is sophisticated. Nowadays, there are no mechanisms to oblige owners to take responsibility for the management and financial support of the common property of an apartment building. (Klimanova & Stadnikov, 2016)

It could be possible to apply other countries' practice of "successive land use development" (for instance, Western European countries). However, we can not copy foreign experience. For example: in Germany, the ownership structure as well as the financial support differ. There, the existing municipal housing administrations and cooperatives were simply reorganized as commercial companies. The majority of residents remained tenants, and the housing stock they inhabit is managed by public, cooperative, or private companies. (Bernt, 2017) In this case, apartment, house and land ownership coincide, which makes coordination and financialization easier and contributes to the realization of development goals. So, in the Russian situation, fragmented ownership and few opportunities for public authorities becomes the major obstacle of the proper maintenance of microrayons.

## 5. The historical centers

The historical centers of cities are also in danger under the conditions of unregulated capitalism and market institutions, which are not fully formed. Here, the already listed problems with ownership structures, and the prevailing use of land-surveying by the footprint of buildings as in Scenario 1, leads to:

1. The fragmentation and destruction of the historical borders of households, when there are several small-sized plots within the borders of one historical parcel. The basic idea of historical Neighbour Rights Regulations is ignored when forming the new plots. (See Figure 5)

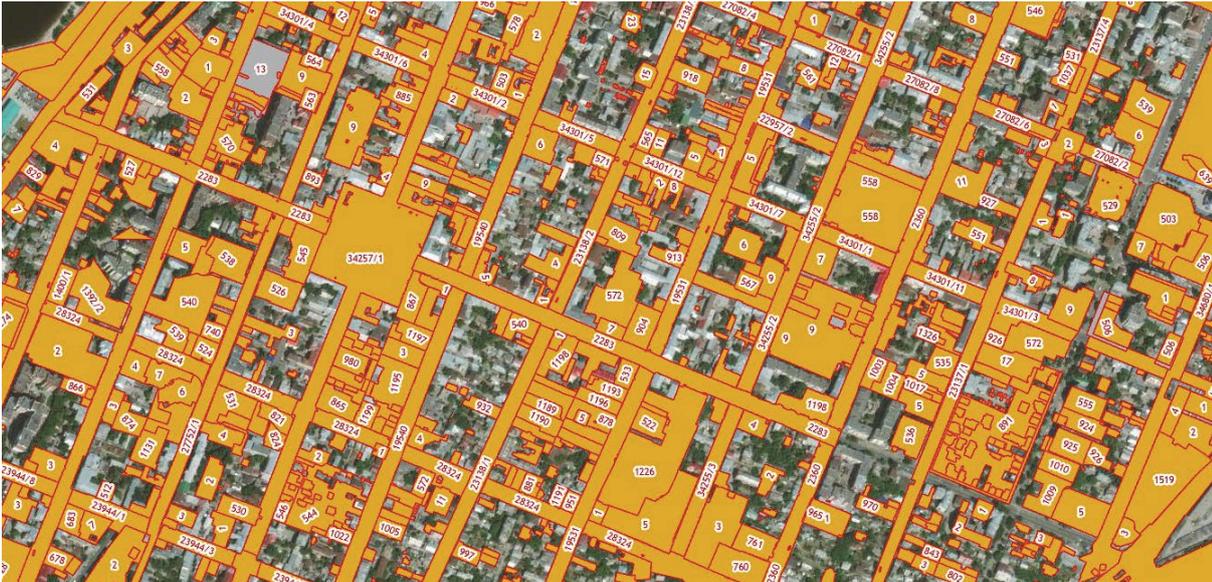


Figure 5. Fragment of the land division in Samara's historical center (Source: pkk.rosreestr.ru)

In addition, the Land Code and Zoning Regulations of most Russian cities do not reflect the continuity of historical parcellation as a key point of sustainable planning. Zoning rules often do not contain complete and understandable requirements for the permissible parameters of the plots. For example, in Samara's Zoning Regulations most of the parameters for land plots are set from 0 to the infinity. (See Figure 6.) This, in turn, is the opposite to other eastern european countries, like Serbia, where a lot more parameters (around 6) are regulated in relation to land plots in the historical center. This condition does not allow the disorderly actions in land division activities to be completely avoided in Russian cities.

		types of zones														
types of use	Для ведения личного подсобного хозяйства (приусадебный земельный участок)	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	300 <sup>∞</sup> /
	Блокированная жилая застройка	2.3	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	-	-	-	-	-	-	-	0/∞
	Среднеэтажная жилая застройка	2.5	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	-	-	-	-	-	-
	Многоэтажная жилая застройка (высотная застройка)	2.6	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	-	-	-	-	-	-
	Хранение автотранспорта	2.7.1	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞
	Предоставление коммунальных услуг	3.1.1	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞	0/∞

Figure 6. Fragment of Samara's Zoning regulations according to min/max area of the land plot. (Source: Zoning of Samara, approved by the resolution from 26.04.2001 No. 61)

2. Such underregulation legalizes the possibility for the original structure of the historical quarters to be changed by enlarging them with the demolishing of low-rise buildings. Therefore it has a destructive influence upon nearby plots.

Thus, the modern pattern of land plots is in a state of crisis and “leads not so much to the ordering of land relations as new problems are being formed” (Nikonov, 2008)

## 6. Conclusion

Today’s random form of parceling shows the consequence of the privatization policy focused on the premises by themselves and not the buildings or plots. In historic centers the destruction of the household as an all-in-one legal, economic & administrative organism led to a changing of the form of management. Such kinds of legal gaps can be both an object of manipulation and also the reason for the destruction of the essential planning structure of historical neighborhoods, either by fragmentation or by the enlarging of plots via the demolition of historical buildings. For the most part, Land-use Regulations do not set clear parameter limitations on the plots. This is a regulative instrument that is not used enough.

While an approach of sustainable maintenance seems rather clear and is based on the rethinking of historical parceling, the methods for adapting microrayon areas for today’s market reality are very blurry. Microrayons were created as a collective territory available for everyone without borders - it is totally opposite of traditional parceling. It was made as a shared territory and had to be maintained by a huge manager such as the State; their continuation can be only provided for by large management companies without possibility of direct self-management. However, is it possible to divide microrayons into parts for co-management?

With such a fragmented structure of property in large multiapartment buildings, each collective decision became an unsolvable problem. A significant number of dwellers are not ready to keep a responsibility and pay taxes for the land around their apartment houses. This is the reason for the high amount of the land without a clear understanding of who is responsible for its maintenance. Generally, most residents do not understand that land ownership is a guarantee of their rights against anyone else’s manipulations – additional development, destruction of greenery etc. (Bardin, 2013)

In order to overcome such a problem, we can adopt the idea of ‘active citizenship’ from the co-housing practice. This mode of governance involves new forms of disciplinary power, i.e., the coercive disciplinary techniques introduced when civil society agents do not perform responsibilities imposed on them, such as the self-management of housing. Contracts or membership protocols often specify the amount of time to be contributed to the management of the project. (Qu & Hasselaar, 2011) The system of co-management can be developed in order to give understanding of land-use responsibility and increase the role of residents in territory maintenance by involving them in the process of spatial planning.

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## Space Syntax & OCOKA: Possibilities of Using Geospatial Technology for Military Analysis on Urban Terrain

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### ABSTRACT

*A city has to withstand several different negative impacts, be it a natural (e.g. global warming), social (e.g. unemployment), or a sudden disaster. Wars can be considered the worst catastrophe of civilization. Security policy experts say there will be more and more Military Operations on Urban Terrains (MOUT) in the future due to ongoing urbanization in the world. Urban terrain requires new ways of warfare from the military to end the conflict with as few civilian casualties as possible. The extent and success of adaptation are crucial in the face of such a conflict - both for authority but even more so for the inhabitants. This research would help in this adaptation process: The spatiality of three different mass housing areas is examined in Budapest to answer the question: Could urban space analysis help for the military terrain analysis? A historic neighbourhood (in District 13th), comparing the development of a state socialist mass housing estate (József Attila housing estate) and a contemporary residential area (BudaPart). Although Budapest is not expected to face uprisings, violent conflicts have erupted in several post-socialist cities in recent decades.*

### KEYWORDS

*MOUT, SpaceSyntax, OCOKA, Budapest, urbanism*



Figure 1. Map of Budapest, marked with the three research sites.  
1. Újlipótváros 2. József Attila housing estate 3. BudaPart  
(Source: selfmade marking in a map from schwarzplan.eu)

## 1. Introduction

### 1.1. Urban warfare

The history of war coincides with the history of humanity. The earliest generally accepted evidence of war was in Jebel Sahaba, Sudan, more than 12,000 years ago (De Souza, 2008). The phenomenon and the art of war have been described by several famous thinkers, such as Plato, Cicero, or St. Augustine of Hippo (Jayasena, 2012). In his book *The Art of War*, Sun Tzu (2016) advised that “the worst policy is to attack cities”. But with the urbanization of the world, more and more wars will invade cities. That can be traced back to mainly 2 reasons: (1.) the force of a more urbanized world and (2.) the transformation of warfare (Resperger et al., 2013). In addition to (or instead of) regular warfare, we can talk about asymmetric, irregular, or hybrid warfare in several places (Isaszegi, 2015). Forms of combats that are different from traditional wars that abide by international agreements can be considered irregular. Examples are the work of Mao Zedong, Che Guevara or the conflict in eastern Ukraine (Somkuti, 2014). Although guerrilla wars or partisan battles continued throughout the 20th century, urban guerrilla actions have increased in recent decades (Kőszegvári, 2009).

The urban terrain provides a different kind of isolation and invisibility for insurgents. Experience shows that urban uprisings could be successful only if they can integrate the opportunities provided by the urban and social environment (Resperger et al., 2013). Although the development of an uprising depends on the social factor (social conflicts, migration, ethnic or religious differences, ghettoization, etc.) (Somkuti, 2014), its success is based on deep knowledge and proper use of the physical built environment. But the same is true of regulating power. If they successfully and quickly adapt their regular strategies to the opportunities and challenges of urban terrain in the event of an irregular urban uprising, they can minimize the damage to the population. They can successfully defeat the insurgents. This research aims at a quick and detailed process of cognition of the physical environment.

## 1.2. Urban terrain

The oldest city designation and one of the oldest Egyptian hieroglyphs is the *niwt* (Handlin & Burchard, 1963). It depicts a circle with a cross inside. The cross means the human relationships with those inside and outside the circle, the market, the main square, the street, the communication, the innovation. The circle represents wholeness, tradition, unity, boundary, the difference between in and out, protection. This protection can be material or mental. For research, the circle part of this ideogram, and within that, the interpretation of material protection provides a starting point.

Until the 19th century, material protection focused on border zones, with defensive walls, ditches, and gates protecting cities. Thanks to the grandiose urban architectural interventions of the age, cities breathed a sigh of relief and demolished several city walls. The narrow, dark streets have been replaced by boulevards, ring roads, and avenues (Paris, Barcelona, Vienna, Budapest, Moscow) (Szabó, 2009). However, by replacing the luscious street network with an orderly and lightly transparent urban fabric, not just the quality of life of residents has improved, but space has been becoming more controlled. In the event of a possible revolution in the new urban fabric, the military power could react faster and harder. It could more easily exploit its dominance (e.g. the overthrow of the Paris Commune of 1871) (Forgács, 2020). Instead of eliminating external threats, overcoming internal danger has become crucial.

The social processes that began in the 19th century had an intense impact on 20th-century architecture and urbanism. It was a kind of race against time - new social needs and issues had to be solved, while the city also had to be prepared for possible future scenarios (Meggyesi, 2018). The investments sought to realize the image of a more livable city, but it gave controllability for power that had never been experienced before. LeCorbusier's theory of urban architecture (Le Corbusier, 1967), blocks and flats of housing estates (Paládi-Kovács, 2020), open spaces, and parks (Benkő, 2017) have all supported the strengthening of urban militarization (Davis, 1992/1999-2000) (Sági, 2019). This process takes a different path due to postmodernism (Meggyesi, 2018) in Western-Europe, and the regime change in post-socialist countries. Although apparently for today's urban architecture, the physical exertion and control of power have waned since the 20th century, we must not forget the more and more proliferating gated communities (Kovács & Hegedűs, 2014) or the fenced-in public space influences (Sorkin, 1992), as well as the growing presence of surveillance systems (Minton, 2009). It is feared that the process of urban militarization has not stopped. It has only changed technology - from real to virtual.

## 2. Methodology

The topic of Military Operation in Urban Terrain (MOUT) is increasingly burning due to the high degree of urbanization and the concomitant armed urban conflicts that arise (Headquarters Department of Army, 1979) (Desch, 2001). Different doctrines and aids attempt to convey to soldiers what to look for in each unique characterized neighborhood, what protocol and tactics to follow to be successful (Ellefsen et al., 1979) (Ellefsen, 1987). In addition, the importance of analyzes for MOUTs have emerged (Medby & Glenn, 2002). In the course of the research, I analyze three different sites according to the OCOKA Military Terrain Analysis method (National Park Service, 2009). A site must be examined through five variables, and the combination and interaction of these form the military tactic according to OCOKA. The description of the 5 principles according to the American Battlefield Protection Program:



O – *Observation* is the ability to see forces and key aspects of the terrain in order to judge strength, prevent surprise, and respond to threats. *Field of Fire* is an area with a direct line of sight that weapons may cover/fire upon effectively from a given position.

C – *Cover and Concealment* is protection from enemy observation and surveillance, including features that protect both horizontally and vertically. Cover is protection against enemy fire, both direct and from shelling.

O - *Obstacles* are natural or manmade terrain features that prevent, restrict, divert, or delay military movement. There are two categories of obstacles: existing and reinforcing. The presence and difficulty of obstacles determine whether terrain is unrestricted, restricted, or severely restricted.

K – *Key Terrain* is any ground that must be controlled in order to achieve military success. Key terrain typically offers control of a local objective or an important transportation route.

A – *Avenues of Approach* is any relatively unobstructed ground route that leads to an objective or key terrain. The size of an attacking unit is limited by the breadth and difficulty of its avenue of approach. Variables that can affect avenues of approach include surface conditions, topography, and drainage characteristics.

The accuracy, speed, and versatility of military analysis are terribly important in a conflict, as decisions made from them can lead to innocent lives. That is the main reason, why an innovative, fast and user friendly quantitative analysis based on geospatial computer technology could help to make an OCOKA analysis for MOUT. The axial maps underlying some of the analysis were generated using SpaceSyntax software. This method helps interpret (line length, integration, mean depth, intensity) and visualize space (Turner et al., 2003). SpaceSyntax is a well known tool for urban planners and researchers. It helps understanding the spatial segregation, social disadvantages, the patterns of security and insecurity, and the movement patterns. I assigned maps that are either an analysis of the street network or the open space between buildings to the five principles of the OCOKA. The hypothesis is that the results of the SpaceSyntax maps could play a major role in a MOUT analysis.

Due to the geometric boundaries, only the middle of the images can be considered correct. Another weak point of the software is that the maps are the representation of reality in 2D that is the reason why we couldn't take certain 3D elements (a street that continues under a bridge, two-level traffic junctions, spatial topographic differences) into account. For the analyzes, I used open-source and self-made maps depicting three sites.

### 3. Terrains of Budapest

The increased risk of urban uprisings is affecting not only the peripheral states (Chechnya, Syria) but also the capital cities of Europe; with varying degrees of intensity, but it is present in the 21st century (the Paris intifada in 2005 or the street riots in Budapest in 2006) (Resperger at al., 2013). For this reason, the theoretical study in Budapest can help prepare for future challenges. Due to the urban architecture attitudes of the three selected mass housing neighborhoods in Budapest, it is possible to use the results of the analysis for the resistance of other post-socialist cities. The three venues embody the most typical high-intensity, urban installations of post-socialist cities: a premodern (turn-of-the-century) neighborhood, a modern (state socialist) housing estate, and a “post” modern (contemporary) example. The sites are residential areas located in different parts of Budapest between the inner city and the suburbs (see *Figure 1*).

### 3.1. Újlipótváros

Újlipótváros is one of the latest historical residential areas of the capital, located in the northern part of the city. With the growth of Budapest, the quarter moved to a downtown position. Simultaneously with the construction of the Grand Boulevard, a new master plan for the district was prepared (Berza, 1993). Construction began in the late 19th century, and the area gained its present appearance by the beginning of World War II. The 1933 zoning plan strictly regulated the area. Therefore, a unified cityscape could emerge. Each block consists of 6-20 different plots, on which buildings with various floor plans, styles, and architectural characters were constructed. The buildings are on average 5-6 storeys high and are built of traditional building materials (e.g. brick masonry). The district is characterized by a closed framed urban morphology, an orthogonal, chessboard-like road network, highly structured and well-formed open spaces, and inner connecting yards (Benkő, 2012) appearing in the middle of the closed framed blocks. It could be a typical example of *aligned attached* area according to Ellefsen et al. (1979) (see Figure 2./1. & Figure 2./4. & Figure 2./7.).

### 3.2. József Attila Lakótelep

The József Attila housing estate was built in the southern part of Pest according to socialist modern principles. On the site of a sprawling emergency housing estate, which was demolished the construction began in 1957. The housing estate was completed in two phases, 7101 flats were finished between 1957-67 and a further 899 flats between 1979 and 1981 (Ferencváros Önkormányzata, 2009). That was the first housing estate in Budapest to be built using large-scale industrial technology (prefabricated), prototypes, having a *alignes detached* morphology. All buildings in the housing estate are detached point houses or longhouses. Buildings are usually 10 storeys high, mostly facing NE or SE. According to the Athens Charter, the district is freed from the pressure of the street, and open space is created. The street network is organically organized, mimicking spontaneity. This kind of spontaneity can be observed both in the diverse urban morphology pattern and in the use of different types of designs. There is no private or semi-private outdoor space (garden, yard), only the connected row of public green spaces (see Figure 2./2. & Figure 2./5. & Figure 2./8.).

### 3.3. BudaPart

The residential park under construction in the southern part of Buda is called BudaPart, which is a neoliberal investment based entirely on market principles. The area is in a rarely lucky location - close to the city center and next to the Danube, with a riverside beach. The project started in 2017 under the care of a private developer, based on the plans of a Danish architectural firm (ADEPT). The area is mixed-use, with 3,000 flats, 250,000 m<sup>2</sup> offices, and 15,000 m<sup>2</sup> commercial spaces under development (Építészforum, 2018). The investment is perhaps the largest housing development since the change of regime in Budapest. The master plan is designed from a contemporary urban architecture toolkit, rivaling the quality of contemporary international neighborhoods. The building stock of the investment is diverse, with different floor plans characterizing the 5-15 storey high houses. The structure of the buildings is reinforced concrete. The houses are located in opening framed blocks, which are connected by a traffic-damped, organic, broken-chessboard-like street network. It could be called a *nonaligned detached* area. Public spaces and public parks are well structured and demarcated. The inner courtyards of the blocks are physically demarcated, private, but visually open (see Figure 2./3. & Figure 2./6. & Figure 2./9.).



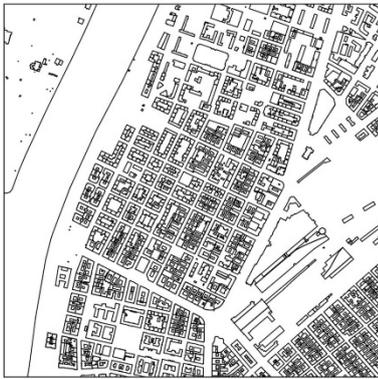
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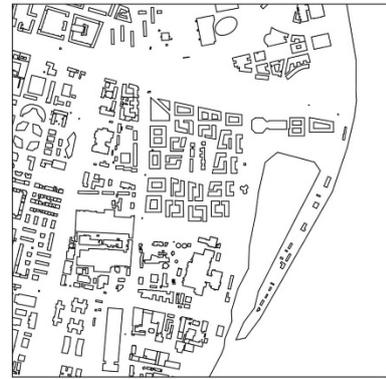
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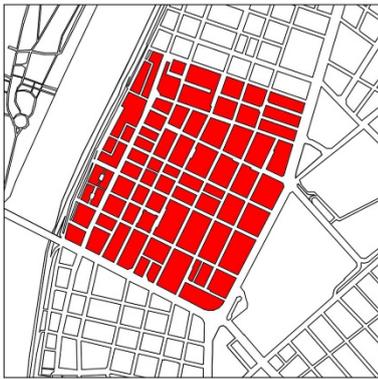
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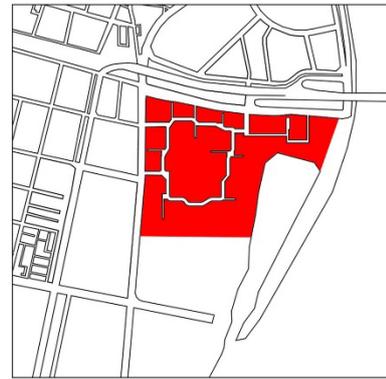
6.



7.



8.



9.

Figure 2. Maps of the research sites, showing only the buildings (1-3 or only the streets (4-6))  
 1. Aerial photo of Újlipótváros (Budapest Főváros XIII. Kerület Önkormányzat Polgármesteri Hivatala, 2013)  
 2. Aerial photo of József Attila housing estate, 1968 (Source: fortepan.hu)  
 3. Aerial photo of Budapest (Source: epiteszforum.hu)  
 4. Buildings of Újlipótváros (Source: selfmade)  
 5. Buildings of József Attila housing estate (Source: selfmade)  
 6. Buildings of Budapest (Source: selfmade)  
 7. Streets of Újlipótváros (Source: selfmade)  
 8. Streets of József Attila housing estate (Source: selfmade)  
 9. Streets of Budapest (Source: selfmade)

## 4. Results

The research presents the SpaceSyntax maps made from the three site plans by going through the 5 principles of the OCOKA analysis. Each SpaceSyntax map was assigned to each principle of the OCOKA analysis. Although it is exciting to see the results of this research for each area of Budapest, this is not the focus of the research. The usability of SpaceSyntax is investigated in an OCOKA analysis in a MOUT. The aim of the research is to show in which cases geospatial analysis works well and in which cases it is necessary to question the results.

### 4.1. Observation and Fields of Fire

For *Observation and Fields of Fire* analysis, perhaps the most obvious is to use SpaceSyntax maps. Using the site on a plane is not much different from reality - although it does not take into account the potential of tall buildings.

The open spaces of the three studied areas can be considered as the base set. That means we only consider the built environment (and the river) as an obstacle - not the green environment (trees, bushes) - which of course distorts the result. By arranging the *Lengths of the Lines* produced by the program according to a color scale (from blue to red, from the shortest to the longest), we can get the best locations of the areas for this principal.

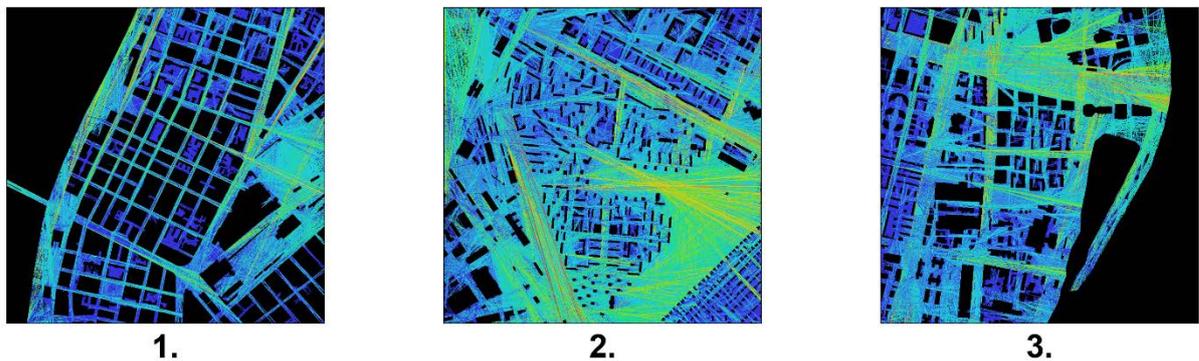


Figure 3. *Lengths of Lines Map Analysis (Outer space)*  
 1. Újlipótváros 2. József Attila housing estate 3. Budapart  
 (Source: selfmade with DepthmapX)

On the three maps, the warmer hue can be observed on the protrusions, and the wider streets - i.e. these places are the most favorable in terms of visibility (see Figure 3.) Of the three locations, the József Attila housing estate has the best visibility areas (due to the flowing open space and the nearby Smallforest), while in second place is the contemporary district, the BudaPart. The historic Újlipótváros has the weakest visibility conditions.

It seems that *Lengths of Lines* analysis in SpaceSyntax could work very well for the *Observation and Fields of Fire* analysis.

### 4.2. Cover and Concealment

To examine the *Cover and Concealment*, the mean depth analysis of the outer space of the three sites could be a good choice (see Figure 4). This test method shows which lines can be used to get to the other lines through most connections. It means the warmer colored lines are in the most peripheral position, while the coldest zones are in the most central position. Most of the peripheral areas are on the edges of the

maps - which does not mean that they are in a peripheral situation in reality, but only because of the issues of the analysis technique.

Perhaps the most interesting of the maps is that of the historic Újlipótváros, where the opening inner courtyards can be identified as a good cover and, due to their location, are very close to the open and centrally located chessboard-like street network. The least ideal location is the urban form of BudaPart, where compared to other maps, there may not be a really peripheral situation. Most of the Attila József housing estate has a uniform, slightly closed design. This means that there is no clearly identifiable cover within the housing estate, but due to its construction it is a more protected neighborhood than BudaPart.

All in all, from *Mean Depth* analysis we got a pure, logical and understandable result that could be well used for *Cover and Concealment*.

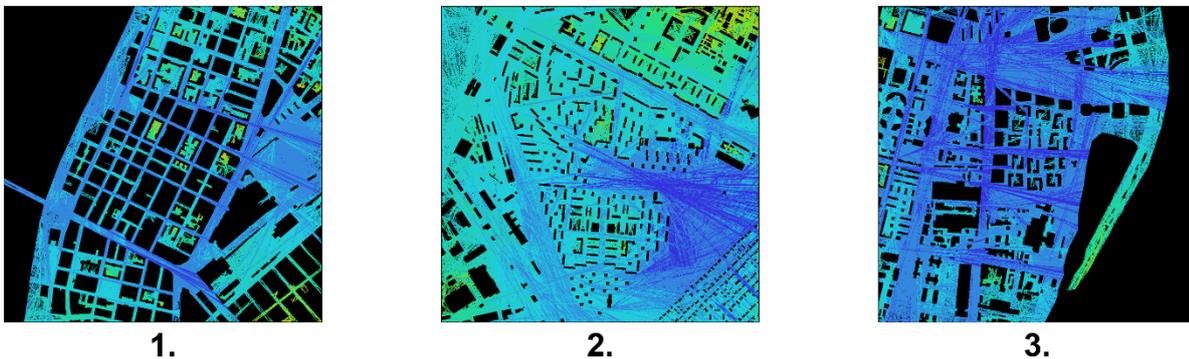


Figure 4. Mean Depth Map Analysis (Outer space)  
1. Újlipótváros 2. József Attila housing estate 3. Budapest  
(Source: selfmade with DepthmapX)

#### 4.3. Obstacles

With SpaceSyntax analysis, determining the possible locations of *Obstacles* is may the most difficult. The problem is caused by the fact that for OCAKA analysis, we would need a map where the width of the geometry shapes (roads and spaces) would be one of the most crucial factors. However, SpaceSyntax cannot do this, as it is a GIS software based on graph theory, where the geometry of maps consists only of lines and their connections (points). That is, without the most needed factor, the results obtained are far from reality. Still, I try to show the importance of a few other aspects with relativised entropy maps.

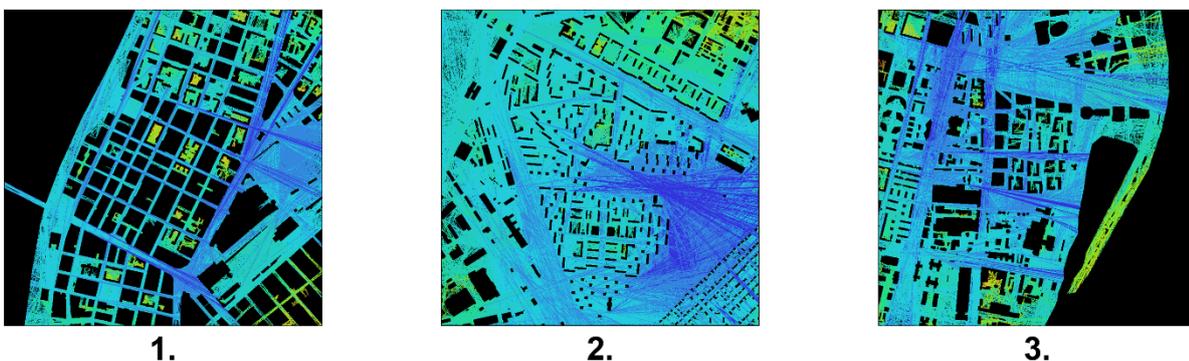


Figure 5. Relativised Entropy Map Analysis (Outer space)  
1. Újlipótváros 2. József Attila housing estate 3. Budapest  
(Source: selfmade with DepthmapX)

*Relativised Entropy* takes account of the expected distribution from a space of origin. That means the most enclosed, segregated areas are the warmest in color. The maps are similar to those for mean depth analysis, but perhaps highlight the difference between closed and open spaces stronger.

Examining the maps depicting the outer spaces (see Figure 5.), the inner courtyards of Újlipótváros or the Kopaszi Dam (peninsula) opposite the BudaPart can be easily blocked or barricaded. These are the places we can close with the fewest obstacles. Thus, for example, in the case of the Kopaszi Dam or just the inner courtyards, it is enough to close only 1-1 sides, so that the area behind it is also closed. Therefore, for example, the chessboard-like roads of Újlipótváros (see Figure 6.) are not ideal - since it is closed in one place in vain, due to its rational, repetitive system, the obstacle can be easily avoided through the other streets. The easiest place to block is BudaPart - here you can trigger the least closed road.

Although *Relativised Entropy* maps show a really interesting (and useful) factor for *Obstacles*, we can not forget the importance of other (missing) datas, like the width of streets. It is not really hard to count the minimum distance of two geometry shapes or lines (if we imagine facades as lines, and houses as shapes) with a software, but unfortunately SpaceSyntax is not able to do it.



Figure 6. *Relativised Entropy Map Analysis (Streets)*  
 1. Újlipótváros 2. József Attila housing estate 3. Budapart  
 (Source: selfmade with DepthmapX)

#### 4.4. Key Terrain

In the case of *Key Terrains*, we can get the areas that are crucial because of their location based on the maps. It could be strategic routes or spaces that could be important to a MOUT because of their geometric shape and location. That excludes, for example, buildings and the public spaces around them that are important only because of their function (train station, hospital, skyscraper). In this case, we use *Intensity* analysis as the starting data, which we run on the base maps of the outdoors. *Intensity* measures the relative asymmetry of a spatial network by calculating the rate of change of entropy relative to total depth. Simplified the process, *Intensity* is approx. the contrast of *Mean Depth*.

Examining the individual maps (see Figure 7.), the *Key Terrain* at all three sites, whose intensity is similar, but their extent is different. In the case of Újlipótváros, this area is the main road delimiting the part of the city (Váci út), and the vicinity of the railway station; in the case of the József Attila housing estate, the Smallforest, playground and sports complex; while in the case of BudaPart and its surroundings, the line of the two main roads (Szerémi and Budafoki streets).

The *Intensity* maps show *Key terrains*, but some other important areas are missing, for example the riverside and public buildings. Therefore, the knowledge of geographers, transport-engineers and local experts can not be ignored for a wider scope.

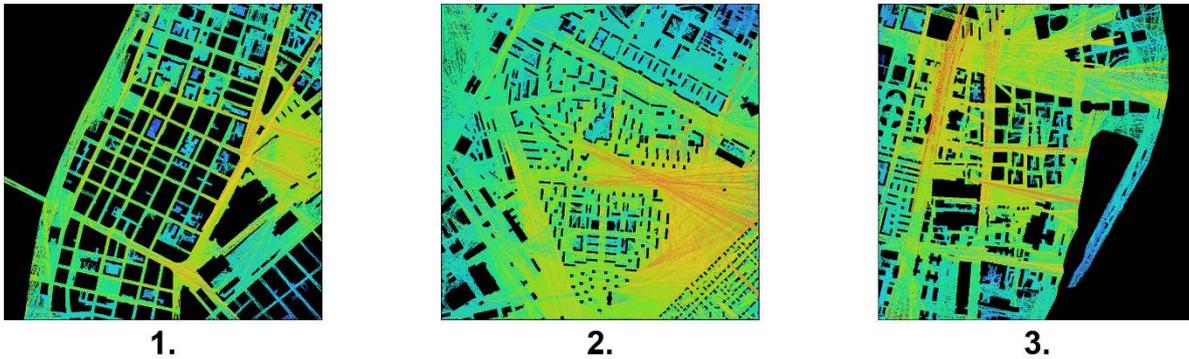


Figure 7. *Intensity Map Analysis (Outer space)*  
 1. Újlipótváros 2. József Attila housing estate 3. Budapest  
 (Source: selfmade with DepthmapX)

#### 4.5. Avenues of Approach

The most important thing for the *Approach* route is to choose the right road - one that is wide enough and well enough integrated from which you can easily approach the rest of the area. For this analysis, an *Integration* map of street networks could work. The warmest colored roads are well integrated, while the coldest are poorly integrated.



Figure 8. *Integration Map Analysis (Streets)*  
 1. Újlipótváros 2. József Attila housing estate 3. Budapest  
 (Source: selfmade with DepthmapX)

The biggest difference in integration maps (see *Figure 8.*) lies in the colors. Of the three areas, almost the entire road network of Újlipótváros is well integrated, and all its streets would correspond to an access route. Due to the color of the József Attila housing estate, it has weaker integrity than Újlipótváros, but stronger than BudaPart. In the case of both the József Attila housing estate and the BudaPart, we could observe locally well-integrated, wide main roads. That means locally these streets are well integrated and could be relied on in the event of a possible MOUT, but they are still much less integrated than Újlipótváros.

As in the *Obstacles* analysis, the result of *Integration* maps for the *Avenues of Approach* analysis is pretty clear and useful, but we can not ignore the miss of the minimum distance between the geometry shapes and lines (the minimum width of streets).

## 5. Conclusion

The urban architecture of the three areas is very different, which differences have appeared in several maps. It is essential to take these differences into account in an urban struggle, be it the insurgents or the ruling power. However, it is relevant to emphasize that it is impossible to make a clear strategy from urban forms and morphology. Each visualized data should be interpreted differently in different MOUT situations. What is advantageous in one case is a disadvantage in the other. Therefore, a more extensive set of input data (e.g., firing range of weapons, size of troops, etc.) would be needed to refine the method. Therefore, in this multifactorial matrix, it cannot be stated that one incorporation would be more resistant to urban uprisings than the other. Rather, it is more important to emphasize that each neighborhood behaves differently in such a situation. They are resistant otherwise.

After performing the OCOKA analysis at three possible MOUT locations in Budapest, we can state the SpaceSyntax analysis method has potential in this field of application. However, it cannot replace other research disciplines. Making an OCOKA analysis needs several different datas from geographers, social researchers, transport engineers and local experters. But using a quantitative geospatial computer technology has a great potential to make this process more detailed and faster. The resulting maps may be helpful for analyses of Observation and Fields of Fire, Avenues of Approach, or Cover and Concealment. Analysis of Key Terrain and Obstacles can also extract useful information from these maps, but they need to be treated with strong criticism - their review is more than recommended.

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# Shrinking Villages: Population Retention and Tourism Development Opportunities of the Settlements of Órség

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## ABSTRACT

*The decline of settlements is not a new phenomenon. Throughout history settlements have always experienced population loss for various reasons, today, however, rural areas are more affected because of the urbanization processes that characterize Hungary and their more disadvantaged position in the economic competition, as well as their historical vicissitudes. One of the most endangered types of rural settlements is the small village.*

*Some of the small villages were able to adapt to the situational endowments and changes that took place over time more successfully, while others lagged behind. The present research seeks to answer the question of how the processes taking place in the area of Órség (Guard's Country), which can be said to be successful among the shrinking small-village areas, differ from those taking place in other Hungarian village areas, and what kind of possible breakout points they can provide. In addition, methods for managing shrinkage in the Órség area and planned developments they prescribe for its future survival and possible growth will be presented.*

*The research relies mainly on quantitative data collection and analysis with the help of time series statistics from the Hungarian Central Statistical Office, development and structural plans, and a local questionnaire survey.*

## KEYWORDS

*shrinking villages, situation and endowments of small villages, Órség, development opportunities*

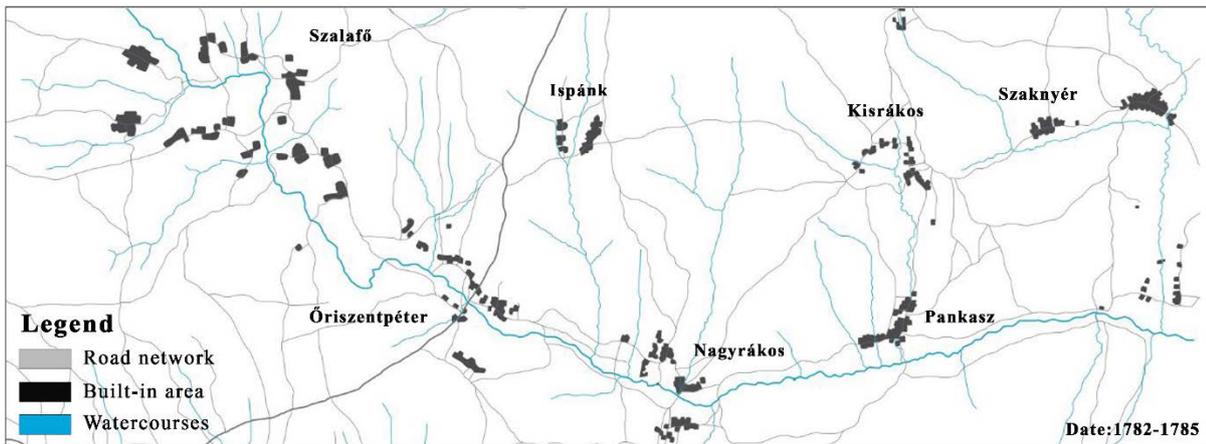


Figure 1. Part of the Órség area in the 18<sup>th</sup> century (Source: own editing)

## 1. Introduction

The phenomenon of shrinkage in urban areas has recently become an important topic among urban geographers and policy makers, while the issue of rural shrinkage has received less attention so far (Raugze et.al., 2017). According to the general point of view of Hungarians, however, Hungary is a country of a rural nature (Csatári, 2004), which is well illustrated by the fact that nearly a third of its settlements are small villages with less than 500 inhabitants. The situation of most of these villages is very unfavourable due to the continuing decline of the already low population, the lack of human infrastructure and the inadequate development of technical infrastructure, as well as the scarcity of transport links (Ilcsikné et. al., 2018). In Hungary in between 1961 and 2011 the shrinkage in rural regions was more than 80% (Raugze et.al., 2017).

At the same time, it can be observed that some settlements and areas, although showing the same phenomenon of shrinkage, are in a better position than their peers (Ilcsikné et al., 2018), which I would like to present on the example of Órség (Guard's Country), – that locates on the western border of Hungary –, by exploring the historical, natural, geographical and structural traditions that have contributed to the formation of the past and present state of the area and its possible future directions of development.

## 2. Background and methodology

### 2.1. Shrinkage as a phenomenon

According to Cambridge Dictionary, shrinkage is 'a reduction in the size of something, or the process of becoming smaller or less'. In the field of urban planning and urban geography, the focus is on urban shrinkage, the main indicator of which is considered to be the population decline that often generates negative effects on economy (loss of jobs and competitiveness), society (poverty) and lifestyle (deteriorating built environment, termination of services). The components of the phenomenon, however, form an inseparable system, they interact and are thus should be treated together (Raugze et.al., 2017; Fol and Cunningham-Sabot, 2010).

The urban shrinkage and decline have been studied by several researchers since the 19th century. H. Hoyt and L. Mumford also described the phenomenon as a system of cycles, where the shrinkage – and then possible disappearance – is an inevitable phase in the long-term development of settlements (Fol and Cunningham-Sabot,

2010). Urban shrinkage, however, has become a feature since the 1970s, initially mainly in developed countries, when, in addition to the constant aging of the population and thus its natural decline, settlements and areas that were unable to integrate into the global and national system began to decline socially and economically and lost their attractiveness (Koós, 2020). Among the areas most severely affected in the 1990s were the regions of Central and Eastern Central Europe mainly due to the negative effects of post-industrial and then post-socialist economic and political transformation (Pirisi and Trócsányi, 2014).

Rural areas became at a disadvantage compared to urban areas, as they were pushed into the background because of their fewer opportunities and resources in the urbanization processes and in economic competition. Fleeing ‘undervalued’ agricultural work and limited other job opportunities, their population has mostly moved to larger cities in the hope of a more secure job supply, wider institutional and service opportunities by which the urban-rural divide was widened. In Hungary and in most East-Central European countries in between 1961 and 2011 the shrinkage in rural regions was around 80-90% (Raugze et.al., 2017).

## 2.2. Shrinkage in Hungarian small villages

Hungary is a country of a rural nature, where settlements with a specific lifestyle and cohesion with their nature, usually of an agricultural character, can be considered as rural settlements (Csatári, 2004). Typical rural areas are small villages, which make up 35.6% of the settlements, but only 3% of the population in Hungary (KSH, 2015). The small village areas are located in the western and south-western part of Hungary in Vas, Zala, Veszprém, Somogy and Baranya counties, while in the north mostly in Borsod-Abaúj-Zemplén County. These areas are mainly characterized by shortcomings in the transport network, the economic structure and territorial coverage, as well as negative demographic trends (Bajmóczy and Balogh, 2002). Between 1949 and 1968, 94% of small villages experienced significant emigration (Frisnyák, 1978), which affected the younger, able-bodied population, causing an aging tendency in many small settlements. Moreover, in the last 50 years, the already disadvantaged villages have been a subject to further adversities due to the settlement network development plans and political and economic ideologies of the former state socialist era (Ilcsikné et al., 2018).

Hungary’s first settlement network development plan was elaborated in 1963, which systematized the settlements according to their unique function and socio-economic role. The state socialist ideology considered the existence of villages unsustainable, and thus stated the development of settlements under 3.000 inhabitants uneconomical (Kőszegfalvi, 2009; Beluszky, 2011). The National Settlement Network Development Concept adopted in 1971 based on the previous development plan distinguished five categories of settlements according to their functional role. 2060 villages (64% of the settlements) and 17.3% of the population fell into the discriminative category of ‘other settlements’ – settlements without a function –, including small villages (Frisnyák, 1978). The concept supported the centralization and regionalization of primary institutions, but it did not take into account the incomplete transport connection network of the villages, which resulted that in a few years several hamlets experienced functional impairment (Kőszegfalvi, 2009; Beluszky, 2011).

Most of the small villages were still an agricultural landscape between the two world wars, where a significant part of the population was engaged in agriculture and animal husbandry. The cultivation habits that had developed during the history were completely transformed by collectivization that began after World War II, and then by



the land reform introduced in the 1960s, with large-scale cultivation and the formation of production cooperatives. Many farmers became unemployed, others became disillusioned and emigrated from their settlement. Eventually, a turn was brought about by the change of regime in 1989-1990 (Ilcsikné et. al., 2018; Baranyai, 2012).

The small villages hoped for a positive change, but this could not be achieved everywhere. Some settlements were more losers of the change of regime due to the loss of livelihood opportunities caused by the disintegration of socialist agricultural system, while others got in a better position. Shrinkage has become less noticeable in those settlements or areas that show atypical signs and are attractive because of their geographical location and tourist opportunities (Ilcsikné et. al., 2018; Pirisi and Trócsányi, 2014). The Órség, which is the subject of the present research, can be classified as one of the fortunate areas, where the population formerly living from agriculture and animal husbandry is now trying to find a livelihood in the field of hospitality and rural tourism, building mainly on the role of recreation and tourism, which is becoming a driving force (Beluszky, 2011).

### 2.3. Research question and sources

The present research seeks to answer the question of what are the specific features and what are the past and present processes that characterize the Órség area and how do they differentiate the hamlets there from other small villages, and what course of action do they predestine in terms of shrinking tendencies.

According European Observatory for Territorial Development and Cohesion (ESPON) there are two policies to address the shrinkage of rural areas and thus villages: (1) **conservative** – which seeks to halt and reverse population decline; (2) **radical** – which accepts shrinkage and tries to adapt as much as possible to the new situation that has arisen. Until now, conservative policy has dominated, but today the concepts of ‘Planned Shrinkage’ and ‘Smart Shrinkage’, which see the shrinkage of settlements as an opportunity to create a more sustainable, flexible, greener and more innovative urban – and rural – environment, are becoming more widespread (Raugze et.al., 2017). After presenting the characteristics of the examination area, this research attempts to explore the presence of these two above mentioned policies in concern with the Órség, as well as their relationship and possible key elements.

In addition to the scientific literature, the sources of the research are provided mainly by the examination of available statistical data – Hungarian Central Statistic Office (KSH), regional statistical yearbooks, Territorial Information System (TEIR) –, and development strategies and concepts – VMTFK, 2021 and HFS, 2017 – in force. These are supplemented by field interviews (10 piece) and voluntary responses to an online questionnaire (21 piece).

## 3. Results and discussion

Órség, which is the main subject of the research is located in the western border region of Hungary, in Vas County. According to the earliest known written historical source, a royal donation letter from 1280, 18 settlements were mentioned in the area that can be interpreted as part of the historical Órség. Currently out of these there are 14 settlements exist due to the amalgamation of a few small villages. Today, 11 settlements are located in Hungary and 3 in Slovenia because of the border line defined by the Treaty of Trianon in 1920. (See *Figure 2.*) The present study considers these hamlets as the territory of Órség, limiting the research to the settlements remaining in Hungary (Balogh, 1898; Csapó, 2008).

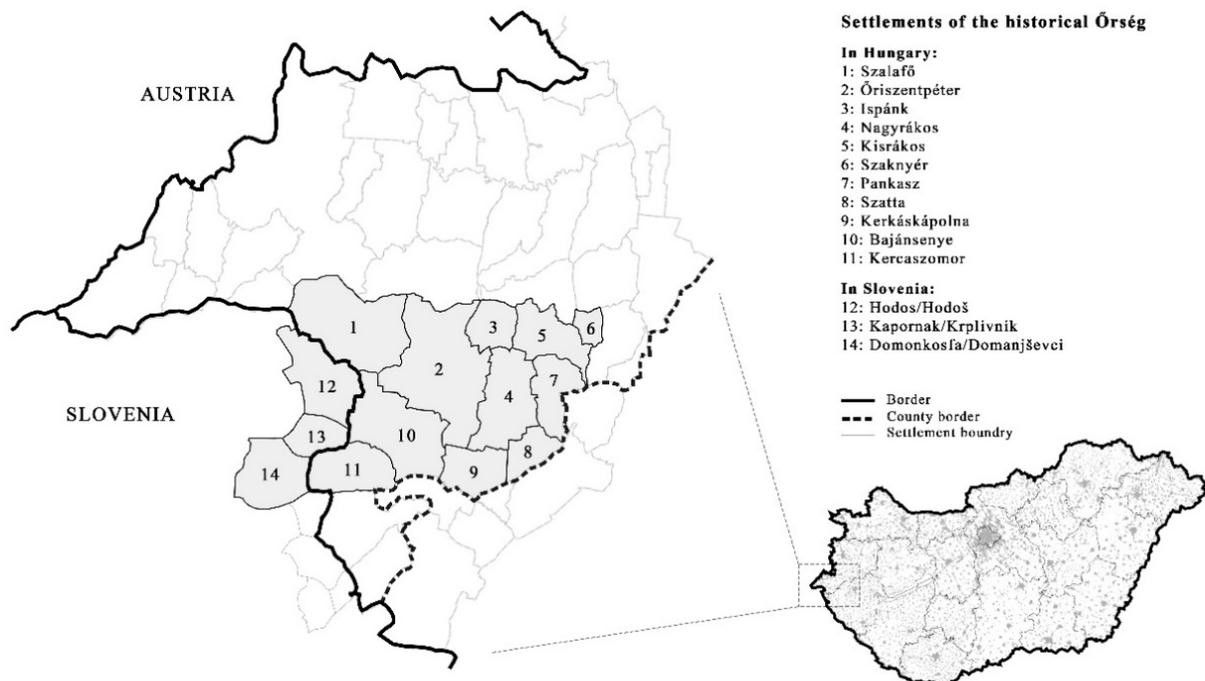


Figure 2. The settlements of the historical Órség (Source: own editing)

### 3.1. The special features and position of Órség in the light of small village areas

#### **Geographical features**

Small-village areas within Hungary typically occur in hilly and mountainous areas, where geographical features, fragmented land surface and natural resources allowed only the formation of smaller settlements (Pirisi et al., 2015). It is no wonder that hamlets, in the Órség area – which has served as the western border between Hungary and the Carpathian Basin since the 11<sup>th</sup> century – as well, have mostly formed on hillsides along the valleys of the watercourses that dividing the various topography (Csiszár, 1983).

#### **Settlement structure features**

In Hungary the majority of rural settlements are clustered villages (Great Plain), or have a one-street or multi-street structure with ‘ribbon plots’ (mountains and Transdanubia) or show a regular, chessboard-like (Csongrád and Békés County) settlement structure (Pirisi et al. 2015). However, in the territory of Órség there is a special form of settlement, the so called ‘szer’ type, which was created by guards whose settlements often located several kilometres apart, adapting to the diverse topography. (See Figure 1.) Each ‘szer’ is made up of smaller groups of houses that are structurally separate yet cohesive. This sporadic network and structure of settlements was also perfectly suitable for the protection objectives, as the guards were able to perform their duties over a larger area. The ‘szer’ type has survived in the Órség area throughout time, by forming an organic unity with its surroundings (Csiszár, 1983).

#### **Geopolitical conditions**

The area of Órség has been greatly influenced since the Middle Ages by its belonging to the western border zone. However, the positive or negative impact of the border situation has changed steadily throughout history. Due to its marginal position urban development energies were lacking in the area, major transport networks and infrastructure developments, and often even primary institutions were missing. In the



16<sup>th</sup> century, though, in addition to the export of grain produced in the poor soils, extensive cattle breeding and export was dominant, the largest market of which was today's Austria. Exports were a defining element of the economic life of the area until the end of World War I. when because of the new border line established by the Treaty of Trianon (1920) the area lost its external markets and was forced to the administrative border of Hungary (Beluszky, 2011; Tóth, 1971).

After World War II. the area was weighed down by ideological considerations of state socialism and the hermetic closure of the border. The area of Órség became a buffer zone of the border, which could only be entered with a permit and thus could not count on state developments (Beluszky, 2011). For the disadvantaged settlements in Órség, the change of regime brought relief when they regained their network of domestic and foreign relations by opening the borders. Today, the situation on the Austro-Hungarian border is exceptionally favourable in terms of national comparisons, concerning job opportunities, infrastructure, network and tourism, thanks to which the settlements of Órség are already able to utilize the border position as a geographical and regional resource. Confirming this, about 75% of the questionnaire respondents and interviewees found the border situation of Órség positive. In contrast most of the small villages located near the border in the Great Plain or in northern Hungary are at a disadvantage due to the lack of jobs and nearby big towns, unfavourable natural and transport conditions, and the transformation of social and ethnic strata (Kovács, 1991).

### **Demographic conditions**

The depopulation of settlements is not a new phenomenon in Hungary; however, this decrease is affected the small villages the best. In the case of small villages, the fact of aging and natural population loss is typical, which in Órség has shown an average value of -10.03‰ in the last 10 years (TEIR, 2021). Positive natural increase can be observed in Baranya and Borsod-Abaúj-Zemplén Counties mainly in villages with a high Roma minority (Balogh, 2014).

In addition, the change in the number of the local residents can be influenced primarily by the difference in migration. After the change of regime, almost one third of the small villages had more immigrants than emigrants, than this proportion dropped significantly after the turn of the century. Positive migration balance is typical in the western counties of Hungary, in the suburbs of the county capitals and in the vicinity of Lake Balaton (Balogh, 2014). Órség also became sought after among the intellectuals of the capital and big cities, because of the attractive effect of border opening, the need for peace and the prominence of deurbanization phenomena (Cserta et. al., 2004). However, the average of its migration balance over the last 10 years is negative (-5.62‰) and only in two settlements, Szaknyér (14.2‰) and Szalafő (1.52‰) had a higher proportion of immigrants than emigrants (TEIR, 2021).

*'Many people buy houses here, but some of them only use them for holidays, they do not really live here.'* (Interview)

A declining trend in population can be observed on the settlements of Órség as well, reflecting the national characteristics. (See Figure 3.) The population loss was 38.5% compared to the state of 1870, while compared to 1949 – when the population of the area reached its peak – it was 55.3%. Whilst population decline began in some settlements at the early 20<sup>th</sup> century, it started to take drastic proportions mainly from the 1960s. At the same time, we can see a different degree of decrease in the individual settlements. While Óriszentpéter and Pankasz are in a relatively better position (25-40% reduction), Kerkáskápolna – where *'the pub has already closed'* – and Kercaszomor lost almost 80% of their inhabitants compared to 1949.

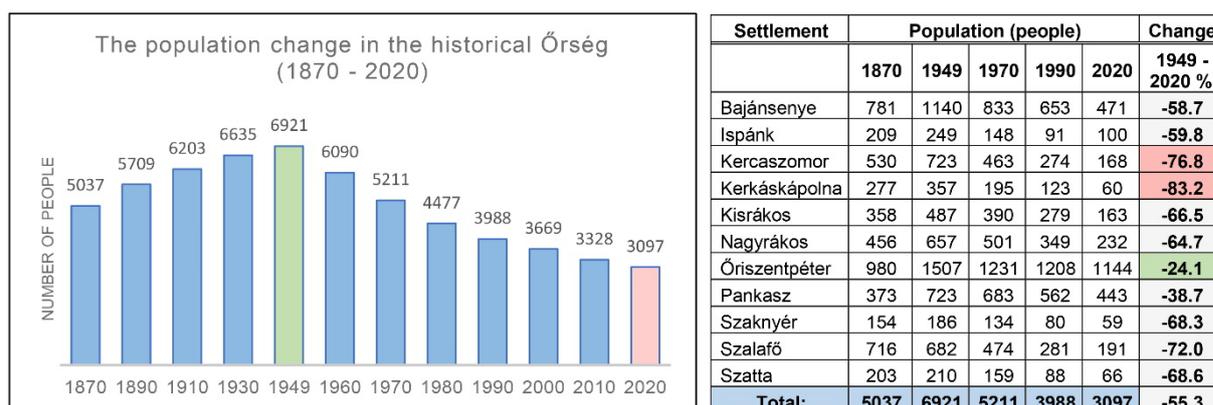


Figure 3. The population change in the historical Őrség from 1870 to 2020 in Hungary  
(Source: KSH, 2001; KSH, 2021 – own editing)

### Economic characteristics

In the case of settlements, primarily the geographical location influences the economic conditions, which is especially true for small villages. In these villages, the adaptation to the natural environment and the dependence on its endowments are higher, thus, they are typically agricultural-oriented, where farming traditions are still present even today (Balogh, 2014). In the agrarian lands of the Őrség in 1930, the proportion of people working in the primary sector even exceeded 85% (Beluszky, 2011). During and after state socialism the social perception of farming and animal husbandry has moved in a negative direction thus, in 1960 an average of only 76% of active labourer worked in the agricultural sector, by 1980 this had fallen to 50% and by 2011 to 15.8%, which value despite the poor-quality soil conditions and topography typical of the area, barely lags behind the average of 16.7% (See Table 1.) in small villages.

Table 1. Economic activity and occupational structure of the population, 2011 (Source: KSH, 2013; KSH, 2015 - own editing)

Settlement name	Economic activity of the population (%)		Occupational structure (sectors) (%)		
	active	unemployed	agriculture (primary)	industry (secondary)	service (tertiary)
Bajánsenye	41.4	3.6	10.6	25.3	64.1
Ispánk	39.0	3.8	-	-	53.7
Kercaszomor	32.2	1.9	13.2	29.4	57.4
Kerkáskápolna	28.2	3.8	13.6	22.7	63.7
Kisrákos	37.8	2.3	11.0	39.0	50.0
Nagyrákos	34.7	2.7	8.8	39.2	52.0
Őriszentpéter	42.9	3.3	11.6	34.1	54.3
Pankasz	37.9	4.4	15.5	39.8	44.7
Szaknyér	25.0	-	-	50.0	-
Szalfő	38.4	2.8	22.2	32.1	45.7
Szatta	42.9	10.7	36.1	22.2	41.7
<b>Average:</b>	<b>36.4</b>	<b>3.9</b>	<b>15.8</b>	<b>33.4</b>	<b>52.7</b>
<b>Small villages HU (average)</b>	<b>39.2</b>	<b>16.9</b>	<b>16.7</b>	<b>20.3</b>	<b>63.0</b>

A significant number of small villages have not been able to adapt to the economic structural transformation – namely the marginalization of the agricultural sector and the expansion of the industrial and service sector – that has taken place in



recent years. Thus, the level of local employment in their territory has decreased. Today, the proportion of the unemployed living in small villages (16.9%) is well above the national value (5.7%). However, in settlements close to the western border this value is generally lower, while in small villages in the northern, eastern and south-western parts of the country it is higher (Balogh, 2014; KSH, 2015).

The average employment rate in the Órség area is 36.4%, which is slightly lower than the average employment rate in small villages (39.2%), which is because of the higher proportion of the elderly population (KSH, 2015). However, the unemployment rate is very low, averaging only 3.6%, in Szatta alone, it exceeds 10%. This shows that the inhabitants of Órség managed to take advantage of the opportunities inherent in the geographical features and (foreign) connections of the area and to find work in other areas besides farming and small industry, mainly in the field of rural tourism. At the same time, a significant part of the population (61.7%) commutes to work to other settlements – mainly to the central cities of Vas County and to neighbouring countries – due to the limited job opportunities of the villages (KSH, 2013).

### **Infrastructural features**

The liveability of settlements is greatly influenced by their accessibility and their technical and human infrastructure network. In the case of small villages, the most significant indicator is the distance from more feature-rich centres and the development state of network connections with them. Those small villages have the most favourable transport connections that surround large cities (Pécs, Szombathely etc.), at the same time, the most disadvantaged areas the marginalized ones, far from bigger cities, such as the southern part of Baranya County, the border areas of northern Hungary, and also the Órség (Bajmóczy and Balogh, 2002).

In the Órség area there is only one (Őriszentpéter) and near it there are two (Szentgotthárd, Körmend) lower-level centres, however, the access to these centres is difficult due to the lack of an adequate road network and public transport system. 59% of the respondents to the questionnaire consider the transport network to be incomplete or in a poor condition in the area, while another 29% thinks it to be medium. The area is served by intercity bus services the schedule and frequency of which do not necessarily correspond to the needs of the locals. The presence of the Pan-European Railway No. V., which affects 4 settlements in Órség (Pankasz, Nagyrákos, Őriszentpéter, Bajánsenye), provides advantageous connections for the region, however, due to the lack of connecting bus services and their inadequate density, rail transport is almost impossible.

In the majority of small villages, population decline, state socialist settlement policy and unfavourable infrastructural conditions led to a decrease in the settlement functions. In the Órség area, the National Settlement Network Development Concept endowed Őriszentpéter (priority lower-level centre), Bajánsenye (partial lower-level centre) and Pankasz (settlement with a lower-level role) with a more prominent role than the other settlements, so it is no wonder that today only these settlements have kindergarten and elementary school. General practitioner's offices are located in Őriszentpéter, Pankasz and Kerkáskápolna. The post office has also been closed in several settlements, so residents have to visit Őriszentpéter or Bajánsenye for the service. Unfortunately, we can find settlements (Ispánk, Szatta, Kerkáskápolna) where there is not even a grocery store (TEIR, 2021).

*'Those moving to Órség do not choose this settlement because there is no kindergarten here and no one wants to travel much for it.'* (Interview)

## Tourism

In the rural areas of Hungary, the solution to the agricultural crisis after the change of regime (1990) was seen in rural tourism, which was seen as an important source of new income for the locals, and an outbreak possibility for villages. In Hungary, the main motivations for rural tourism are hiking and nature activities, and festival-, gastro- and wine tourism. Thus, it is not surprising that in terms of guest traffic indicators Northern Hungary (health tourism, world heritage sites, wine region etc.), Western Transdanubia (natural endowments, culture etc.) and Central Transdanubia (Balaton, wine region etc.) are in an upscale position. (Molnár and Reményik, 2017).

Órség is one of the best developing areas – in the direction of quality rural tourism – in the Western Transdanubia region (Kóródi and Dudás, 2004), where there is only one significant employer in addition to the utilization of agricultural resources, the recreation and tourism function (Beluszky, 2011), thus, a lot of energy is invested in this sector. According to the locals, the attraction of the Órség lies in the possibility of escaping from the city, the real natural environment and the desire to experience tranquillity. Several highlighted the special traditions of the area, the gastronomic experiences, the excursion possibilities, and the natural and built values.

*'The life force of nature radiates from everything. (Questionnaire)*

In Órség, folk and small crafts have a long tradition, which is becoming more and more popular among tourists. As a result, the number of businesses engaged in this is growing. At the same time, food, fruit and products made by local producers are gaining ground (HFS, 2017). Festivals in Órség, programs provided by the Órség National Park, as well as educational trails (14 path) and hiking trails (for example “*from ‘szer’ to ‘szer’ hiking trail*” that presents the area-specific settlement form and built values) are also sought after. In connection with the opportunities provided by tourism, six bicycle routes were designated in the area, connecting Órség with the settlements along the River Rába, Slovenia and the neighbouring Zala County.

**Table 2. Accommodation capacity and number of guest nights in Órség (Source: own editing)**

Settlement name	Total number of accommodation capacity (piece)			Number of guest nights (piece)	Number of guest night / acc. capacity	Rate of foreign gest nights (%)
	2014*	2021**	Change (%)	2014*	2014*	2014*
Bajánsenye	89	108	121.3	1631	18.3	0
Ispánk	44	106	240.9	838	19.0	0
Kercaszomor	72	67	93.1	2230	31.0	0
Kerkáskápolna	9	24	266.7	20	2.2	0
Kisrákos	41	44	107.3	481	11.7	0
Nagyrákos	47	64	136.2	1353	28.8	3.4
Óriszentpéter	396	459	115.9	11084	28.0	1.0
Pankasz	16	14	87.5	182	11.4	0
Szaknyér	6	73	1216.7	142	23.7	0
Szalaő	236	264	111.9	9271	39.3	0.9
Szatta	19	27	142.1	56	2.9	0
<b>Total:</b>	<b>975</b>	<b>1250</b>	<b>Av.: 128.2</b>	<b>27288</b>	<b>Av.: 19.7</b>	<b>Av.: 0.48</b>

\* According to TEIR, 2021 \*\* According to Órség Info, 2021

Despite the fact that the number of rural accommodations decreased steadily between 2009 and 2016 (-65%) in Hungary (Molnár and Reményik, 2017), the number of commercial and private accommodation establishments, as well as the number of



accommodation capacity has been constantly increasing in Órség. (See Table 2.) The area, although it is inviting, does not have a tourist attraction, leisure infrastructure that would be able to keep visitors here for a longer period of time, thus shorter stays are typical, which is also reflected in the number of guest nights. In 2014, the number of guest nights per accommodation capacity was less than 20, which lags behind the county (91.3) and national (49.4) values, however, it exceeds the value (17.6) of small-village areas (TEIR, 2021).

### 3.2. Directions for action on rural shrinkage in Órség

The studies above show that Órség occupies a more advantageous position in terms of the conditions and processes characteristic of Hungarian small villages as its counterparts in either Southern or Northern Hungary. Although its population is on a declining trend and its infrastructure and institutional network is more backward and incomplete compared to villages closer to larger cities, with the help of its again favourable western border situation, the natural, cultural, structural and folk built values that have survived despite the difficulties of history, it has begun to take advantage of the opportunities offered by tourism. Thus, the most significant resource of the region against shrinkage and for the survival of the small villages here lies in rural tourism, the development of which can be a population sustaining force in rural settlements by increasing the number of rural businesses and the range of services (Molnár and Reményik, 2017).

The problem of the population decline of small villages and the prevention of the backwardness of peripheral areas is a priority task in regional and rural development concepts affecting the county and LEADER community – including the Órség area. According to ESPON, there are two types of shrinkage management policies for rural areas, the (1) conservative and the (2) radical approach presented earlier (See chapter 2.3.), which can both be found in the development plans affecting the Órség area.

**(1) Conservative approach:** In order to keep the current population of Órség, the development plans consider it essential to provide new job opportunities, which Vas County intends to implement in addition to supporting and expanding the number of local small and medium-sized enterprises by increasing and (re)promoting the carrying capacity of agriculture. In addition to area-specific farming methods (grassland and game management, forestry, extensive animal husbandry), they intend to allow space for classical arable crop production. In order to keep the local population in place, it is also essential to support young farmers and to transfer the knowledge needed for cultivation. Ensuring the availability and quality of individual settlements and basic (public) services is also a priority, which means the development of both the road network and the transport and utility connections, as well as the proper construction of the leisure infrastructure missing from the area. In addition, development plans consider tourism as an economic resource, which requires the further development and improvement of the quality of tourism-based services (recreation, small crafts etc.) and ancillary infrastructures (accessibility, hiking trails etc.), and by which the goal is to increase the number of guest nights (VMTFK, 2021; HFS, 2017).

**(2) Radical approach:** The development plans for Órség also include improvements that are abstract from population retention and have a positive effect on the area in general, such as the pursuit of sustainability and self-sufficiency. To reach these, the aim is to transfer the knowledge of backyard crop production, animal husbandry and product processing, in which the plans

also count on the help of the older generation. It is considered expedient to take advantage of the site-specific historical and landscape features, such as prioritization of traditional crops (pumpkin, millet, oats etc.) products of animal origin and folk small-scale crafts (pottery, basket weaving, jam making etc.) of the area. The marketing of the settlements of Órség, the provision of up-to-date information to the locals and tourists, as well as the strengthening of the contact system of the individual communities are also a priority task, which requires the development of smart solutions and digitization. These innovative, site-specific solutions are intended to improve the liveability of settlements (VMTFK, 2021; Cserta et. al., 2004; HFS, 2017).

In reality, the implementation of the two village shrinkage treatment approaches in the Órség area needs to be treated in a complex way, connected to each other, relying on the Órség 'brand' and rural tourism. In order to make the area more and more attractive, it is necessary to take advantage of the local atypical endowments – at the same time with attention to the load capacity (ecological and social) of each village – and to create their appropriate marketing, which can generate new jobs. The presentation of special natural, cultural and built values, the participation in festivals, however, cannot take place without adequate access to road and public transport system, and physical, political and community links between the villages of Órség. These, in turn, can benefit the local residents and can also help retain the population.

#### 4. Conclusion

The loss of population and the change of function in urban and even more in rural areas especially since the mid-to-late 20<sup>th</sup> century are typical of Hungary and the whole of Europe. Shrinkage can be addressed by formulating guidelines that focus on retaining the population, as well as by development ideas that take note of the decline and use that as an opportunity. These approaches occur mixed in the regional development plans of Órség, reinforcing each other, by building on the endowments of the area. The mixed application of the two shrinkage treatment policies tailored to a specific settlement or region, may be able to promote the self-sufficiency and multifunctionality of settlements, thus retaining the existing population and possibly attracting new settlers, while preserving local culture, traditions, landscape and built values.

According to the investigations, Órség is in a more advantageous situation among the small village areas – even though it is characterized by population decline –, which is mainly due to its geopolitical position and its constantly evolving rural tourism. However, in the future it will be necessary to supplement and to update the research included in the study, to understand better the actual current situation in the area and the elements of development that have taken place. To this, it is planned that the next census, which was postponed in 2021 and presumably will be in 2022, will give the latest statistics, and new on-site research and interviews, with the involvement of the management of each settlement, the Órség National Park Directorate and the local residents, will provide up-to-date resources.

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# In the Shadow of Skopje's Railway Artefact: the Interscalar Character of the Artefact as a Condition for Constructing New Centrality

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## ABSTRACT

*Skopje railway station is an artefact, dating from the post-earthquake reconstruction of the city. Kenzo Tange's master plan, envisioned the station as a strong urban artefact, a "CITY GATE", dimensioned to embody an intermodal city entrance and a new urban center. It was designed as a metabolic mega-structure, corresponding to the traffic needs of the young capital; and as a sole point where all traffic converges. As a new urban center, it was outlined as a great concentration of administrative and commercial activities.*

*Due to a complex economic and political context, the project was never completely constructed. The evolution of the built structure, understood continuous segregation and detachment from its environment creating peripheries in the city core.*

*The focus of the research is to understand the potential of this alien element, but also to rise the pending discussion on the urban digestion of the mega-structures and reprogramming the outdated infrastructural artifacts. In that sense, I analyze the dialog between the artifact and the city, emphasizing the relation between the infrastructure and the public space. I search for situations of positive conflict in the case of Skopje and other similar cases, as an impulse towards a new epicenter of urban activity.*

## KEYWORDS

*public space, infrastructure, post-socialist, skopje, metabolist architecture*



Figure 1. Skopje railway station. Credit: Alan Grant (Source: [https://en.wikipedia.org/wiki/Transportation\\_Center\\_Skopje](https://en.wikipedia.org/wiki/Transportation_Center_Skopje))

## 1. Introduction

Railway station areas are in the focus of ambitious redevelopment strategies around the world. Their transformation and reinventing is based on economic, social, urban and environmental concerns.

The infrastructural and network fragments from previous urban evolution phases, are often outdated and inadequate for the current mobility systems. They also tend to be over dimensioned, create marginal areas inside the central urban fabric, and burden the environment and the economy.

On the other hand, as a consequence of the over-dimensioning, they can easily offer program flexibility and use alternatives; and because of their attractive position within the city, they offer new values and opportunities to transform, balancing between infrastructure and place.

Skopje railway station emerged as a new centrality in the post-earthquake metropolis, and as a strategic crossroad along the main Balkan rail axis Athens-Ljubljana.

Conceived as one of the two strong urban elements of Tange's master plan, the "City Gate" was dimensioned to embody the city entrance and a new urban center. The metabolic mega structure was corresponding to the actual and future traffic needs of the young capital; and it was a sole point where all sorts of traffic converge - the railway, intercity and city bus lines, postal traffic, highway and heliport. The new urban center was envisioned as a point of a great concentration of administrative, service and commercial activities with a pedestrian deck leading into the core of the city. Given the complex role of the new centrality, "City Gate" becomes a guideline for the East-West axis of city growth.

On territorial scale, being located deep in the Balkan Peninsula, the City Gate was frequent regional crossroad. It was an intersection spot of the main North-South rail axis that connects the peninsula and Europe; and the secondary transversal lines that connected Yugoslavia with the southern neighboring countries.

Due to the complex geopolitical and economic context, this project has never been completely constructed. Later, the turbulent Balkan circumstances influenced the frequency of the rail traffic resulting in not more than three international and a dozen local trains per day. Only partially built, this structure never reaches its full capacity, nor roots in the surrounding fine-grained urban tissue.

Today, the station is an artefact, a foreign and an alien one (*See Figure 1*), but with great potential. The focus of the research is twofold: the first one opens the pending discussions on the urban digestion of infrastructural artifacts and searches for arguments about their value, and the other one is regarding the roll of the railway stations in the contemporary city, and their capacity to transform the urban fabric.

## 2. Methodology

This research is parting from a certain historical point, important in the urban evolution of the city of Skopje. Therefore the historiographical method is used to approach and to contextualize the case study.

Furthermore, the research relies on theoretical sources, primary and secondary sources regarding the case study in question; and on-site observation as well as documenting the spatial characteristics, activities and morphology of the railway station within its immediate and wider context.

## 3. The case of Skopje

### 3.1. Nonlinear trajectory of urban development

Skopje is shaped by its extraordinarily dynamic past. Only in the last 100 years, the city witnessed 5 wars, the Ottoman Empire, the Serbo-Croatian Kingdom, the socialist regime, democracy, a flood and a catastrophic earthquake. In each of these moments, a different architect, envisioned the city in a completely distinctive way, always reflecting the current political ideology and with a “tabula rasa” approach toward city’s existing anatomy.

The urban planning history of Skopje starts in 1914, after the two Balkan wars. The outcome of the wars, for the first time after five centuries, changes the geopolitical context of the city. Since this moment, Skopje no longer pertains to the Ottoman Empire and becomes a subject of constant urban redefinition.

The city we experience today is the outcome of the unfinished modernization processes in the last century. The inherited Ottoman city, in the period between the two world wars, was a subject of several deotomanization tendencies. The plans of Dimitrija Leko and Josif Mihajlovic, brought the first waves of “Europeanization”, and broke the links with the traditional Ottoman model. In the postwar period a more intensive transformation occurred which changed the city dramatically. The dominant paradigm in the field of urban planning that originated from CIAM principles had a strong impact on the Skopje cityscape. The modernist movement was the most adequate language for the Yugoslavia’s progressive socialist system. (Jovanovski et al., 2014)



The rapid political and economic changes did not only influence the fabric of the city. These dynamic set of transformations, led to enormous territorial growth, a city with a surface of 1055ha between the two world wars, reached 4640ha in the postwar period. (General regulation plans 1929 and 1948). The population, in this period of transformations, grows from 40.000 habitants in 1918, to a number of 408.143 habitants in 1981.

Today Skopje is the biggest and the most important city in Macedonia. It is still being transformed by the capital driven processes that replaced the modernist models of growth. The inherited modern city, was a fertile ground for atypical spatial practices that followed the proces of denationalization and privatization of the land. (Stefanovska & Koželj, 2012). The lessons from the previous modernist period are forgotten; the processes of land speculation and domination of the individual over the public, that socialism tried to erase have returned. The construction business becomes a trend, the public interest becomes irrelevant and the city is transformed by an uncontrolled process of densification. Today's city limits have a surface of 571km<sup>2</sup> and a population of 668.518 inhabitants. (Census of the population of the Republic of Macedonia, 2011).

### **3.2. Skopje as a Balkan crossroad**

The importance of the research is not only regarding the current urban reality of Skopje, but it is also concerning its position on a territorial scale. Skopje is an important crossroad of the Balkan Peninsula. During the end of the Ottoman Empire, Skopje was the last remaining important Ottoman center on the peninsula and it was the sole connection between Istanbul and central Europe. In the cold war, Yugoslavia was the only neutral and porous territory between the two blocks and the position of Skopje as an important crossroad strengthens even more. As part of larger economic political strategy, during Yugoslavia, and after the break, Skopje becomes an important intersection spot between the main Athens- Ljubljana corridor, connecting the peninsula with Europe; and the transversal connection between the Adriatic corridor and the eastern Balkan countries leading further to Asia. Today these corridors and crossroads are subject to extension and renewal financed by the European Union, as extremely important links in south Europe.

### **3.3. The railway as catalyst for urban transformation**

The urban planning timeline of Skopje recognizes two points where the railway infrastructure significantly changes the urban matrix.

During the period of the Ottoman occupation, Skopje shaped spontaneously around a strong comercial core. The city expanded on the north bank of river Vardar in organic patern folowing the terrain between Gazi Baba hill and the city fortress Kale. The first gesture of modernization of the city was the railway in 1873, positioning the railway station building on the unpopulated south extreme of the valley, at the bottom of the Vodno mountain. The station acted as a pole, stimulating a definition of a North-South city axis. At this point, the city starts extending on the south bank of the river, as a sprout of contemporary Skopje.

The second time the railway infrastructure influenced the cityscape is during the post-earthquake reconstruction of the city. The existing network was evaluated as inadequate and insufficient for the rapid population and industry growth in the period before the earthquake in 1963. Doxiadis Associates and Wilbur Smith Associates, as

a part of the Skopje Urban Plan suggest reconfigured inner city rail connections that will best fit the new city urban model. The freight lines are bypassed in the northern periphery, leaving the city center free for extending in both directions.

### 3.4. Construction of the new city center – Kenzo Tange masterplan

On 26 of July 1963, Skopje suffers a devastating earthquake. With an aftermath of around 80% ruined urban fabric, and 150000 people left homeless, the biggest concern of the Institute of Town Planning and Architecture of Skopje was accommodating the dislocated population. The second biggest concern was recovering the infrastructure. The entire traffic network was disabled and the industrial capacities non operative. Being an important crossroad, Skopje left the whole country paralyzed. The best available talents, Doxiadis Associates, Adolf Ciborowsky, Polservice and E.Weissmann, gathered to program a 20 year long strategy for the city called Skopje Urban Plan. (United Nations. New York, 1970)

However, the city center was completely destroyed and could not wait for 20 years. Since an urgent recovery was required, the central 4sqkm surface immediately became subject of international competition.

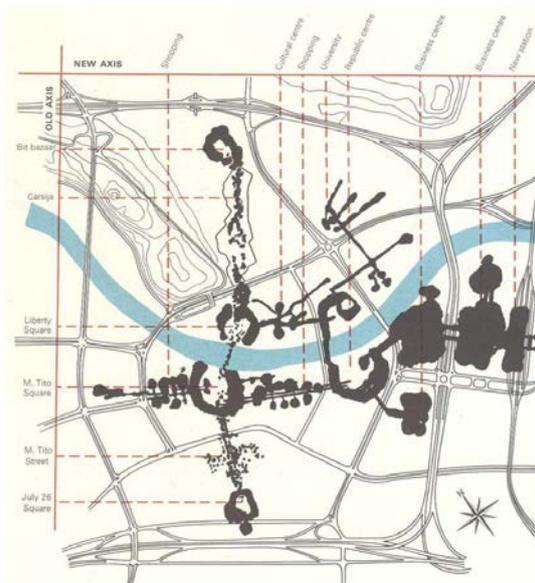


Figure 2 Extract from the Skopje Master Plan, Kenzo Tange.  
(Source: Skopje Resurgent - the story of the Un Special Fund)

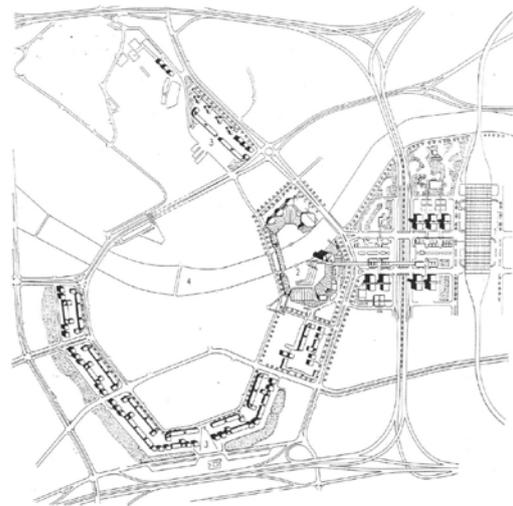


Figure 3 Extract from the Skopje Master Plan, Kenzo Tange.  
(Source: Skopje Resurgent - the story of the Un Special Fund)

Kenzo Tange masterplan for the city center was evaluated as the one with the most potential. The proposal was a single bold urban project, filtered through the Japanese metabolism, projecting futuristic almost utopist vision for the center of Skopje.

“Project 9” was the version of the master plan that defined Skopje’s new look. The concept of the project is conceived around two axis with two spatial elements. The first axis is the old one, historic axis that structures the city in North-South direction. It extends from the old bazaar, through the central square all the way to the old railway station, and needed reinforcing and recovering after the earthquake. (See Figure 2). The other axis, introduced with the Kenzo Tange Master plan is in direction East-West.

It connects the new residential extensions with the city center and defines its longitudinal dimension. (Tange, 1964)

This concept is materialized in two spatial figures, the CITY WALL and the CITY GATE that intersect in the Republic square. (See Figure 3). These two elements embraced the fragments of all the previous partly implemented plans.

### The City Gate as an intermodal node and a guideline for the new axis

The “CITY GATE” is a metabolic mega structure in reinforced concrete that was corresponding to the actual and future traffic needs. In a city frame, the structure has a very complex character: intermodal node and guideline for the new city axis.

- The location of the City Gate predetermined its intermodal character. The main traffic arteries intersect into a complex node where the automobile, train, intercity and city bus meet. Adding the postal service, aerial links, and pedestrian traffic to this node, resulted in a highest urban activity.
- The City Gate has been placed at the point where the two highways come closely together. In the same point the diverted railroad tangentially touches the city center. The traces from the pre-earthquake urban models, the ring roads and the longitudinal roads were meeting in that spot. (See Figure 4).



Figure.4. The railway station as an intermodal node, and as starting point for the new axis. (Source: Japan Architect magazine, N130, 1967)

- The City Gate is a starting point for the new urban axis. It encourages and guides longitudinal urban development, east and west from the railway station. (See Figure 4).

On the west side, the City Gate axis, penetrates the City Wall, crosses the old axis, and continues out from the city center into the existing western residential development. East of the railway station, one more segment of the business district was planned. That way the new devolving residential area "Aerodrom" will naturally link with the existing centrality. To maintain the continuity of the axis in the homogenous residential areas, the existing community centers were reconfigured with more diverse services; and the new ones were interpolated among the existing ones to shorten the distances lacking referent points.

The city center segment of the axis was the crucial one. It had to bridge the blank devastated area, to distribute the east-west fluxes, and to compete with the existing historical commercial axis. The old axis was naturally established between the old bazaar on the north river bank and the first railway station on the south river bank. The whole city center developed around this itinerary and it was deeply written in the collective memory. The City Gate axis was to remap the center with new itineraries. Introducing different activities and configuring new links between the two river banks, its role was to create new focal spaces that invite and guide the pedestrian through new urban scenarios.

### The City Gate as a public space

But the most interesting aspect of the Kenzo Tange entry was the architectural treatment of the infrastructural artefact. On a more immediate scale the City Gate is a three dimensional system of movement lines of all types of traffic participants. It is an infrastructure that manifests as a public space, embodying in the same time the fluxes and the spaces of urban permanence. Furthermore, it becomes a part of the network of nearby public spaces in the tendency to knit together the two banks of the river.

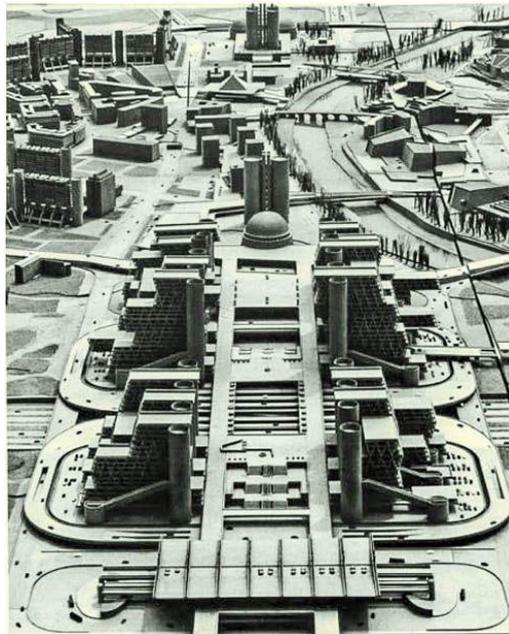


Figure.5. Kenzo Tange masterplan. The city gate - competition entry model. (Source: Japan Architect magazine, N130, 1967)

The high urban activity results from a diverse functional contents and capillary movement system. Three components assembly the City Gate and carry the main functions of the complex: The City gate center, the traffic "transformer" and the

Transportation center. The relation between these can be compared to a live organism, each one has its specific role, and they are all attached to the same circulation system. The City Gate center provides functional variety, the traffic interchange mechanism transform the scale and the velocity of the traffic, and the transportation center has a role of a port for all categories of traffic. (See Figure 5).

#### 4. The artifact

The implementation of the master plan was intended in three phases, in order to compromise between the urbanist's ambition and the local possibilities. Prioritizing the citizen's imminent needs, the city as a system was once again overlooked. The city wall and the railway station- as a segment from the City Gate, were built as a first and a last stage of the recovering process.

In the fifteen years following the earthquake, Skopje city center became a collection of urban artifacts (Rossi, 1982) floating among fragments from previous urban realities. Coming from a different era, where the architecture and the infrastructure are inseparable, this plan - partially implemented, provoked discontinuity and ruptures in the city and its mobility network. Too small to stimulate the movement that the unbuilt mega-systems were to provide, and too big for the context where they landed, the artifact only plugged in the existing tissue without establishing permanent links.

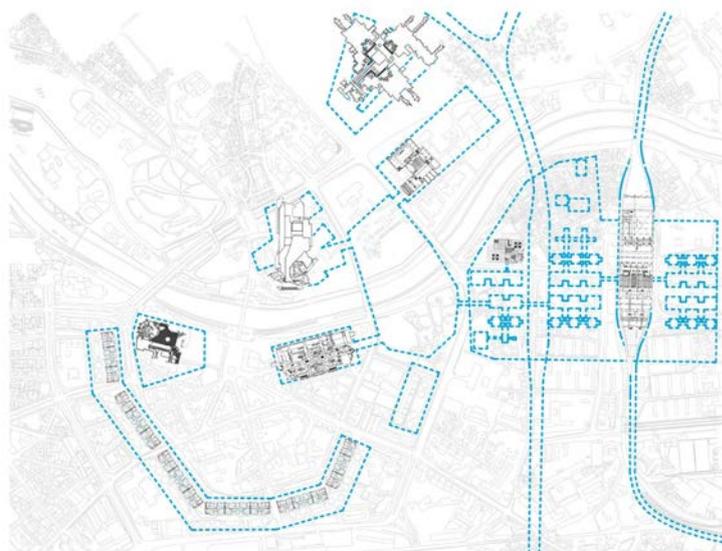


Figure 6. Skopje central area. Map of artifacts. Superposition of the Kenzo Tange master plan frame and the built segments. Developed by the author.

The built elements that are inheritance from different eras and processes, can accelerate or discourage the urbanity. They can become a patrimonial monument or an active and flexible component of the city urban life. When they grow out of their function and resist the transformations they become patrimonial elements witnessing the city urban history. (See Figure 6).

When the built elements survive because of their form and their capacity to receive new functions a part of their initial one, they become primary elements in the city. These elements that overmatch their function and are resilient to the transformations, Aldo Rossi defines them as artifacts. (Rossi, 1982)

The railway station artifact left from that era, is a 100 m wide platform in reinforced concrete, elevated 8.5m above the ground level on pilotis and pillars. It extends for more than a kilometer before it meets the city topography. This platform is the central railway station and it is the east built end of the City Gate mega-structure. Positioned transversally to the new city axis, despite its elevation and physical permeability, this infrastructure divides more than it connects and creates the point where the city disintegrates.

The evolution of the railway station, understands continuous segregation and detachment from its environment creating peripheries within the central tissue. (See *Figure 7*). The aim of this research is to understand the dialog between the artifact and the context; to recognize the silences, the voids and barriers as potential points of positive conflict with biggest capacity to contribute a new epicenter of urban activity. Emphasizing the relation between the infrastructure and its context, the station is not analyzed as a sole architectural artifact but as a potential new centrality with wider positive impact.

To understand the challenges in the relation between the artifact and the city, it's necessary to evaluate the contact between the two, considering the continuity and contiguity, simultaneity of the flows, and the accumulation of diverse activities.

The railways station is positioned transversally to the dominant axis of growth, on the east edge of the city center, on one kilometer from the main square and the old historical axis of the city. In the opposite direction limits the residential macroregion "Aerodrom". Albeit the immediate contact with the city center and the residential area, this space is urban periphery.

This ambient of periphery derives from the discontinuity in the string of public spaces and referent points. In direction of the city core along the main city axis, the closest object of reference is on 400 meters, and in direction of the residential macroregion, on 620 meters. An interval of total 970 meters, designed only for vehicle transiting, becomes a critical distance. (De Solà-Morales, Ibelings & Frampton, 2008; González & Domingo, 2018) As soon as the perception of distance disappears, the discrepancy between the real and the relative distance widens, and marginalizes the city behind the station (See *Figure 8*).

Along the structure, the interval of interest is among the points where the platform touches the topography. The distances are determined by the sections with elements from higher mobility network. The intersection with the city axis happens in the central segment of the station. Here the artifact has the widest platform section, and serves as an access to the railway station, the post office and a passage for the frequent boulevard of the East-West axis. Despite the permeability, the contact between the building and the public space is autistic. Two opaque cubes, with poor access from the pedestrian walk, create no relation with their surroundings. The result is a dark 100m long tunnel, with high concentration of traffic and blind facades.

The city center is structured by roads that belong to superior road network. Two city highways and two narrower collector roads distribute the main vehicle flows along the city, and all of them pass below the railway station. The traffic interchange between the two highways was not built, so recently, the transversal street passing next to the railway station overtook the roll of the vehicle entrance in the city and in the transportation center/railway station.

The fact that all these streets pass through 100 meters long tunnels under the rails, despite the existing pedestrian and improvised bicycle infrastructure make the railway just formally reachable on foot and bicycle.

Around the artifact the pedestrian flows are reduced to the traffic that the station generates. This traffic depends on the access points, their position and their frequency. It depends on the permeability and porosity of the building and the space around it. As the ambient does not favor simultaneous vehicle and pedestrian traffic, the itineraries are limited inside the building until they reach a possibility for vehicle transport.

Activity wise, the area is mainly monofunctional - residential with disperse occasional spots of commercial activity. The centers of macro region, provide with the basic educational, health and commercial activities.

The transportation node, apart from the basic activities that need to accompany the railway station does not offer anything else. The only use different than residential is in the fenced precincts, but still reduced to a basic commercial and administrative services.

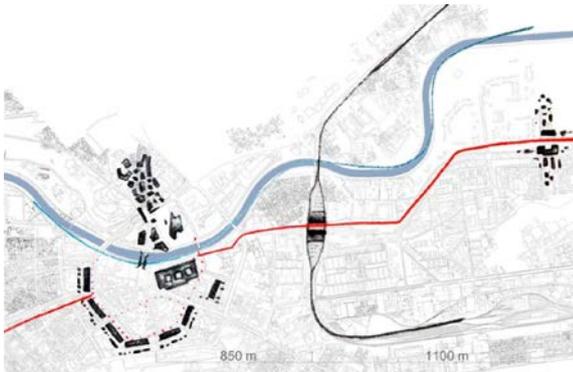


Figure 7. Plan of urban silences. Developed by the author.



Figure 8. Distances along the axis, regarding the railway station, scale of a city. Developed by the author

#### 4.1 Multiscalar pursuit for oportunities

To “measure” the potential of the artifact to structure and transform the city, we need to consider their relation on three different scales: the artifact, the neighborhood and the city.

The criteria refering to the infrastructural building- the artifact, is its architecture and materiality. Inside the building there are architectural elements that materialize the movement (stairs, escalators, elevators, plazas, parking, rails, platforms etc.). They map internal itineraries that once they cross the façade of the artifact should search for possible links within the surrounding urban fragments. The distribution and disposition of the different activities, as well as their quantities and surfaces, define the compatible program plug-ins that will blur the barrier between the artefact and the context where it resides.

On the other hand, I investigate different types of scenarios, currently common strategies for the obsolete or redundant artifacts in the cities. These strategies tent to appropriate and assimilate the artifact through temporary actions and activities that indirectly induce more permanent transformations and habitable spaces. The results of these formal and informal actions, adapt the building, suggest complete reuse or turn it into an event-place with ephemeral and dynamic character.

On a scale of a neighborhood, the capacity for interaction is in the artifact, as much as in the material that composes the immediate context, specifically in the area where the station and the city overlap.

Each fragment has an existing urban pattern and fluxes they bring toward the station. When they meet the station they disperse in the shadow of the building.

Currently the concentration of entrances and fluxes in one area of the building, generates segregation and critical distances along the rest of the building.

The default high accessibility and public space character of the station is a precondition to influence the context and to transform the barrier between the artefact and the city. The empty area below the artefact is a potential urban threshold where the station unfolds into the surrounding area and merge with the city.

On a city scale the biggest potential lies in the topological conditions of the case; the position of the station/ artefact within the city; and its relation with the elements structuring the city. The station "crosses" on top of the main city spine, the river and the green corridor following the river. The intersection is a point where a street or a space changes its values. If we consider possible spatial intersections among these elements, we can turn them in a treedimensional points of positive conflict.

## 5. Is centrality possible?

The centrality is a complex urban event that cannot be precisely measured. Nevertheless, some criteria can be considered as precondition and valuation.

According to Bertolini the station has a default dual identity: as a node and a place. As a node it is defined by the section of the city with the concentration of infrastructure. As a place, he delimits all the built and open spaces, with the activities they host, within the perimeter of walkable radius centered on the railway station building. (Bertolini & Spit, 2005)

Another predisposition for an urban gravity is the public character of the station building. "The public nature of the infrastructure heavily relies upon the fact that the accesses are open to all. The mixture of residents, visitors, strollers and travelers is nearly indiscernible and fluxes produced by the town and the transfer constantly intermingle. The resultant, fascinating bustle and enthralling congestion, has kept transportation nodes central to present-day public space, despite the contemporary predilection to privatize the public space in the name of security and economic logic." (Shannon & Smets, 2010).

As a consequence of high accessibility by different modes of transport, as well as of being part of a wider metropolitan or regional traffic network, the stations emerge as network hubs. These hubs by default have a strategic location in the city, easy access and a tendency to attract variety of activities and users. The internal functional dynamic of these centers engage other non-transport activities that contribute to diverse and dense character of the site. The concentration of different program units, generates vital urban environment and widen the radius of positive socio-economical impact in the urban context.

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# Top-down Large-scale Urban Interventions and Density Profile: the Housing Renovation Program in Moscow

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## ABSTRACT

*In 2017, the Moscow Government launched the Housing Renovation program, actually focusing on the demolition of existing houses and further construction of higher residential. As a post-socialist metropolis, Moscow still shows specific land use patterns: a positively sloped housing density profile. Being a top-down large-scale urban intervention, the Housing Renovation program decision-making resembles socialist urban development logic while representing a housing mega-project under contemporary limits to outright coercion.*

*This paper discusses the effects of massive urban projects produced through top-down logic on a post-socialist metropolis through a case study of the Moscow Housing Renovation program. The paper investigates how residential mega-projects based on a top-down approach influence the spatial structure of the city. Using a quantitative approach, the research makes visible how the population density gradient changes as a result of urban development by decree in the contemporary post-socialist metropolis.*

*The study finds that a top-down approach to housing problems shifts the driving force behind this density gradient from individual decisions to an authoritarian decision-making center. It might result in strengthening the perverse population density gradient, typical for socialist cities urban structure.*

## KEYWORDS

*mass housing, post-socialist city, housing policy, urban redevelopment, population density*



*Figure 1. Example of house built under the Renovation program  
(Source: Moscow Complex of Urban Planning Policy and Construction)*

## 1. Introduction

“New micro-districts will be developed and citizens will use them for decades” – stated the current mayor, Sergey Sobyanin, at the beginning of the new Moscow *Renovation* program (TASS, 2017). The naming of this signature project seems intentionally misleading: in fact, the program proposed demolition of ten percent of the existing housing stock and further high-rise development for more than a million residents in 350,000 apartments. The project was controversial from the beginning, provoking opposition of experts (Trutnev, 2017; Zubarevich, 2017) and protests of the residents (Evans, 2018; LLC "Center for social design "Platforma," 2017).

What is now to be demolished mostly consists of an even larger housing development intervention – prefabricated Khrushchev-era blocks, so-called khrushchyovki. Those five-storey houses of the 1950s and 1960s of a very recognizable design were developed in order to solve the acute housing shortage problem. Today these types of apartments are often referred to as small, obsolete and poorly maintained ones; many colloquially call Khrushchev-era blocks khrushcheby, the "Khrushchev slums" (Colton, 1995). In terms of urban planning, the Khrushchev era marked the end of the compact city concept (Urban, 2013) as the new housing development was located on unbuilt lands.

What is now to be developed is not yet fully understood, however first completed houses and preliminary published concepts permit some conclusions. First, the announced 2.5 times density increase turned out to be 3.5-4.5 times increase. Secondly, the originally promised 6-14 storey buildings turned out to be mostly 20-30-storeys ones (*see Fig. 1*). The locations of future developments are determined by the list of so-called “launch pads” – land plots intended for construction published by the Moscow City Government. Architectural design and typology of housing resembles

late-Soviet solutions with adaptation to new requirements, while the approach to residential infrastructure and distribution mechanism have changed dramatically. This type of estate is aptly named a “mutant – a Soviet skeleton dressed in the latest fashions” (Paramonova, 2020) and represent a “welfare state building without welfare state” (Glendinning, 2020).

After experiencing decades of central planning, Moscow still demonstrates characteristics of a post-socialist metropolis, such as a large share of industrial land in the middle belt, diffusion of property rights and, what is most important for this study, high-density mass housing in the outskirts of the city (Bertaud, 2006; Hamilton et al., 2005; Mason & Nigmatullina, 2011). This extensive rather than intensive land use pattern has resulted in consecutive circles of housing stock of a certain age and typology around the city center (Colton, 1995). Housing development approach is still clearly visible even after the collapse of the socialist urban planning system as new large-scale estates were still mostly built adding a new urban layer while the pre-Soviet and Soviet built-up areas remain largely intact (Gunko et al., 2018; Kalyukin & Kohl, 2020).



*Figure 2. Demolition of khrushchyovki  
(Source: tvc.ru)*

The most telling indicator of socialist legacy in the spatial structure of Moscow was the positive population density gradient rising from the center to the suburbs, contrasting with the market city. As Buckley points out, “most cities without monocentric morphologies have extreme planning and rigid enforcement of plans” (Buckley, R. M., 2018). The source of the phenomenon in post-socialist cities was embedded in the socialist land use process because urban planners have made their decisions under distorted indicators, in the absence of land prices, real estate market and centrally descended priorities (Bertaud & Renaud, 1994). While most post-socialist cities started



moving toward more intensive use of city center and potentially more negative density gradient (Bertaud, 2006), recent studies show that Russian cities still have particular density gradients: with deep “moguls”, flat, random or positive; Moscow is one the most extreme examples of the latter. The reasons why old morphologies persist in Russia 30 years after reform are yet to be explored.

The *Renovation* program demonstrates a different spatial approach to housing stock development compared to the socialist era concentric greenfield development. The *Renovation* approach is more infill and land-intensive, as “launch pads” are located mostly inside the urban fabric. On the other hand, the *Renovation* itself is a clear example of top-down intervention that, as discussed before, often results in a perverse density graph. Therefore, the realization of the program in the format initially planned by the Moscow City Government might result in both more negative or more positive population density slopes: answering this question is the key empirical research problem of the paper.

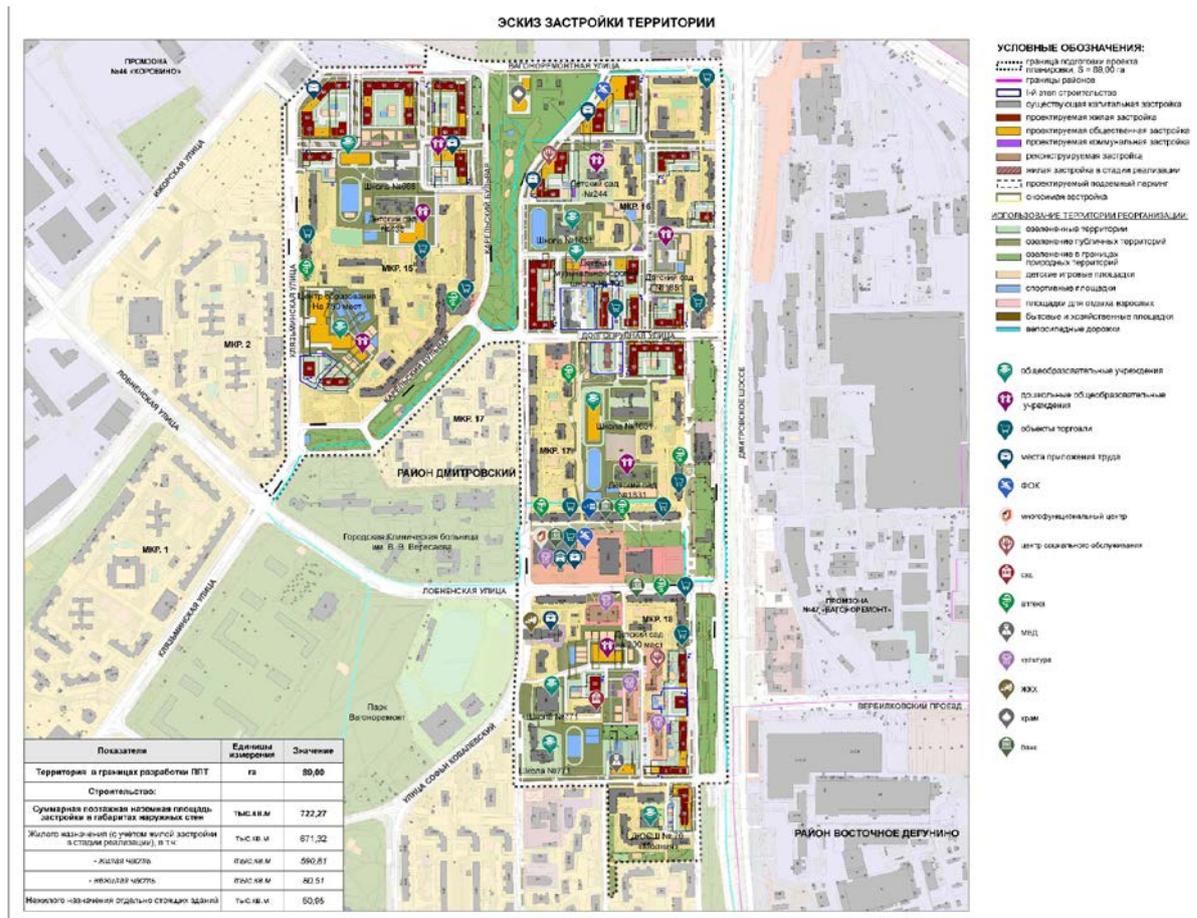
The present research extends our knowledge of functioning of post-socialist cities today as most studies on post-socialist cities have focused on the transition, on the adaptation to the capitalism-based provision of urban infrastructures, or on the outcomes of the deregulation of urban development (Sýkora & Bouzarovski, 2012). However, the effect of reintroduction of top-down approach to housing provision instead of ‘regulative’ tools has yet to be understood. As Büdenbender and Zupan claim, most studies are “tracing the successive fading of socialist legacies, rather than conceptualising how these legacies have become functional constituents of various forms of neoliberal urbanization” (Büdenbender and Zupan 2017).

This paper is an attempt to estimate how the housing mega-project *Renovation*, a valuable example of top-down urban governance, was planned to change the existing characteristics of urban development of a post-socialist city on agglomeration scale. It should be noted that current research is not focused on the actual results of the program as it was changed significantly due to residents’ resistance, land use issues and market tensions. Since the main interest of our research is to examine the decision-making logic in a neoliberal city with socialist legacy, the main research focus will be on the initial plan indicating the priorities and approaches of the government in the urban housing policy.

## 2. Methods

The research is based on the approach developed by Bertaud (Bertaud, 2004; Bertaud & Malpezzi, 2003; Bertaud & Renaud, 1994) and widely adapted in academic literature (for example, Plessis & Boonzaaijer, 2015). This method investigates the distortion of the Standard Urban Economics Model with a negative density graph on a specific urban settlement, and discusses the reasons for such an outcome (Bertaud, 2018). With a certain level of simplification, the resulting density graph dynamics visualize the outcomes of an intervention on the spatial structure of the settlement. This instrument gives the possibility to estimate the results of *Renovation* program and its possible future influence on the spatial structure of the city.

According to the chosen method, a quantitative approach was used in the data analysis. The dataset consists of a list of to-be-demolished buildings, site design projects for the *renovation* micro-districts (a primary structural element of the residential area construction, usually covering area of several tens or hundreds of hectares). The list of demolition buildings (4507 houses) was published by the Moscow City Government and collected by web scrapping. Site design projects dataset (84



### МАТЕРИАЛЫ ПРОЕКТА ПЛАНИРОВКИ ТЕРРИТОРИИ МИКРОРАЙОНОВ 15, 16, 17, 18 РАЙОНА ДМИТРОВСКИЙ ГОРОДА МОСКВЫ

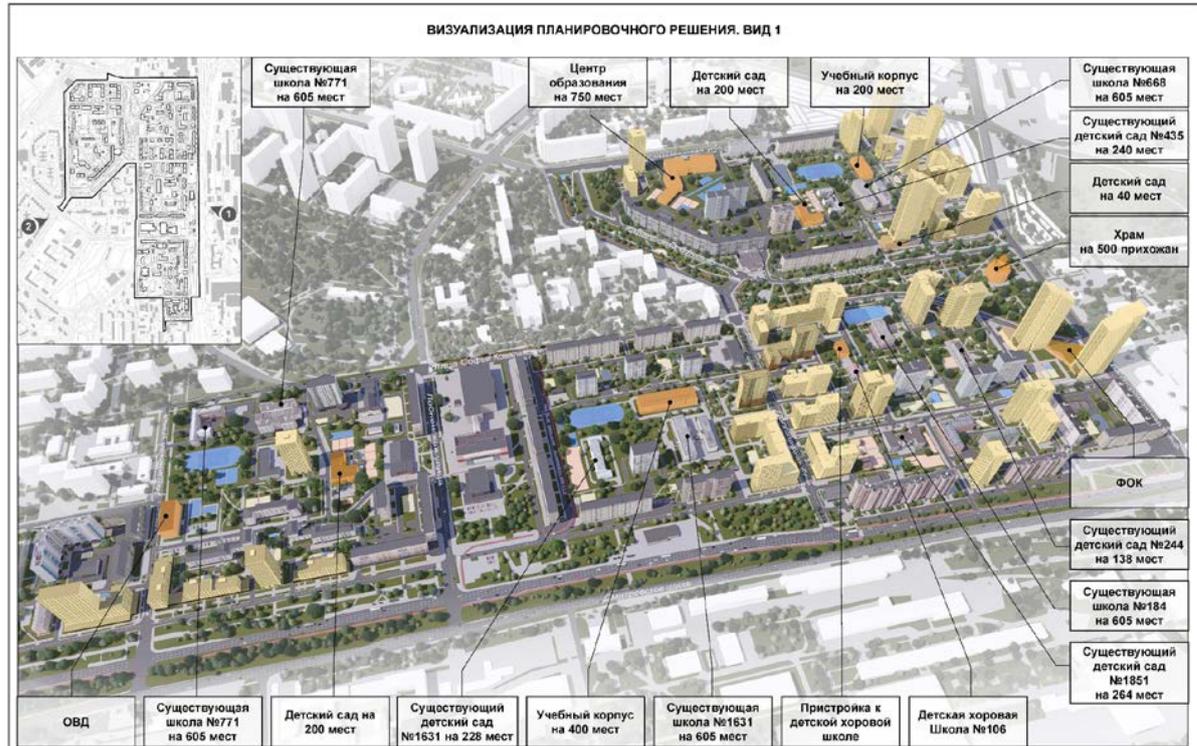


Figure 3. Examples of materials published by Moscow city government: development plans and tables (Source: public hearings materials)



sites) contains preliminary information on the volume and structure of new construction planned in the *renovation* micro-districts; data from these documents was collected manually. These datasets were combined with the data on existing real estate and housing within administrative borders of Moscow.

In order to develop the main analytical instrument of the research, the density graph, the collected data was processed in three stages. In the first step the houses for demolition were selected. The second step was mapping and attributing quantitative data to development sites. At this step, new development volume was attributed according to the design project for micro-districts with available documentation (see Fig.2). New development volume in *renovation* micro-districts for which design projects have not yet been published ( $\approx 40\%$ ) was extrapolated according to the demolition at the rate of neighboring micro-districts. The third step was aimed on developing housing density graph in built-up areas according to the concentric circles around the city center (starting from the Kremlin) in order to estimate i) existing housing density in 2017 and ii) hypothetical housing density if the project followed the schedule and published quantitative indicators. Concentric approach is generally the most applicable to Moscow as its historic patterns of development were in circles. Concentric density visualization is particularly applicable to Moscow due to its monocentricity and circular development pattern, as discussed above. Investigated circles run to 25 kilometers as the Southwestern part was included only in 2014 and is relatively underdeveloped; the most interesting part regarding the research goals is the so-called 'Older Moscow' within 20-km zone. The Atlas of Urban Expansion was used as the main source of built-up areas mapping (Atlas of Urban Expansion - Moscow, n.d.); our calculation considered Moscow within the administrative boundaries.

Before interpreting the results, it is necessary to emphasize that the present research examines goal and method setting of city authorities, therefore evaluating hypothetical consequences of decisions made by them under conditions of no friction with the urban community, no legal or technical difficulties, etc. In reality some apartment owners managed to quit the *Renovation* program, some development sites were excluded due to engineering difficulties, etc.; this process is not over yet. Therefore the real impact of the program implementation is a different research question and should be studied separately after the end of the program.

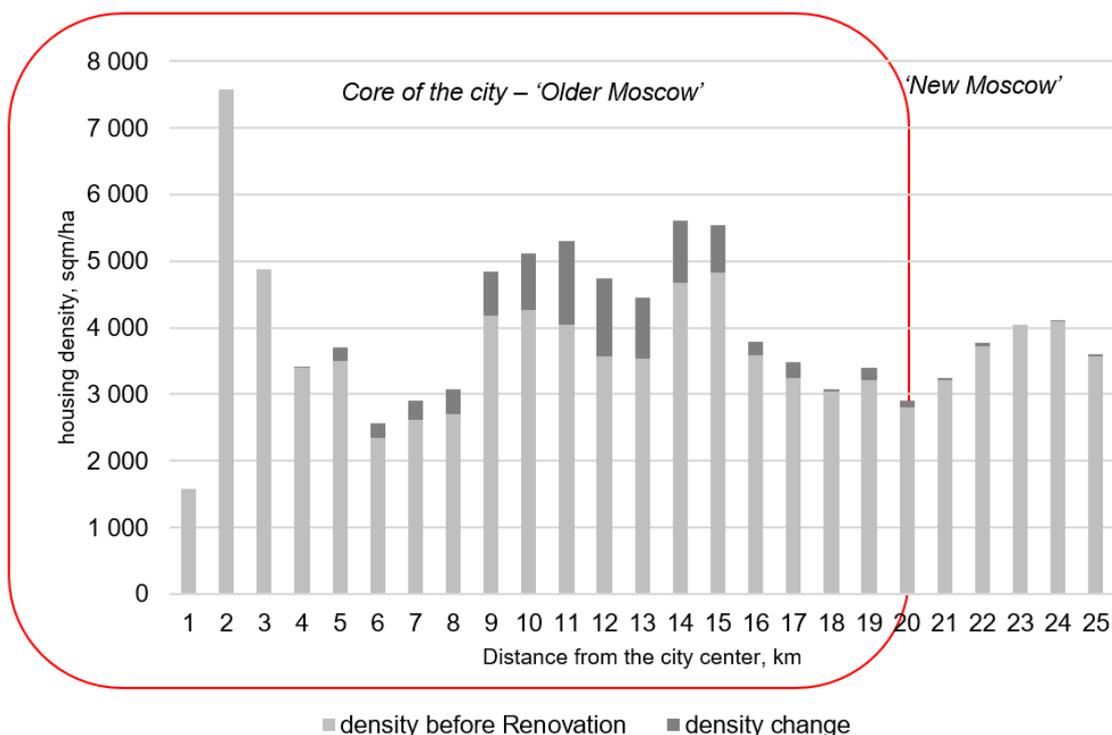
### 3. Results and discussion

Changes in a density graph of a post-socialist city as a result of implementation of a large-scale intervention can tell a lot about the character and administrative approach of such intervention. Comparison between the existing housing density in the built-up areas with the one that would hypothetically result from the full implementation of the *Renovation* project is presented in Fig.3. It shows significant increase in density in the middle part of the 'Older Moscow' and on its periphery, while 'gaps' in more central locations remain almost intact. Density graph of "Older Moscow" in terms proposed by Robert Buckley can be defined as a deep, early mogul: density declines for some distance and then rises sharply before decreasing again (Buckley, R. M., 2018). The areas of the most notable increase in the housing density are Soviet-period residential areas, a significant part of which are called *spal'nyj rajon* (a "sleeping" district with a predominantly residential function). As a result of the

*Renovation* project implementation, residential density in these areas will only increase. Instead of being redistributed into less populated inner parts of the city. Positively sloped housing density profile becomes even stronger after the project implementation.

Figure 3. Housing density profile in the built-up areas of Moscow before and after the implementation of the original *Renovation* plan (Source: Author's own elaboration)

Despite the democratization of the process of demolition through public consultations, *Renovation* program is undoubtedly top-down, as the public discussion took place only in a posteriori form and did not influence the design of the policy itself (Inizan & de Lille, 2019). Therefore, city government decisions contribute to contradictory consequences of a positively sloped housing density profile in various spheres of urban life: inefficient land use, increasing commuting costs and excessive investments in urban infrastructure (Tosics, 2005). In addition, economic considerations forced the city administration to agree on plans that contradict the original promises: only 1/5 of the houses planned for construction is below 15 floors, while the maximum density level is also exceeded in significant share of micro-districts.



Despite the difference in approaches and policy technologies used in solving housing problems in a post-socialist megapolis, the *Renovation* project only strengthens the socialist density patterns.

Several explanations can be proposed why this uneven spatial distribution of new *Renovation* housing development was projected in the policy design. First, land assembly that might fill the gaps in more central location of the city is more lengthy and problematic. Land plots in the central part of the city are smaller and require additional negotiations with various owners, while perspective new development volume is significantly less and does not fit the typical developers' requirements (Gunko et al., 2018). Second, the *Renovation* program was designed so that new development in *renovation* districts exceeds the total housing for demolition at the average rate of 3.2, reaching 4-5 times rate in some locations. This extremely large-scale (and high-rise)



development would be more difficult to realize closer to the city center, where heritage objects and locations in general attract more attention from the citizens (Argenbright, 2016). Third, the 'golden ground' next to the city center, can be potentially sold or rented to private investors in order to develop more expensive housing projects, rather than be redistributed to *Renovation* housing residents.

At the same time, some media publications and expert opinions indicate deeper reasons for *Renovation* policy design rather than fast and easy implementation. One of the factors is a paternalistic state turn: government relieves citizens of the financial burden of housing maintenance and gives them a new apartment as a gift. While the realization of this program relies rather on persuasive forms of power than Soviet coercion technologies, certain similarities, especially in neglection of property rights, can be drawn (Zupan et al., 2021). Another factor is the industrial approach to housing noted back in the early 90s and largely preserved nowadays: all actors involved in housing construction have incentives to demolish and erect prefabricated high-rise blocks rather than to restore the old buildings (Kalinina, 1992). Finally, in most locations the estimated volumes of construction exceed those required to ensure the resettlement of residents of old houses and include a significant share (up to 70%) of apartments for sale: this indicates the significant benefits of large companies in the construction industry from the project (based on author's calculations for *Renovacija Zdorovogo Cheloveka* (the Healthy Person's Renovation, 2020) project). This tangled web of conflicting incentives, changing political environment, socialist planning and management legacy has led to a housing issue solution that strengthens the density patterns of a socialist city 30 years after the collapse of the socialist system.

### 3. Conclusion

Through the case of the *Renovation* housing project, this paper reveals the decision-making logic in a neoliberal city with socialist legacy and estimates the effects of top-down urban governance on urban development of a post-socialist city. The research also demonstrates that down-to-earth considerations rule the decision-making process: policy design demonstrates priority of short-term objectives with simplicity and fast implementation over long-term controversial consequences expressed by, among other things, a more distorted density graph. At the same time, decisions of city authorities, especially such massive ones, have long-term effects and will influence the life of future generations of the citizens, even the ones not directly involved in the program.

Long lifespan of this large-scale expensive housing program, as mentioned by the mayor in the beginning of this paper, is the crucial reason why their implementation should be investigated. New housing development radically changes the existing urban fabric and produces adverse long-lasting effects that are/will be difficult to change (Buckley et al., 2016). With the *Renovation* program, its massive effects are particularly acute: policies are developed, tested and for the first time implemented in the capital and are afterwards expanded countrywide (Zupan et al., 2021). Federal expansion of the program has started with introduction of new legislation at the end of 2020, where the approaches and technologies enshrined in the law have many similarities to Moscow *Renovation*. Although the design of all-Russian *Renovation* is different from the Moscow one, the general tendency towards top-down approach, large-scale interventions, preference for quantitative performance indicators and only *a posteriori* citizen participation can be indicated in both policies. This similarity suggests similar

outcomes in density profiles of other Russian cities as a result of the program implementation.

Although the technology used in the *Renovation* project is significantly different from the one used in the socialist urban planning and development, these non-coercive forms of power result in resembling characteristics of urban structure. Top-down approach and large scale of the proposed solution leave no room for participation, careful infill development and social mix notions. Moscow, where public authorities collaborated with politically connected development and investment companies are the main driving force in urban development, develops its own approaches to urban issues (Pagonis & Thornley, 2000). In this sense the *Renovation* project is a valuable illustration of the splintering post-socialist urban world: as cities lose their discipline and uniformity, their individual trajectories and choices become more visible (Hirt, 2013).

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## People's Park: an Overview from Examples of Post-Socialist Urban Parks in Europe

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### ABSTRACT

*It is seen through time that the human being needs to be close to nature. Over the centuries, the presence of areas that brought aspects of the countryside was always fundamental. Urban parks, in the 19th Century, were areas that provided freshness effects for an industrial city, society needed for physical and mental well-being, not even taking into consideration the sustainable and sanitary functions. In this regard, it is interesting how each society and public policy developed these spaces in the cities we live in today, including how the political models structured the urban design of the public areas of some of them. However, these areas were also tools of political theories towards society, such as the Soviet theory in which shows the need to build public spaces for a new "socialist man. This work aims to overview three public urban parks that were an instrument that helped to build a socialist society, known as "people's parks," their history, and how they were essential to the urban fabric today, especially in certain well-known cities in post-socialist countries such as Russia, Germany and Hungary, taking in consideration their actual situation, as their uses and interventions through time.*

### KEYWORDS

*Urban Parks, Socialist Regime, People's Park, Cultural Parks, Landscape design.*



Figure 1. Naum Granovsky. Gorky Park. Girl with an Oar. 1930 (Source: [www.park-gorkogo.com](http://www.park-gorkogo.com))

## 1. Introduction

Some European countries keep remnants of the period in which the Socialist political regime was established. Between 1945 and 1990, it is possible to observe the social and political structures acting directly in the design of many cities in Central and Eastern Europe. Thus, although public space and housing were the main targets of the changes associated with developing and implementing socialist political ideals and aspirations into the city, the model should be a fundamental structural transformation for society.

The Government at that time used the design and function of the public spaces as a tool for controlling people's lives. "This concept of controlling the elements of human existence through environmental design was rooted in the writings of utopian socialists during the nineteenth century and the modernist principles of city planning established in the 1920s." (Egel, 2006). The modernist socialist concept for the city design shows a clear division between the public centers, the street system, and the green system.

The public places were an essential structure in the Soviet cities, where should be prioritized over the private places, bringing the basic ideology of the political view. Thus, the State-owned all the urban land and all open spaces were considered public. According to Barbara Engel (2006), in Russia, the term "social space" was defined as free/open spaces, but in a way that focuses on the importance of these areas on the city's structure and as the center of social life. Based on this, it is possible to see many government investments aimed at structures for the everyday use of public areas. Large parks with many different attractions are one of many examples within the city.

According to Henderson (1995), the Volkspark (People's Park) concept was initially developed in Germany by landscape architects during the turn of the Century. These parks were easy to construct with little investment after buying the land, and because its simplicity was very ease of maintenance. It was necessary because the national economy was devastated after war and revolution, and the people needed

something to the general morale. The simplicity was a break from the usual bourgeois rules and formality of gardens and parks.

The concept of Volkspark was ideal for the Socialist ideals, not only the concept but also existing spaces that were modified to fit into the scheme, where big green spaces could be a path from political demonstrations and National celebrations together with the atmosphere of relaxation and leisure for everybody. The context of monumental spaces in the socialist towns was a symbol to demonstrate State power and control and as an instrument of social restructuring with a modern ideology, according to Hirt (2014).

These fair large green spaces produced or collected and adapted during the socialist period could bring many activities and resting areas, so they significantly had people's interest at that time. Green spaces in this political system cities had a different dimension compared with other cities of different political ideals. Hirt (2014) compares two cities and shows that in 1990, public green spaces per capita in Budapest were almost four times that in Vienna.

However, after the decay of Socialism, the generous amount of land decreased, capitalism views land as a source of money. Therefore, although all the modifications of urban structure adapt to a new political regime, today is possible to see examples of the so-called Cultural parks or Soviet public parks. One of the most well-known of them is the Gorky Park in Russia (See *Figure 1*).

These parks for people demonstrate the remains of the socialist designs and ideologies, with physical modifications throughout time adapting for a new way of living. In addition, to socialist ideas newly imposed on urban planning, there were many existing structures with a very different historical context that had some modifications throughout the Socialist regime, including the urban parks. The green system served two functions, recreation, and celebration for national events, being a stage for political functions, where citizens could read through its design, showing values of the Socialist regime through monuments and memorials.

The paper's content was important for collecting data about the characteristics of a study sample of three post-socialist urban parks. For the analysis it was necessary to research their histories, their situation inside the cities, their design concepts within their social situation, sizes, and qualities, being possible to understand more the relation from the political aspects and how it could affect their designs. The research aims a personal objective, keeping developing the necessary knowledge to the doctoral thesis related to large urban parks.

## 2. The model of Soviet Parks of Culture and Recreation

The Soviet model of Culture Parks intent to provide opportunities for entertainment, self-education, culture, and quiet rest, at the same time being a stage for celebrations of social and political significance. They include a wide range of institutions and facilities to incentive people to stay in there.

On the Soviet urban planning view, a cultural park should be set up in every city, and in case of bigger ones were incentivized to create more than one. Its most central location, essentially close to the people's living areas creating then a closer relation of the city's inhabitants with the nature. For the better quality of environment enjoyment of the population, these parks usually were close to water surfaces as rivers or had in them fountains or pounds, were located away of railways and industry plants.

According to Ormos (1967), it was very important that the cultural park was within 2-3 km from any point of the city, so it could be reached in 30-50 minutes on foot, in a

well-accessible place. They fit well into the green area network of the city and can be reached from every row of trees and park lanes. Ormos (1967) also said that when was about sizing cultural parks, it was possible to take as a basis the idea that 20% of the population visits them on public holidays and approximately an area of 10 m<sup>2</sup> had must be calculated.

### 3. Park Overview

#### 3.1. Gorky Park of Culture and Leisure - Moscow

Gorky Park is an urban park located in the center of Moscow, Russia. It has 120 hectares of area and officially opened on 1928; the original plan was that its size covered 500 hectares. It was named in honor of Maxim Gorky in 1932. The Park plan was developed by architects Ivan Zholtovsky, Konstantin Melnikov, and Alexander Vlasov. Initially, the creation of the Park was based on the general plan developed by I.V. Zholtovsky. However, in 1935, a competition was announced to create a master plan for a new park and projects of small architectural forms for it.

It was the first Park of Culture and Leisure in the Soviet Union. "The term 'park of culture and leisure' was an invention of Soviet bureaucrats. It reflected the dual-task that new public parks had to perform: on the one hand, to provide facilities for rest and recreation while, on the other hand, to become spaces of propaganda and education." (Vronskaya, 2015)

According to Vronskaya (2013), at that time, right after its opening, a complex system of parks with the same structure and ideologies was developed, in which every town, large village, and many collective farms would receive their public Park. Its site origin dates from 1923. It was used for the All-Russian Agricultural and Handicraft Industries Exhibition.

The Gorky Park continued the tradition of the German Volksparks, that served as spaces of rest and physical recuperation for the workers of big industries from the second half of the 19th Century, combining the Marxist concept of leisure, not only helping recovering health of the working population but also being a place to improve their mental and physical abilities, according to Vronskaya (2013).

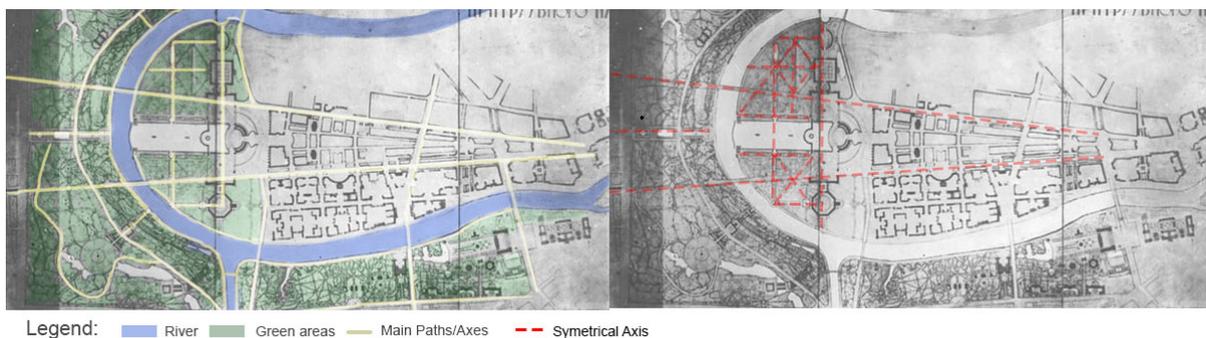


Figure 2. The general plan of Gorky Park in 1938, on the left side, the author interpretation of the pathways, green space, and the river. (Source: [www.culture.ru/institutes/13938/centralnyi-park-im-a-m-gorkogo](http://www.culture.ru/institutes/13938/centralnyi-park-im-a-m-gorkogo))

It is noticeable at first the location of the urban Park following the river. According to Bakay (2012), a cultural park is typically a large-scale park, if possible, located on the riverbank, in which cultural institutions, sports facilities, and children's playgrounds could be located. For its large scale, it is possible to understand more about the layers

of the paths, in a macroscale as very geometrical straight lines emphasizing the classical and geometrical way of planning. The main Street lines from the urban fabric of the city continues in the park, showing multiple connections between the city to the park. In a microscale view, the design transforms into a more organic drawing into the green spaces. (See Figure 2).

Between the many attractions conceived by the authors, there were exhibition pavilions, a decorative pool, and for children a town where a tent circus and the first children's railway worked. In the 1950s, its restoration took a start, among all the improvements, installation of an open-air fountain, the installation of an Arch at the Central Entrance, and others.

"Throughout the socialist decades, the parks and gardens that they built were full of all sorts of people at all hours of the day." (Hirt, 2014). According to Vronskaya (2013), the socialist parks were supposed to discourage the passive rest of the workers, and to improve themselves intellectually and physically. These areas were places that shared attractions such as theatres, circuses, and other performances as well.

However, from the 1980s, the Park started declining. After that, in the 1990s, the park started to charge a fee for the entrances, the Park's sculptures and architecture fell into decay, and the area was filled with advertising arrangements. The process of renovation started in 2011. With the help of private initiatives, new trendy places were constructed contrasted with the classical elements from the original design.

Today the Park shows the contrast of eras through design. However, the very significant large area of green space with proximity to the water surfaces brings the population to visit it, not only on warmer days but also on its various activities and spaces. It is an inviting space with many attractions (See Figure 3) such as cafes, restaurants, museums, event, and educational centers, bars, theaters, exhibition areas, playgrounds, a beach, sports facilities, boat tours, and free activities such as yoga and dance groups where anyone can join.

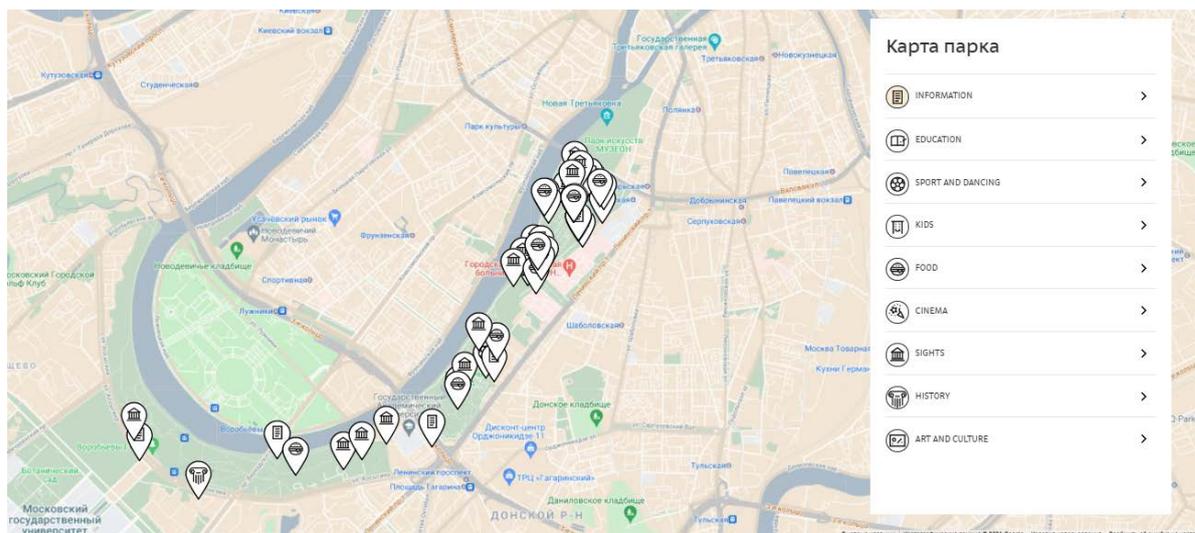


Figure 3. Map of activities in Gorky Park (Source: [park-gorkogo.com/en/map](http://park-gorkogo.com/en/map))

The Gorky Park has the advantage of being accessible in different locations where it is possible to find metro and bus stops plus electrical bike spots. Furthermore, it is in a very central place, between the first and the second street rings of Moscow, and due to its size, it provides park recreations and leisure possibilities to the nearest residents and tourists.

In any case, the Park demonstrates how some Soviet ideals prevail as the principles of personal advancement concerning cultural learning and physical rest but are shaped by the current political regime and how it is essential to the contemporary design of parks today. It comprises a sizeable extension with diversity and an escape from urban life.

### 3.2. Grosser Garten - Dresden

The Grosser Garten is located on the southeast of the Dresden city center, in Germany. It has a baroque origin, built around 1678. With the passing of time it was reshaped but its basic baroque structure is still there. It is the largest park in the city with 147 hectares.

According to Stilgenbauer & McBride, (2010), Germany began to be air raided in 1940, many cities and industrial sites were bombed through the war, Dresden was spared from bombing until the last few months until the end of the war, the city was considered a traditional seat of European culture, an important rail network hub and a less strategic city. Dresden was bombed over three days, being target of incendiary area bombing, and large parts of the urban forest dated from the late Renaissance were ruined, many of the trees that were not destroyed were very damaged and a total of 170 craters of bombs were found in the Grosser Garten.

During the division of Germany, Dresden was in the Soviet zone, under the political and military control of the URSS. From 1950 the Soviet government announced a guidance for the reconstructions of the cities on the Eastern Bloc, the “16 Principles of Urban Planning” with many modernist ideas, together with the Soviet ideals of the controlling of public spaces, as the planning of open spaces for large political demonstration and public marches.

In 1951 there was a competition for a redesign of the Grosser Garten, won by the architect Werner Bauch, it was labelled as a Park of Culture and Recreation, as the model of the Gorky Park of Culture and Leisure in Moscow. However, the park has not lost its main features, the main geometric lines characteristic of its baroque design continued. It is possible to see how this design fit into the culture and leisure park model, in which the monumental proportion and symmetry of the passed bourgeoisie tradition were well placed in this context. (See Figure 4).

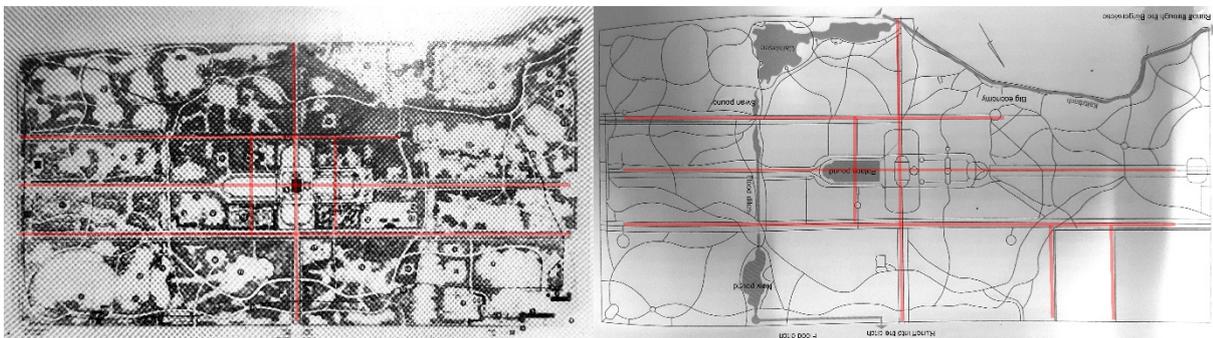


Figure 4. A collage from the Grosser Garten plan of 1950 and on its side a layout from 1900. (Source: Ormos, I. (1967). *The history and practice of landscape architecture*. Mezőgazdasági Kiadó and Krihning, S. (2013). *Grosser Garten zu Dresden 1873-1945*.)



Figure 5. A map of the Dresden's Grosser Garten and its facilities. (Source: [www.grosser-garten-dresden.de](http://www.grosser-garten-dresden.de))

Today, the park charges an entrance fee, has several attractions and serves as a stage for various events and presentations among the most diverse uses. There are lakes and fountains, historic buildings, sculptures, as well as restaurants and cafes, a playground, open air stages, a zoo, a museum, minigolf and even a railway, which has been running through the Great Garden since 1950.

### 3.3. Városliget - Budapest

The Városliget, or City Park, is in Budapest, Hungary, and covers about 98 hectares. According to Gothár (2017), the Park was originally a royal hunting ground in medieval times, abandoned and neglected until the 1750s, and in 1805 on behalf of the Royal Beautifying Commission (Királyi Szépítő Bizottság), the development of the public urban Park began through an international design competition. The winner's plans were from Christian Heinrich Nebbien. Gothár (2017) reported that the design followed the theory of Hirschfeld he's goal was for the moral education of the population through nature experiences.

Gothár (2017) reported that during the turn of the Century and the First and Second World Wars, the Park suffered several damages and renovations, passing through the planting of new trees and concreting areas that previously had vegetation. After this period, the communist dictatorship in Hungary began in 1947, and new modifications throughout the design started to appear.

After the Hungarian Revolution in 1956, the traditions of exhibitions inside the Park continued with the socialist edition from the Budapest Industrial Fair. On the soviet period the park lost a portion to create a larger street. "At the beginning of the Rákosi-period the decision was made for the widening of the Dózsa György Street (See Figure 6) and the establishment of the Felvonulási Square (today Square of Ötvenhatosok), particularly for military parades and labour movement marches, and the later installation of the Stalin Statue" Gothár (2017).

Városliget design changes showed the symbolism of power from the Stalinist dictatorship, such as the enlargement of streets and creating squares for military parades and marchers, movements of workers. Furthermore, it was possible to identify similarities in the City Park as the socialist concept of cultural parks, turning Városliget the 'People's Park of Budapest.

The Park is currently undergoing transformations through the Liget project. (See Figure 7). Among the various site works of museums, it was also possible to highlight restoration projects and the recovery of open areas. In addition, it is possible to see an investment in areas focused on children, areas for dogs, and sports. Studies by Szilagy (2014) pointed to decreased number of child visitors; perhaps this was one reason for developing attractive spaces for children.

Among the sports facilities that can be found today due to the Liget project can be mentioned: multifunctional grounds, 2 km and 200 m running circles, street workout equipment, chess tables, table tennis tables, a petanque court, artificial turf football pitch, and rubber-surfaced basketball court.



Figure 6. Renovation plan of Városliget and the widening of Dózsa György út. (Source: Radó, D (1985) : *Budapesti parkok és terek*, published by: Magyar, Nemzeti Galéria.)

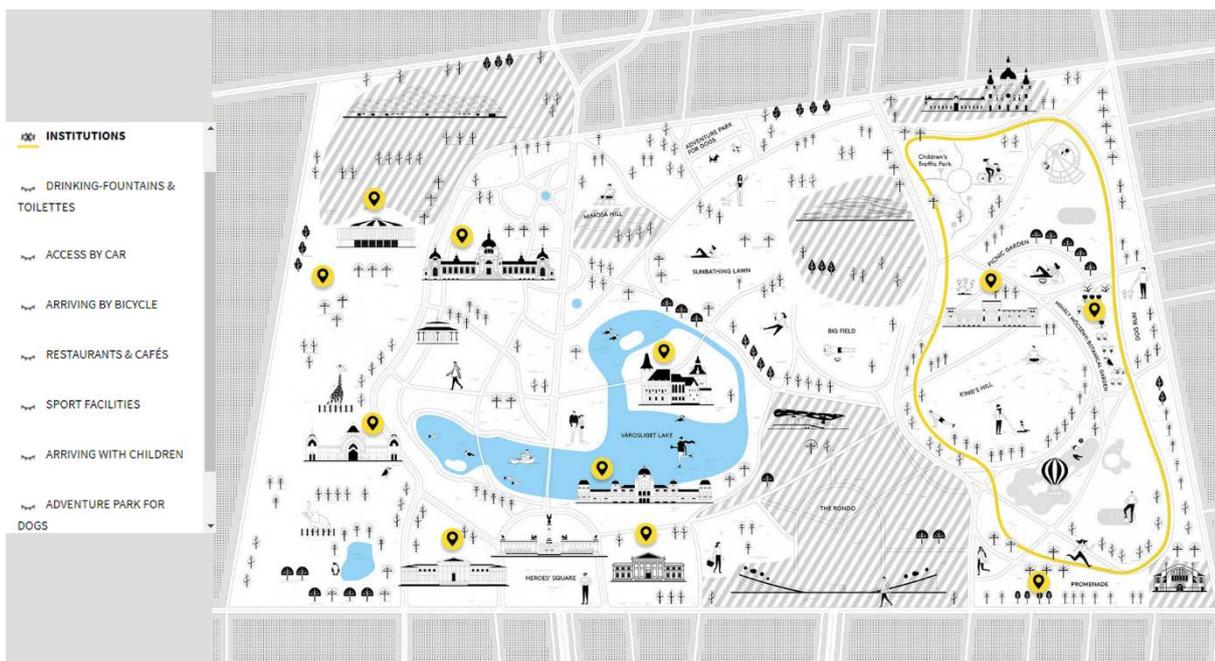


Figure 7. Illustration of Városliget with the location of its facilities and current construction site areas. (Source: <https://ligetbudapest.hu/en/map>)

## 4. Conclusions

The urban parks presented on this paper show different scales and backgrounds and each one of them has something interesting regarding their uses, design and their importance for the urban life. Gorky Park serves as a clear example of socialist ideas put into practice in the form of a landscape project. The example tried to mold the new society together with a utopian and magnificent design reaching the exaggeration of scales that become disproportionate to the human being, demonstrating strength and power but at the same time made for people to enjoy this space.

However, it is undeniable that, theoretically, the ideas of the socialist regime have positive aspects, including mental evolution and physical recovery, modifying the idea that this was only valid for the bourgeois and that this ideal is very acceptable and required towards new projects regarding public spaces. Furthermore, the conceptual aspects, the physical and natural characteristics of the Park were/are of great importance for the city and the population, and it is still a great attraction to both tourists and locals.

Regarding Városliget Park as the Grosser Garten in Dresden, it is possible to see the contrast with Gorky Park as these were initially created in a different political regime, and going through the socialist regime, they received several modifications over time. Concerning the Városliget, Gorky and Grosser Garten design involves creating a space for recreation, culture, and moral development through the encounter with nature, but at the same time, seems that the baroque original design of the Grosser Garten fits more the expectations and ideals of the soviet design ideals than the Városliget formal and organical landscape design.

The examples have topics in common, but their similarity on how they were formed or modified during the socialist period could be highlighted. It is not new that the vast green areas bring many qualities to cities and people's daily lives; among them, topics such as rainwater drainage, advantageous spaces for biodiversity, buffering zones from the city noises can be mentioned. Those areas can be crucial for environmental losses or gains.

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# Regenerative Design and Co-commitment as Decisive Factors in Mass Housing Revitalisation

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## ABSTRACT

*The paper introduces a participatory method for re-generation of the common spaces in residential neighbourhoods, especially in case of post-war mass housing. The method combines regenerative design and co-commitment that are recognized as decisive factors in mass housing revitalisation. The spatial focus of the research is on New Belgrade Blocks (Serbia) that are part of the larger phenomenon of the post-socialist urban heritage. The neighbourhoods that are part of this larger framework are having common attributes and facing similar issues nowadays. Comprehending and managing change in these neighbourhoods requires community-driven actions that would include all relevant stakeholders in the process through co-commitment. The actions, that would be based on regenerative and biophilic design, would ensure both maintenance of green spaces of the neighbourhoods, as well as integration of new nature-based solutions. The approach is enhancing the role of community and highlighting the important values of common spaces in ensuring vitality of mass housing and co-creating healthy and liveable environments. The paper is contributing to contemporary discussions on resilient cities and communities and promoting participatory and integrated urban renewal.*

## KEYWORDS

*regenerative design, co-commitment, mass housing, revitalisation, common spaces*



Figure 1. R-urban, AAA, 2008. (Photography © Andreas Lang, Source: Hiller et al., 2018)

## 1. Theoretical framework

The importance of participatory integrated planning has been present for some time in the urban discourse, especially when addressing the existing urban heritage. In addition to that, and in context of the increasingly important discussions on climate change and climate-related actions, the implementation of nature-based solutions in urban areas is an emerging topic. Not only theoretical studies and concepts, but also urban practices, are recognizing the importance of these topics. As this paper proposes, the convergence of these approaches and their further evolution into novel solutions is a key for co-creating healthy and liveable environments. The need for upgraded concepts has been recognized in the New Leipzig Charter (The New Leipzig Charter, 2020). As stated in the Charter, the integrated and sustainable urban development has been in the focus of multiple European and global agendas for some time (and also Leipzig Charter from 2007), and the concepts are still relevant today. Nevertheless, new global challenges that have direct impact on cities, such as loss of biodiversity, resource scarcity, demographic change, pandemics and rapidly changing economies are urging for upgraded concepts. As some researchers claim, “sustainability is no longer enough” (Wahl, 2019, Williams 2019). Regenerative design emerges as a new paradigm that goes beyond the neutral point of sustainability and catalyse a shift towards regenerative development dedicated to value-adding (Gibbons et al., 2018). The main attribute of regenerative design is the ability not only to ensure and maintain but increase capacities and well-being. Regenerative design strategies operate between social and biophysical components, fostering principles of self-organisation, resilience, biodiversity, biophilia, adaptive capacity, multi-scale networks and stakeholder engagement towards co-creation (Gibbons et al., 2018). Consequently, it accelerates the emergence of the socio-economic component in form of productive communities and circularity.

The regenerative design strategies operationalize and build upon the main principles of important charters and agreements (2030 Agenda for Sustainable Development – SDG 11, New Urban Agenda, Paris Agreement, European Commission’s Green Deal, New Leipzig Charter). Not only ecological and biophysical components but also the social components of regenerative design, such as self-organisation, multi-scale networks, stakeholder engagement and co-creation, are envisioned in these charters and agreements. The New Leipzig Charter promotes place-based, multi-level and multi-stakeholder approach and points out that a good urban governance, both governmental and non-governmental, is required in order to lead the transformation towards just, green and productive societies (The New Leipzig Charter, 2020). New Urban Agenda in particular addresses the question of collective commitment to enhance integrated and sustainable development. Co-commitment as multi-stakeholder commitment to co-creation and urban governance - not only as a reactive participation, but as a proactive and responsible approach - is critical for effective planning, implementation and monitoring of changes in urban environment. Co-commitment is a multi-level and continuous engagement to unlock the potential of institutions and individuals and build effective urban governance structures (The New Urban Agenda Illustrated, 2020). It is foreseen as a complementary tactic that ensures integrated and just socio-spatial development. Furthermore, it emphasises the pursuit of the common good that has been strongly addressed in the New Leipzig Charter – titled “The transformative power of cities for the common good”. The questions of common good, common interest and, ultimately, common spaces in cities are especially important in participatory (re)design processes. Furthermore, common spaces are recognised as socio-spatial elements in cities that are enabling critical thinking and creative testing of the solutions, and therefore enabling transformative actions towards regenerative cities and societies.

## 2. Common spaces as negotiation spaces

With a reference to the contemporary urban practices and policies previously mentioned, the paper addresses the problems of post-socialist urban heritage, namely post-war mass housing. Devaluation and deterioration are common attributes of the mass housing areas in Europe and beyond. The dialectic between preservation of this urban heritage and sustainable urban development and governance is at the core of urban heritage regeneration. As recognized at the World Urban Forum, 2020, “the common ground between often divergent approaches must be identified and tools developed to strengthen synergies between the two.”

The research identifies the important role of the common spaces in mass housing revitalisation - as *negotiation spaces*. The common spaces, that are the most neglected, underused and deteriorated components of post-war mass housing areas, at the same time represent important legacy of the post-socialist urban heritage, but also important biophysical components of cities and their green infrastructure. As such, they have the capacity to (1) address climate change and environmental issues in cities, (2) enhance social cohesion and proactive participation in existing residential neighbourhoods and (3) preserve the existing urban heritage and safeguard its values. Furthermore, (re)generation of the common spaces in these neighbourhoods would be a value-adding for the quality of the urban environment and the quality of life of the inhabitants.



Figure 2. New Belgrade common spaces (Photography © Zorana Jovic, Student Workshop, Belgrade, 2020).

The study proposes reaffirmation, reuse and reactivation of the common spaces in the post-war mass housing areas through regenerative design and co-commitment of the stakeholders. Stavros Stavrides, a researcher, teacher and activists, especially dedicated to the questions of commons, sees them as an open system shaped by people who believe themselves to be equally responsible, both in maintaining and repeatedly questioning them (Stavrides, 2018). Therefore, the importance of proactive participation of people and commitment to their living environment has been underlined in his studies on commons. The increasing discussions on the questions of commons, both in academia and urban practice, have been influenced by the economist and Nobel Prize winner Elinor Ostrom. Through an example of natural resources, such as forests, she is showing how they can be effectively managed by "commons-like organisations that allow a self-managed community of users equal access, without private ownership or state control" (Bingharm-Hall, 2016). Ostrom underlines the importance of the polycentric governance beyond the dichotomous world of "the market" and "the state" (Ostrom, 1990). The common spaces are a perfect platform for testing these concepts and reinventing the public-private relations in urban environment, which is especially important in case of mass housing in post-socialist regions. Furthermore, the common spaces and processes of commoning are highlighting the importance of the right to the city as the right of the citizen as an urban dweller (*citadin*) and user of multiple services (Lefebvre, 1995), by offering an alternative to the privatization of land and acting in the interests of the common good. What is important to stress here is that the publicness of the common spaces can be as high as of the conventional public spaces. The common spaces are inviting and open to be used by non-residents as well. They can be re-generated and co-created through participatory process, and are always in the making, "emerging as people collectively develop their relations" (Stavrides, 2018).

The creation of urban commons, or, as Karin Bradley defines it, “open-source urbanism”, is applying “spatial tactics and architectural prototypes that can be copied, multiplied and developed by a multitude of users in different locales” (Bradley, 2015). Nevertheless, the open-source tactics overlaid with local specificities generate always unique results. Therefore, the place-based approach has an experimental character, and the tactics and methods are iteratively refined within it. With an aim to contribute to the development of these tactics and methods, the study develops and tests an education-exploration prototype as a platform for critical thinking and creative testing. Taking New Belgrade Blocks as the case study, the research applies participatory methods for co-assessment, co-design and co-validation of proposals, including residents and other stakeholders in the process of research. The following chapter will show the research process, tools and methods that were applied in the study on New Belgrade common spaces, offering methodological guidance that could be applied on similar cases.

### **3. The case of New Belgrade common spaces**

New Belgrade is one of the largest modernist post-war mass housing area, with around 250.000 inhabitants today. It represents a very important case study within the larger phenomenon of the post-socialist urban heritage, and it is especially relevant for the studies on commons. The concepts of commoning are not new for New Belgrade. Actually, the whole New Belgrade was planned and built as a socially owned city, where housing was a common good. The ownership situation was very important for realisation of the mass housing project. The status of being socially owned has blurred the line between public and private spaces within the blocks, which was further supported by common spaces within the blocks, for example local community centres and urban common spaces. However, within the so called post-socialist transformation and housing privatisation at the end of the 20<sup>th</sup> century, the questions about the opportunities of collective and cooperative appropriation of space remain largely unresolved (Blagojevic, 2014). The common spaces of New Belgrade Blocks, although neglected, underused or misused over the time, represent valuable spatial resource and have great capacity to accelerate the revitalisation process of mass housing. Therefore, the thematic focus of the study was reaffirmation, reuse and reactivation of the common spaces of New Belgrade through regenerative and participatory design. The study was realised in a multi-stage research process over the period of 3 years, establishing a link between research and teaching, and testing different exploratory and participatory methods of research. The overview of the main aspects of research methodology will be presented in the following sections.

#### **3.1. Education-exploration prototype**

The research process profiled an education-exploration prototype, as an important approach in investigating built environment, and specifically residential neighbourhoods. Through the multiple stages, an extra-curricular learning model has been developed, applied and refined, as both teaching and research tool. In an iterative process, the researcher both studied and taught the possibilities of participatory and regenerative design for revitalization of New Belgrade mass housing. The education-exploration model acted as an extended learning environment and a reflective arena, and the common spaces acted as open laboratories for testing the innovative forms of education, exploration, problem-solving and co-creation.

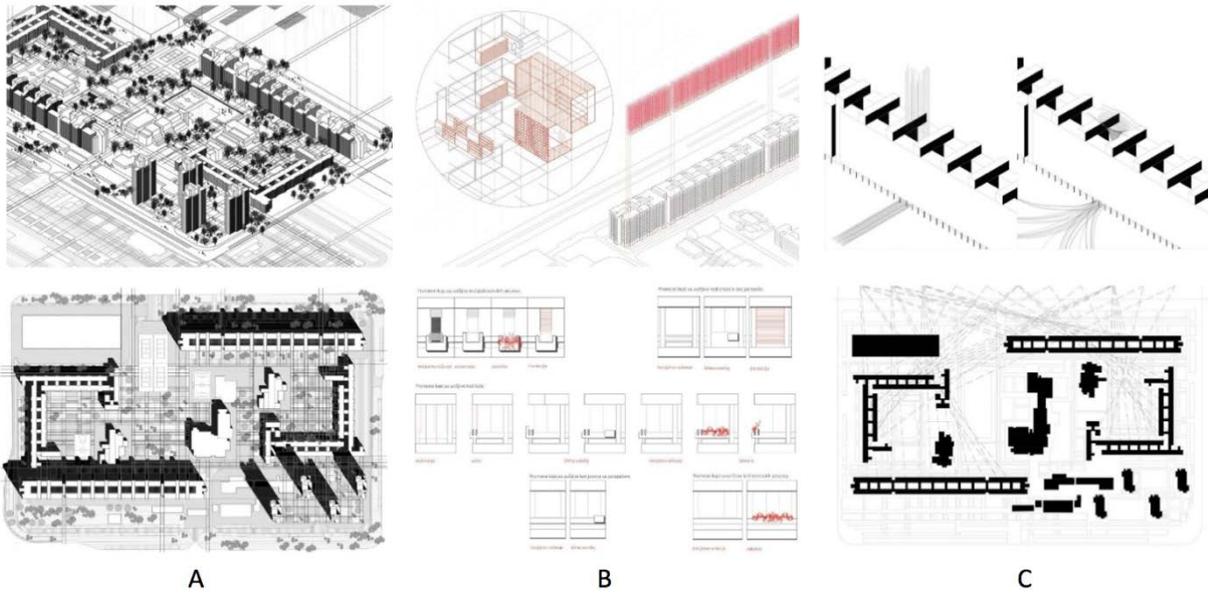


Figure 3. Results of the second stage of the education-exploration model: Transformation concepts for Block 23, New Belgrade. (Illustrations © (A) A. Maksimovic, N. Djuric, K. Dimitrijevic, M. Bozovic, (B) Z. Stanojevic, A. Stojanovic, N. Lalic, O. Miskovic, (C) T. Ciric, M. Ristic, J. Ristic, J. Korolja, Student Workshop, Belgrade, 2018).

The specific purpose of this education-exploration model is to improve the quality of learning experience for students. The place-based, exploratory approach is enriching their learning process, and enabling their social engagement in creating green, inclusive and aesthetic environment. It reflects on Bauhaus legacy in promoting multi-disciplinary, socially engaged and artistic-exploratory education model by offering a platform for critical thinking and creative testing. The education-exploration model enabled development and application of different participatory tactics and methods for assessment and co-creation of the urban commons.

### 3.2. Research process, methods and tactics

In the first stage of research a participatory tool for exploration and assessment of New Belgrade common spaces was developed and applied. Exploratory talks, in a form of semi-structured interviews, were used to collect testimonies of residents, informing the method of co-assessment (co-diagnosis).

The first stage had 3 steps:

- defining thematic framework and research tactics
- conducting empirical research
- comparative analysis

It was conducted within a seminar with Master students at the University of Belgrade – Faculty of Architecture. The researcher trained the students on how to conduct the interviews and how to identify the interviewees, designed, and then, together with students, refined the questions. The students conducted 48 on-site interviews, organised and represented the collected material. The researcher correlated and further analysed the outcomes afterwards using narrative and thematic content analysis. Some of the themes were: social cohesion, community centres, facilities, ownership, taking care, public and green spaces, aesthetics and living histories.

All the aspects highlighted the importance of:

- the common spaces as key values in spatial terms enabling social contact and feelings of freedom and
- the sense of community that could be main driver of change.

The second stage, with a reference to the previous research, was focusing on identification of common spaces of New Belgrade Blocks, investigation on their typology and form, eventually defining concepts for interventions in selected spaces. It was realised within an extended-model workshop with Bachelor and Master students at the University of Belgrade – Faculty of Architecture through a guided research-by-design and design-by-research process.

The second stage had 4 steps:

- observation and photo-documentation (photo-walk through the blocks)
- spatial analysis: mapping the key relations in space, analysing and reinterpreting the observed
- highlighting the important elements and defining new ones that could improve the current condition and relations
- design and representation

The results of the three groups that have studied the case of Block 23 will be elaborated here. The first group identified the landscape of open common spaces between the residential buildings as important for both preservation and intervention. Instead of transforming the urban morphology, this group proposed reuse of the existing micro-points in the landscape, their reaffirmation and regeneration. The second group was focusing on the facade of a linear residential building, aiming to develop an add on structure that would integrate new functions. The third group identified atriums as a typical spatial element that is emerging between the two residential tracts of the buildings. Their intervention was addressing the ambient characteristics of the atriums using water, light and reflection, and improving the quality of both open common spaces (addressing atrium's parterre - horizontally) and quality of dwellings (addressing the atrium as a void - vertically). (See *Figure 3*.)

The third stage was focusing not only on the biophysical aspects of the common spaces, but also their program and social component in enabling self-organisation, community engagement and co-creation. It had a character of an urban experiment, and besides students, it was again involving residents of the two blocks, Block 23 and Block 70a. At this stage, participatory mapping, photo-survey and programming of the common spaces were applied as research and design methods (See *Figure 4*.). The study was promoting direct participation of the local community in co-design process with the students. Nevertheless, it was concluded that comprehending and managing change in these neighbourhoods requires community-driven actions, however, including all stakeholders in the process through co-commitment. Therefore, the need and possibilities for collaborative governance have been studied in the next stage, which will be presented in the following section.

### 3.3. Co-commitment and collaborative governance

The study on collaborative governance tested a stakeholder workshop format as a multi-level and multi-stakeholder communication tool. The aim of this research method was to unlock the potential of institutions and individuals for co-creating effective urban governance structures and their commitment to integrated and just socio-spatial development.

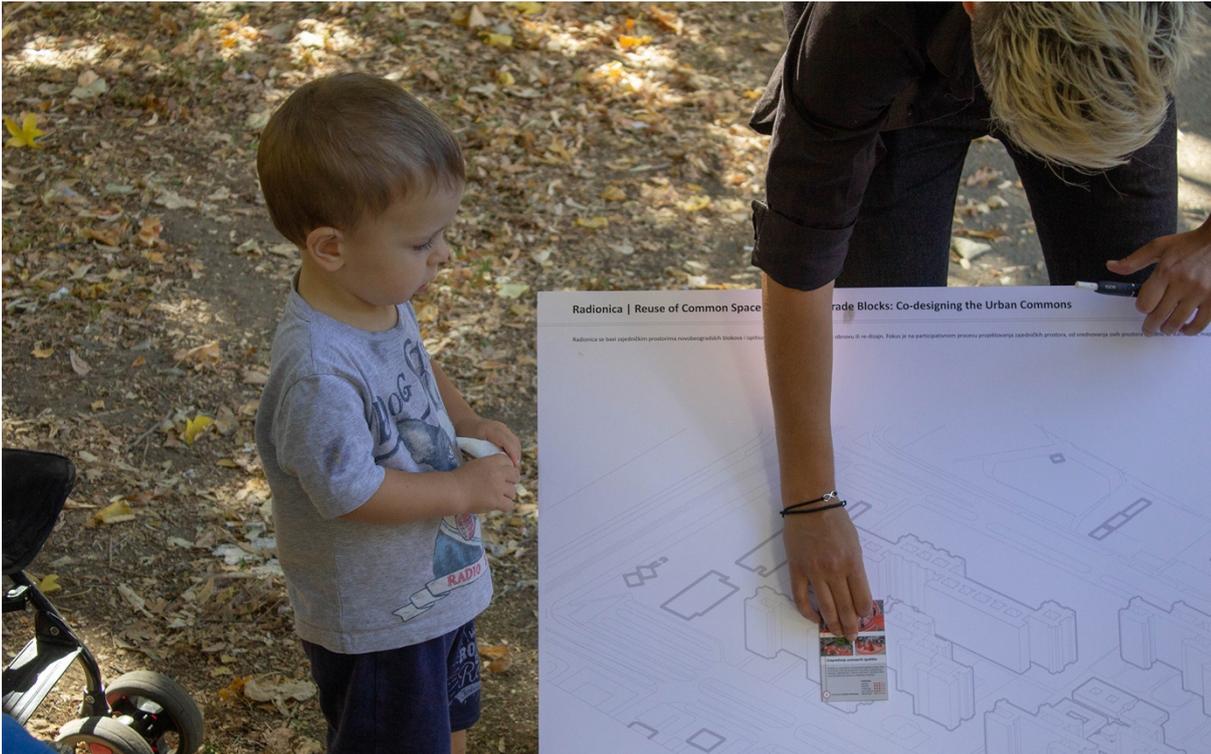


Figure 4. Participatory mapping, New Belgrade (Photography © Ivana Despotovic, Student Workshop, Belgrade, 2020).

It was organised as an open session with representatives of different expert-groups, such as heritage experts, policy makers, environmental experts, local authorities, urbanists, activists, citizens associations, residents and academia representatives. The open session enabled exchange of opinions and views through a guided and interactive discussion. The question of collaborative urban governance in mass housing revitalization and its implementation potential was addressed in relation to the existing national and international policies, planning frameworks, ownership situation and maintenance regulations. Therefore, it acted as a co-validation of the previous studies and reality check.

The following conclusions have been drawn:

- a good urban governance, both governmental and non-governmental, is required in order to ensure integrated and just development,
- multidisciplinary approach, inter-sectoral and inter-institutional communication is needed in order to ensure a balance between environmental, economical and social aspects,
- tools for empowering civil sector and their involvement in planning, implementing, using and maintaining urban commons are urgent,
- common spaces have a key role in facilitating innovative co-creation models,
- guidance for decision makers to take informed decisions about urban heritage and case study specificities are needed,
- guidance for citizens associations about possibilities and mechanisms for proactive participation in their neighbourhood are needed,
- guidance about rights, responsibilities and roles of all stakeholders is needed,
- pilot projects that would test innovative communication, planning and governance systems are needed.

## 4. Outlook

The research model presented in this paper has a potential for multi-level impact: knowledge production and knowledge sharing, awareness-raising and social engagement of stakeholders.

The approach safeguards the values of common spaces, that are important part of the modernist legacy, and highlights their importance in ensuring vitality of residential neighbourhoods and co-creating liveable environments. It promotes the aesthetics of vibrant and creative urban spaces, that are enabling open and diverse dialogue in cities.

Furthermore, it underlines the capacity of common spaces of not only enhancing social aspects and preserving urban heritage values, but also addressing environmental issues in cities. The interventions that would be based on regenerative design, would ensure both maintenance of the existing common spaces in the neighbourhoods, as well as integration of new nature-based solutions. Moreover, it would be a value-adding for the quality of the urban environment and the quality of life of the inhabitants.

The approach is advocating place-based research and tailored solutions, but also open-source research tactics and adaptable methodology. The presented model could be adapted to other cases and sites across Europe and beyond, contributing to development of new models of co-creation. As a methodological guidance it enables elastic thematic framework, which makes it reusable and applicable even to different topics or fields of education and exploration.

## ACKNOWLEDGEMENT

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# Urban Housing in the Countryside: Community Building and Real Estate Policies

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## ABSTRACT

*Today, Romania is characterised by a demographic decline in the traditional village as the active rural population chooses to live in the nearby urban center or to migrate in Western Europe. At the same time, the rural areas located near the big cities became attractive for many families living in these cities because of the affordability of land and the vicinity of nature. Some move to residential developments built by investors, while others choose to build their new homes in metropolitan villages. In the latter case, the needs and interests of the newcomers are different from those of the local population. As a case study, in a shrinking village near Cluj-Napoca (a secondary city in Romania), an investor is building a city in miniature on the principles of New Urbanism. From a real estate point of view, the project is a success as all the houses are sold. This paper intends to analyse how New Urbanism principles apply to this project and what is its novelty, but also to discover the strategies the investors have for integrating an urban residential development in a typical Romanian village.*

## KEYWORDS

*Rurban housing, new urbanism, community building*



Figure 1. Example of house in Colina Nouă (Source: personal archive)

## 1. Introduction

The influence of large cities on the surrounding territory is manifested in several ways. On one hand, they are a magnet in terms of opportunities and jobs available, but on the other hand, the density thus created leads to increased prices of available housing in the city and determines a migration of a part of the population to the margins.

In this paper we will refer to a type of housing situated at the interference between the urban and the rural and we will analyse a residential development (Colina Nouă) build on new urbanist principles, in a rural environment in Cluj county, as its authors claim.

## 2. The post-socialist heritage

Until the end of the twentieth century, the Romanian society was predominantly rural. The communist regime brought urbanisation, industrialisation and construction of collective housing for workers.

For the functioning of socialist factories, a new urban working class appeared and consisted of people brought from the village, organised and housed in dormitory neighbourhoods built on the outskirts of cities (Petrovici, 2012). This process created a forced rupture between the rural and the urban environment, and the former peasants became worker peasants (*muncitori gospodari*) (Mihailescu, 2011), as they kept their relations with the countryside.

Following the change of the political regime in 1989, a process of deindustrialization followed, inflation rised and workers were marginalized because of a high unemployment rate. Some of them returned to the country, but the population

remained constant in the city because they were replaced by an educated middle class, who settled in the city (Petrovici, 2012).

Between 1992-2004, Cluj was considered the ultranationalist capital of Romania, as a result of the policy promoted by the local administration, but after the change of administration and the EU accession, urban development in Cluj experienced a real boom (Vais, 2009), which also modeled the surrounding territory of the city, including the villages nearby.

With the economic growth of Romania, Cluj became an important secondary city and the financial capital of Transylvania, due to the high percentage of an educated workforce (Petrovici, 2012).

In Cluj, as in many post-socialist cities, urban sprawl became a challenge, as a result of an incomplete transition from a socialist system toward a liberal one. The attraction for an individual lifestyle of the educated middle-class, affordable prices at the periphery and the increasing use of personal cars determined the creation of new residential areas outside the build-up area inherited from the socialist era. The legislative gaps of socialist plans permitted the easy take over of open and green areas and their transformation into buildable land. (Sandu&Groza, 2017).

### 3. Methodology

The case study chosen for this article is a residential real estate development planned and built on the principles of New Urbanism, as its authors claim. The project Colina Nouă is built in a rural area, in the village of Băbuțiu, near the city of Cluj-Napoca.

Being an atypical case study for Romania, the concepts on which the study is based will be presented: the definition and the construction of a community, the principles of New Urbanism, as well as the criticisms brought to this movement.

Secondly, the marketing strategy of the project was studied, based on the descriptive visual materials available (photos, renderings, videos, interviews with actors involved). In addition, some guided interviews were made with one of the developers, one of the architects and with the landscape designer of the project. The purpose was to gather as many points of view as possible about the design of the project, the planning process and to identify the potential conflicts or correlations and mutual enhancements. Because the families who bought their houses here have not yet moved, the interviews with them will be organised at a later stage in the research.

The research question chosen is: In the case of the Colina Nouă project, what are the borrowed elements specific to New Urbanism, and what new elements did it bring? In order to answer this question, I will analyse the project based on a grid of new urbanist specific elements.

### 4. Concepts

#### 4.1. New Urbanism

New Urbanism is a movement that emerged in the United States in the 1980s, as a critique of the modernist planning principles. According its basic ideas, a community can be created as a result of a certain way of planning the space, which aims to create an identity of place, a sense of community and environmental sustainability. Appeared in a postmodern context, New Urbanism presents pre modernity in an idyllic way and makes direct reference to the ideological and aesthetic principles of postmodernism



(the importance of historical traditions, the focus on the local and the private, nostalgia for the past and care for the environment) (Łucka, 2018, p.18).

The idea of urban village and walkable urbanism, as opposed to drivable suburbanism (Leinberger, 2008) outlines the general concept of New Urbanism: a compact, sustainable neighbourhood where people can walk or bike without using a car.

The principles of New Urbanism refer to three main categories: urban design principles, sustainability, community and social diversity.

From the first category we mention: functional diversity; an interconnected network of streets organized around a community center; mix of land uses; variety of housing types and densities; pedestrian-oriented design with focus on civic spaces and amenities; compact urban form (Steuteville, 1998); focus on safety measures; architecture and landscape directly related to the local climate, topography and history of the place; the presence of parks and community gardens.

Regarding the second category, the purpose of New Urbanism is: ensuring a respect for nature and agricultural land; the completion of restructurable urban areas to avoid development on the outskirts; ensuring transport alternatives; ensuring pedestrian access to all places intended for daily activities.

Related to community and social diversity, the movement aims to: create a balance between work and housing, by avoiding the emergence of dormitory neighbourhoods; ensuring access to affordable housing and creating a variety of housing.

These criteria were established in a certain social, demographic suburban development in the USA. Ever since, the movement has undergone certain changes or adaptations in the sense that there has been a focus especially on environmental or social issues, as well as an interest in integrating new urbanist principles into sustainability rating systems, development policies and regulations (Garde, 2020, p. 456). The movement is no longer an atypical case, and the future challenges concern climate change, technological advancement, remote work, digitization and restructuring of the global economy, but also the acceleration of e-commerce (Garde, 2019).

Theoretically, all these ideas are very good, but their implementation also brought up numerous discussions and problems. Most of them question the lack of social diversity; the creation of enclaves or closed communities; solving transport alternatives only within the developments; resemblance to urban dispersion despite declarative criticism; lack of housing affordability; creating an overly controlled environment.

The criticisms brought up by researchers address several issues:

The architect Sonia Hirt believes that New Urbanism can be associated only superficially with the postmodern paradigm because new urbanist ideas can be implemented only with the help of strict regulation, in the modernist way of planning. From her point of view, New Urbanism, through its nostalgic vision of the past, makes a selective interpretation of history, by ignoring the problems of social exclusion and is rebuilding the past from the point of view of a superior social class (Hirt, 2009).

A.J. Saab points out that New Urbanism involves the creation of a very precisely controlled environment and that there is a paradox between the declarative critique of modernism and the specific way of regulating these developments -limiting the size of buildings, strict description of architectural details and materials used(Saab, 2007,p.195). J.L Grant compares new urbanist developments to gated communities and believes they are for the "successful people" who have the privilege of choosing what kind of place they want to live in (Grant, 2007).

The ambiguity of researching the relationship between urban design and community building is also addressed by S. Ganapati who shows that despite some advantages, researches made on this topic demonstrate the elitist nature of new urbanist projects, which can lead to the creation of enclaves, rather than creating communities (Łucka, 2018,p.18).

#### 4.2. Community and community building

The idea of community is becoming popular in many contexts of urban or rural planning.

Many sociologists (Putnam, Etzioni) talk about the effects generated by the individualism that characterizes modern societies and about the erosion of community ties, aspects that have led to the disappearance of communities and community aspects of life (Łucka, 2018,p.18).

The concern for recreating the contexts that favor the development of communities is found in various forms: in co-housing projects that are becoming increasingly popular, in the New Urbanism movement, in strategies that attract new residents in less populated areas.

But what does community mean and more importantly: how can it be created? Are there also no downsides of community living?

The idea of community has a multitude of meanings: from a clearly geographically delimited physical place, where people who meet their living needs and social interaction (neighbourhoods, small towns) live together to groups of people whose interaction is not based on physical proximity, but on common interests and values. (Robinson & Green, 2010, p. 20).

Premodern cities emerged out of necessity and developed spontaneously and organically, not because they wanted to be charming or ecologically responsible, but because that was the way cities were build then. That kind of community life, which is so appreciated now, appeared as a result of several factors: the lack of financial resources and cars led to the need for social gatherings, recreation and entertainment (Łucka, 2018,p.18).

A sustainable community is characterised by its efforts of maintaining and improving the economic, environmental and social characteristics of an area in order to provide its members with a healthy, productive lifestyle (Smith,1998,p.83).

Community-oriented self-organised housing has gained importance in times of marked social change or economic crisis (Droste,2015,p.81). We are currently in such a situation and it is the ideal time to pay special attention to new phenomena related to housing.

In Romania in general and in the metropolitan area of Cluj in particular, residential real estate projects have never had a component related to the creation of a community. The main goal of investors is to make a profit, and for this, in the best case they use a marketing strategy that promotes certain features of projects that are more related to design, location or functionality.

Today, the need for social interaction and belonging to a community has become more pronounced due to the pandemic context, and the promotion of a project (such as Colina Nouă) whose concept depends on creating a community is in line with new trends.

## 5. Case study

### 5.1. The context of periurban development in Cluj and the real estate context

The metropolitan area of Cluj-Napoca contains 19 administrative units with 100 settlements, inhabited by 415,000 inhabitants (according to the last census in 2011). Being an important socio-economic area, it has undergone an impressive urbanisation in recent years, especially on the outskirts of the city. 90% of the total population growth took place in the first ring of the metropolitan area. An increase of the built-up area was found from 11.13% in 2000 to 20.07% in 2019. (Dolean et al., 2020, pp.4-6).

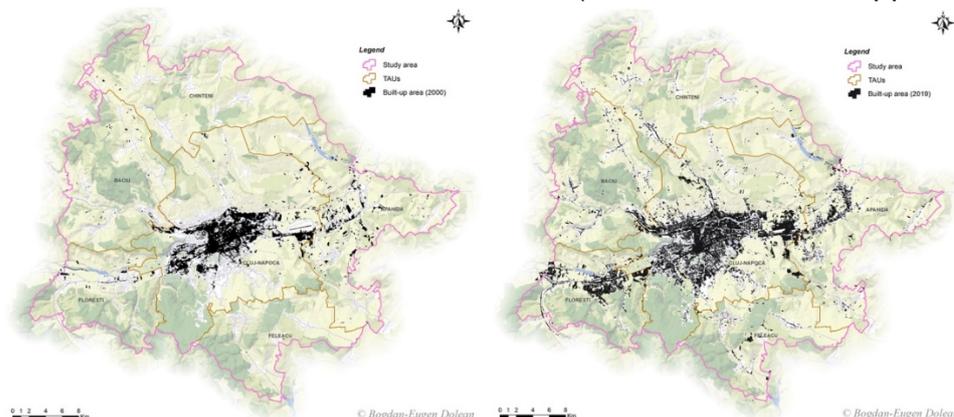


Figure 2. Evolution of the built-up area : 2000 vs. 2019 (Source: Dolean et al., 2020)

Following a recent market study, it was found that in Cluj County, in the first quarter of 2021, there was an increased interest in houses (+ 30% compared to the same period of 2020) and land (+ 150%), while for apartments was identified low interest (-70%). This evolution is different from the one in Cluj-Napoca, where the interest for the purchase of houses (-10%) and for apartments (-30%) decreased compared to the level of 2020, while the only demand that increased was the one for land (+ 30% compared to 2021) (analizeimobiliare).

We thus deduce that there is an increased attraction for areas outside the city of Cluj-Napoca.

The proposed case study is Băbuțiu village, the second village outside the metropolitan area ring, in the northern part, where a development (Colina Nouă) is being built based on new urbanist principles. In this village, as in many other villages in Romania, there is an ageing population (181 people at the last census), and the existing built environment is outdated.

### 5.2. About Colina Nouă - general aspects

Colina Nouă is a privately funded residential development. At first, a tree plantation and a farm were created. The purpose was to produce organic fresh vegetables to be distributed to the people living in Cluj-Napoca, and in the future, they will become the main source of food for the inhabitants who will move here.

The project was conceived in several stages. During the first stage, 28 houses were built in five different housing typologies. In the future, the project team aims both to diversify the urban structure and the housing typologies. That is, “we are planning new various typologies from tiny houses, to townhouses, to individual houses, so there will be many more possibilities to choose from, depending on the lifestyle, activities, if

there there will be some who will work from home or others who will still commute to Cluj because they are forced to.” (A. Horhat, interview, July 2, 2021)

The intention is to extend this first phase of the project in order to create a community with 2500-3000 inhabitants who will benefit from educational, medical, commercial and recreational facilities.

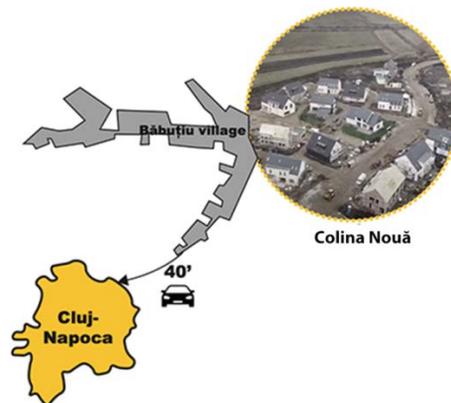


Figure 3. Localisation of Colina Nouă Project (Source: personal archive)

### 5.3. About the planning and design process from the architects' perspective

The size of the project and the continuous character of the planning, determined a complex way of working. Every week work meetings are organized between various specialists: urban strategists, architects, landscape designer, brand strategist, builder, developer, etc.

The project is approached on several levels and the team is working on different scales: "from panorama to miniature, from macro to micro" (A. Horhat, interview, July 2, 2021). There is an approach of the project at the masterplan level, at the architecture level, landscape and detail level.

"The rural context has served as a strong source of inspiration for us, as architects. Out of the desire to imprint this feeling of Transylvanian visual identity, we took over certain elements of the traditional architecture specific to the place and to the Cluj Hills (...) but reinterpreted and adapted in a contemporary and modern context." (Bănuț, 2021)

The construction technologies used followed passive, energy-efficient house principles.

### 5.4. The relationship with the landscape

From the landscape point of view, at macro level, a mapping of the area has been made on a larger scale, in order to consider the existing context, landscape elements, topography, cultural landscape, panoramic points (village church tower, nearby oak forest, etc.). The planning team established the infrastructure based on scenarios about the way future users will move around the neighbourhood, about the perspectives encountered on the way home or during leisure activities. At a micro level, the emphasis is on the privacy side of the project and the way the houses relate to each other, how the necessary privacy can be obtained, what can be seen from the house to the street and vice versa. (A. Horhat, interview, July 2, 2021)

One of the methods of the landscape planning was to map the perspectives that can be seen from each room of each house. Based on these observations, the positions and species of certain trees were established, so that the character and function of the room are related to the external landscape elements.



Buyers are encouraged to get involved in customizing their project as long as certain rules are followed.

From a residents point of view, the landscape is an attractive element, highlighted in relation to the project. But the landscape in its authentic form disappears as the project develops, because the new constructions are consuming former agricultural land.

### **5.5. Marketing / brand strategy / real-estate policy**

The project is promoted through a website which describes details about the housing typology, the public spaces created, the construction techniques, but also the general concept of the project.

The tools used for promoting the project are images (sketches, renderings, architectural plans, site photos) and videos. The videos aim to present the vision of the project from all the actors involved in the project.

The declared principles on which this project is based on are: *green houses with integrated landscape, organic food, international school, a protected environment for children, water, air, clean soil, places arranged for leisure, designed to work from home, a style of healthy living, design and architecture everywhere you look, neighbours with similar sets of values* (colinanoua.ro).

The motto of the project is: "the perfect place to raise our children", as the main target among buyers are families with children. The focus on children and on a friendly environment for them is obvious from the emphasis placed on the development of the educational center and in the promotional materials.

From the very beginning, the creation of a marketing strategy was considered, within which 30 criteria for the buyer's profile were established. Most of the families that have bought houses here until now are generally young families with very young children or about to have children, who have flexible working hours or couples approaching retirement age (L. Baltă, interview, October 30, 2020)

In addition, there is another way to attract new residents, adopted by those involved in the design and the implementation of this project: "We started to apply a kind of sniper-type strategy, that is, we look at our contexts and see who falls into this typology, we give him a phone call, take him out to dinner and start talking." (Pop, 2020)

The intention of attracting a certain type of residents contradicts the New Urbanism principle of ensuring social diversity. Any other social or family categories are automatically excluded, which creates the risk of developing a gated community.

### **5.6. Community building**

The general idea of the real estate discourse and of the marketing strategy is the creation of a community.

The typology of buyers sought is also outlined based on the internal regulations created to maintain the principles of the project, which will appear as real obligations in the land book of each home. There will also be a committee to monitor any subsequent changes or constructions.

This regulation is specific to new urbanist developments, that aim to regulate the way of life of the members of the community, but also to architecturally and urbanistically limit the development. Given that homeowners accept these conditions means they share common values, a basic condition in forming a community.

A repetitive theme in the promotional videos of the project or in the interviews the actors involved in the project gave, concerns the lack of fences in the

neighbourhood. Although initially agreed by everyone, this idea became a subject of conflict and negotiation between planners and future residents.

"We all, on the design team wanted no fences, we wanted an experiment in the true sense of the word, to be an open community." (A. Horhat, interview, July 2, 2021)

But as the project advanced, concerns and complaints about the lack of fences appeared. The generally accepted compromise was that fences 60 cm high should be placed in the hedge so that they would not be perceived (A. Horhat, interview, July 2, 2021).

This first conflict demonstrates that a regulation designed for the good coexistence of a community does not exactly fit the way of thinking of its members.

"Although a group may intend to live together as neighbours, their goal is to do so as private owners of separate properties" (Hamiduddin&Gallent N.,2016,p.368).

Although made at the initiative of a private developer, the pattern of the community members is similar to groups appearing in other societies who develop co-housing projects: educated, high-income and above-average adults with a young or information family. Some researchers have identified *baugruppen* as members of the middle class, who, through the projects they develop, gentrify the areas in which they develop their projects (Droste, 2015,p.81). The future residents self-selected themselves by accepting the principles of neighbourhood design, but also the conditions and rules of coexistence provided in the Internal Regulations. The prices of the houses in Colina Nouă are comparable to those in the city or maybe even more advantageous, but they are much above the average prices in the area. Although they find justification in the construction technology and the developed infrastructure, they address to an exclusive public.

A new community is created, with a social, financial and educational level different from that of the community that already exists in the village. In the future, after the first families move, it will be interesting to see how the two communities interact and relate.



Figure 4. Example of house in the existing village (Source: personal archive)

The project team is working on creating nodes between the existing community and the new one at the intersection / access points in the new neighbourhood. Some



of the scenarios imagined for these nodes are: the village's supermarket, a cooperative in which local products can be sold, an info point. Currently, the brand strategy team makes a list of all local producers in the area to later introduce it in an application that will be available to the new residents. There is also the prospect of creating jobs for locals, as the project grows and as public functions will appear in the area (restaurant, cafe) and a new workforce will be needed (A. Horhat, interview, July 2, 2021). Currently, there are several locals who are employed on the farm or on site.

All these ideas and intentions suggest an integration by subordination of the existing community.

## 6. Conclusions

In Romania, a project developed on the principles of New Urbanism is atypical firstly because it has no precedent, and secondly because it is implemented in the immediate vicinity of an existing village. The first inhabitants are about to move in, and the first ideas about the functioning of community will take shape. So far, the policy of attracting new residents has worked in the sense that all the houses built in the first phase were sold so far and a waiting list for the next wishers is created. Some of the buyers were attracted by the project, not necessarily by the place when they chose to relocate.

By **overlapping** the principles of New Urbanism over the planning and implementation of the project Colina Nouă, we can deduce that the project respects some of the principles related to the design of spaces: urban planning takes into account a sense of security inside the neighbourhood, through the layout of houses in relation to the street; there is a network of interconnected streets connecting the houses to a small community center; the proposed architecture and landscape are directly related to the local climate and topography, but there is a consistent difference between the scale of the proposed housing in this neighbourhood and the housing in the existing village. The houses in the neighbourhood are obviously built at urban standards both in terms of materials and technologies used and in terms of utilities and facilities provided. The history of the place is tangentially brought into question by the use of architectural elements specific to the area, but the discrepancy between the modesty of the houses in the village and the modernity of the houses in the new neighbourhood is more than obvious. Also, the functional diversity is missing in this phase of the project because apart from housing, there is only an educational center, a gazebo and a small neighbourhood center.

Regarding sustainability and proximity to nature, the project is privileged due to the rural and natural context in which it is located. The existence and the functioning of the farm and nursery support a sustainable food system for the new community and highlight the agricultural potential of the area. But the very existence of the project and especially the development plans from the future, threatens the disappearance of the natural landscape and the character of the former agricultural land. The concern for environmentally friendly solutions is reflected in the principles of passive, energy-efficient houses used in the design of buildings, as well as in the infrastructure prepared for electric cars. Public spaces are also designed to encourage walking or cycling inside the neighbourhood. Although inside the neighbourhood we can talk about sustainability, car necessity will not disappear soon, especially because at this time there are no facilities and services nearby. The impact that travelling the city will have on the environment risks to diminish the ecological measures taken at the neighbourhood level.

Concerning the third category (creation of communities and social diversity), we can say that due to the project promotion strategy, the aim is to attract a certain type of buyers, whose predetermined profile discourages the creation of social diversity. The intention to diversify the socio-economic categories of the future population, will possibly ensure diversity in the small circle of the new community without the existing population being truly included. At the moment, the housing prices address a privileged class of residents. The variety of housing typologies is reflected in their dimensions (slightly variable) and implicitly in prices. The balance between work and housing is inexistent, because apart from working remotely, there are no job offers in the neighbourhood or in its immediate vicinity, suitable for new residents. Future development plans involve the functional development of the area, with the emergence of new spaces and services, but the jobs created at that time will address rather a less educated social category, probably residents of the existing village. This would increase the integration by subordination of the existing population.

Despite the fact that the authors claim the creation of a new urbanist development, several inconsistencies can be observed from this phase: lack of functional and social diversity, the risk of creating a gated community, the car dependence, the lack of services nearby and the degradation of the natural landscape.

The novelty of the project consists in the rural location and the focus on families with children.

First, building a development in an existing rural context is atypical for New Urbanism, and settling next to an existing community whose inhabitants are obviously from another social category risks social segregation. On the other hand, time will tell what will be the impact on the community and the built environment, if the village will become more interesting in the future, if there will be economic progress among the inhabitants or if house and land prices in the area will increase over time.

The second specific element of this project is the emphasis on raising children. This is evident through promotional materials and the construction of a private international educational center. The private and international character of the center may attract strangers, but it is also a way of filtering the economic level of those who will enroll their children here. Children in the village are thus automatically excluded.

The fact that this project appeared in Cluj county and not elsewhere in Romania is an important detail, because it confirms the economic and demographic growth of this area in recent years. Such an atypical project could be successful only near an important urban center, where there is a high economic, social and educational level of the population, as well as an opening for experimental projects.

The attraction for this project increased at a time when the general interest in rural areas also increased. The four main points of attraction are: the rural context, the idea of a new community, modern construction technology and the novelty of the project.

Continuing this study in the future will offer the opportunity to discover if or how gentrification will happen and if this type of housing will inspire other future developments in Romania, or if it will remain unique.

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# Urban Planning Concepts for the Renovation of Microdistricts in the 1950s-70s: the Result of a Workshop in Irkutsk

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## ABSTRACT

*The strategies of development of microdistricts of 1950-70 considered in the article in the conditions of changing socio-spatial priorities of society and modern ideas of their transformation based on the projects of a three-week project seminar in Irkutsk. The method of parallel work of project groups with fundamentally different structures of microdistricts makes it possible to generalize design models, urban planning approaches to the transformation of microdistricts of a large city in the context of modern urban planning assessments and experience in the renovation of mass residential buildings. The methodological unity of the project approach began with a discussion on the topic, the concept of a place, the interpretation of its uniqueness, in which the physical, symbolic, typological, morphological and material context differ. Despite the differences between microdistricts, the projects used common standards of integrated development, the effectiveness of which was evaluated. With the generalization of urban planning solutions in projects taking into account the diversity of microdistricts, the principles of spatial planning adaptation of the microdistricts development to the prospective requirements and interests of the population are proposed on the basis of the developed design models and prospects for the development of microdistricts.*

## KEYWORDS

*Urban planning workshop, renovation models of mass housing districts, urban planning renovation, microdistrict transformation strategies*



*Figure 1. The dynamic of transformation of the planning structure of Irkutsk in historical evolution (Kozlov V. Urban planning history of Irkutsk, 2019)*

## Introduction

At the stage of fundamental changes in the 1990s, new urban planning strategies for the sustainable spatial development of regions, the attractiveness of the largest cities - centers in the new market conditions and competition were of key importance for the huge country of Russia. In large cities of Siberia, the dynamic development of which coincided with the period of industrialization of housing construction in the country, the prospects for the modernization of the development of existing large residential areas acquire actual social and spatial significance for the purposes of sustainable development, improving the quality of life in the cities of the eastern regions.

The approaches to the regulation of urban development that took shape in the twentieth century were based on the approval of a unified master plan for the city and a plan for regulating the development of buildings. The pace of change in modern cities makes us think about a fundamental revision of the methods of legal and strategic planning. New trends and formats of urban planning are tested in cities in the mode of interventions or pilot projects. And only then the experience gained is applied to the territory of the entire region or city. So, in Barcelona, they are experimenting with the size and shape of the quarter and traffic flows. In Poland, the socialist planning system with an emphasis on the feasibility of plans is being reformed, using the example of small towns. In Italy, urban planning is developing taking into account the temporal (seasonal) rhythms of the inhabitants. Moscow's experience in the renovation of microdistricts is being implemented through the demolition of mass types of dwellings with an increase in the density of new residential buildings. (Axenov et. al., 2006, pp. 89-90)

In 2019, the Ministry of Construction of Russia, on behalf of the Government of the Russian Federation, published new strategies in the practice of planning the integrated development of territories. Which provide practitioners with an idea of how to take into account the peculiarities of the area and evaluate the application of new tools of change. The Practical Approaches provide guidance to municipalities on how to plan for housing growth and protect the character of the area in order to ensure a

balanced approach to housing management in planning schemes. For practitioners, the planning structure associated with privatized housing and residential development is explained, and key planning policies are laid out based on the planning provisions of the previous era. (Urban Planning Code of the Russian Federation, 2020)

Actual approaches in the urban planning practice of the renovation of microdistricts are regulated by the standards for the integrated development of the territory (CRT). Which this year was proposed for testing in Irkutsk in experimental projects to solve the problems of renovation of mass residential districts. Unified standards, such as the method of regulating the development of the territory, is not a fundamentally new phenomenon in the practice of urban planning, since the city is growing and changing, both today and in the past, and at different historical stages with the participation of a number of external regulations.

In the historically formed and new cities of Eastern Siberia during the period of industrialization, limited typologies of residential development were used, among which the most massive series of standard projects were the following: 464, 447 and 335. About 70% of microdistricts and quarters are completely built up with houses of the same series: series 464 (36%), series 447 (22.5%) and series 335 (28.75%), and less than 10% by mixing series. (Glebushkina, 2010, p. 146)

Historically, in the structure of Irkutsk, there was a belt distribution of microdistricts. (See *Figure 1,2.*) The existing microdistricts of mass development had the following location features: on the border of the historical center, in the middle part and on the outskirts of the city. (Engel & Kozlov, 2019, p. 189)



*Figure 2. Scheme of the belt arrangement of a typical mass housing in the structure of the large city (left) and the scheme of development of the radial-nodal structure of Irkutsk (right) (Kozlov V. Urban planning history of Irkutsk, 2019)*

Since 1948, the USSR Council of Ministers has imposed a ban on the construction of residential buildings according to individual projects. 1960s to 1990s housing construction in the country was entirely based on industrial housing construction and urban planning standards. (Kozlov, 2019, p. 332) Modern trends are associated with the discussion of changes in existing urban planning norms (SNiPs and SanPiNs) and the development of new standards for urban areas.

Since 1959, the area of the quarter as an urban development unit has increased 3-5 times and began to be called an enlarged quarter. In 1967, the residential areas of the city began to be consistently subdivided into residential areas and neighborhoods. (Vladimirov, 1996, p. 25) The microdistrict has become the main structural element of



the residential area of cities. The optimal area of the microdistrict territory, based on the most rational placement of service facilities of two levels: daily (accessibility up to 500 m) and periodic (up to 1000 m), was determined to be 10 - 40 hectares. (Anikin, 2003, p. 11)

In order to test new approaches to the renovation of residential neighborhoods, the Irkutsk municipality proposed four built-up areas as experimental projects to develop a model for the renovation of mass housing developments at the annual session of the International Baikal Winter Urban Planning University (planning workshop) for students and young professionals with wide participation of experts and stakeholders. The projects results served as the basis for the study of design approaches in assessing the potential of mass development microdistricts in a large city and comparing design tools for structural changes in the microdistrict space at different scales. The pilot projects of the four teams reflected modern urban planning ideas, approaches to the renovation of microdistricts in the 1950-70s in the context of changing socio-spatial priorities of society.

## Methods

The study of design approaches in the renovation of microdistricts of mass development is based on an assessment of the potential and changes in the structure of the existing microdistricts, which are characterized by the following elements: planning, typological, transport, landscaping, identity. (Engel & Kozlov, 2019, p. 189) Urban planning regulations approved by the Ministry of Construction of Russia in 2019 in the form of methodological recommendations "Standard for the integrated development of territories" had an exclusively practical aspect. In accordance with this regulatory document, design approaches and strategies for the renovation of neighborhoods at the present stage are based on determining the type of development of built-up areas. (Urban Planning Code of the Russian Federation, 2020)

The four microdistricts of Irkutsk proposed by the municipality for experimental projects for the renovation of mass development, have approximately one formation period, but different placement conditions, can be attributed to the following types of integrated development of the microdistrict space:

1. integrated development of the microdistrict space within the boundaries of one or several elements of the planning structure, in which the apartment buildings are located (Lisikha microdistrict);

2. integrated development of the microdistrict space, carried out within the boundaries of one or several elements of the planning structure, which interact with production or communal capital construction facilities (Novo-Lenino and Rabocheye microdistricts);

3. integrated development of the microdistrict space, carried out within the boundaries of one or several elements of the planning structure, in which undeveloped territories are located (Yubileiny microdistrict).

Analysis of the results of design studies of Irkutsk microdistricts confirms the individual character and originality in adapting microdistricts to new requirements and realities: expanding the needs of the population in connection with demographic changes, increasing the density of buildings and the road network due to the growth of personal vehicles, moving parking zones of transport to the periphery of the microdistrict, expansion of services and accessibility of social facilities with landscaping of their sites.

The practice of renovation of residential neighborhoods of mass development in the capital in the last decade shows a different degree of intensity of changes in the existing residential areas. (The Committee for Architecture and Urban Planning of the city of, 2018, p. 68) Analysis of the potential for changing the structure of microdistricts based on expert assessments at different stages of the formation of design concepts for the renovation of microdistricts in Irkutsk made it possible to determine the following key types:

- minimal change in the development of a residential area, which has special characteristics that distinguish it from other areas of the city, which must be preserved and protected. Such areas, as a rule, are not planned for the development of housing construction and parameters are introduced that increase the restrictions;
- a fragmentary change in a residential area in which the introduction of housing takes place in the context of an existing or preferred neighborhood. Such residential areas have the potential to change the planning structure, but new development must take into account the existing appearance and character of the area;
- transformation of the structure of neighborhoods located near the concentration of jobs, services, public transport and areas that contribute to the growth of housing construction. Such areas have the greatest potential for the development of new forms and types of buildings, changes in the appearance of the area.

Comparison of projects confirms that the planning structure of micro-districts is the most stable framework in different variants of development of micro-districts of mass development. (See Figure 3.)



Figure 3. Final teams concepts for the renovation of four mass housing microdistricts of Irkutsk - Novo-Lenino, Rabocheye, Yubileiny, Lisikha (Winter Uni Workshop materials, 2021)

The greatest influence in adjusting the planning structure of the Rabochaye microdistrict was exerted by external conditions - the opening of the building to the riverside landscapes of the Ushakovka River. An important characteristic in the

analysis of the technical state of mass development series for design solutions was the volume and localization of dilapidated buildings. The analysis of the index of the state of the existing buildings in the Yubileiny microdistrict reflects the predominant group placement of technically problematic mass types of buildings. (See Figure 4.)



Figure 4. Development of an index of the state of mass series in the development of the Yubileiny microdistrict (Winter Uni Workshop materials, 2021)

The analysis of the projects of the urban planning workshop makes it possible to highlight the change in the following main characteristics of the planning structure and elements of mass development in each of the microdistricts:

- changing the size and structure of quarters;
- formation of proposals for the consolidation of the road network with the priority of the development of public transport;
- creating a concept based on the hierarchy of public spaces;
- development of an accessible and flexible model of social infrastructure;
- peripheral location of parking lots and garages;
- highlighting the stages of resettlement using a rental housing format.

Experimental projects have confirmed that the mid-storey model as a concept for the renovation of micro-districts of mass development of Irkutsk is the most preferable, despite the difference in the urban planning context. At the same time, the main spatial parameters of the development models of the renovated microdistricts were: density, structure, number of storeys. The average value of the increase in the building density of microdistricts: the population density is from 220 to 350 people / ha and the building density of the territory is from 9 to 15 thousand square meters. m. It should be noted that the compaction of buildings in each of the projects, on the one hand, led to a reduction in the area of blocks and an increase in the compactness of its form, on the other hand, the block was proposed as the dominant morphotype in renovation projects. Each of the projects focused on the development of a prototype, a presentation model of the renovation of the mass development of the microdistrict, outlining key actions and strategies.

It should be noted that after the completion of construction, the peripheral microdistricts of mass development in Irkutsk, taking into account the development of the centrality of the city, lacked certain social functions, transport infrastructure, as well as the articulation of public spaces, making them even more relevant and irreplaceable at the present stage. This structure, together with the "urban planning chaos" at the stage of socio-economic changes, made it possible to activate many local functions and activities in each district of the city.

The first municipal programs for the development of public places in micro-districts, implemented at the present stage, allow residents to rediscover the hidden possibilities of the living environment, thanks to the close proximity and the value of neighborhood (complicity, solidarity, civic position, etc.). The claims to public spaces in the quarter are varied and partly opposed. Squares and parks, as well as green spaces, which are actively used by residents, are of great importance both for life and for the microclimate. In the project for the renovation of the Novo-Lenino microdistrict, the preservation of the area of the central garden of the microdistrict as a basic element of public space, forming connections and equal accessibility for peripherally located quarters. (See Figure 5.) At the present stage, the placement of new objects of service and services in the microdistrict reflects the tendency of "polarization" of public spaces from internal spaces to the periphery of the microdistrict in the zone of influence of the planning axes of public transport. Actual approaches in the design solutions for the renovation of the public space of the microdistrict are related to the development of the interconnectedness and competition of public places, the multifunctional use of space in the spaces of city blocks.



Figure 5. The final stage of the project team's work is the formation of future residential quarters, based on the parameters of the target model (Winter Uni Workshop materials, 2021)

Research in projects confirms that in each microdistrict, the demolition of the first types of buildings of the 1950-60s was revealed, which, according to their technical characteristics, are not subject to further operation and reconstruction (See Figure 6.) Taking this into account, the projects establish options for the introduction of new residential buildings, the number of which should not exceed 25% of the total number of existing residential buildings, which allows maintaining the identity, recognizability of the microdistrict, quarter and completing their planning structure, but at the same time diversifying the architectural composition of the environment with the introduction of separate high-rise dominants of increased number of storeys (up to 15-20 floors) and new facades of solutions.



Figure 6. Neighborhood development renovation strategy 1) assessment of the state of existing housing 2) identification of the stages of demolition of housing 3) identification of the potential of the existing infrastructure 4) the formation of neighborhoods 5) the formation of open urban spaces 6) the formation of a multifunctional environment (Winter Uni Workshop materials, 2021)

## Conclusion

One of the paradoxes of globalization is the polarization of the urban environment. On the one hand the prevailing concentration of the population in large residential areas of cities. On the other hand, there is a demographic decline and labor migration in the periphery of the city. Consequently, microdistricts of mass residential development are facing an accelerated deterioration in the spatial, social and cultural condition. In the market paradigm of growth and accumulation, the chances of retaining attractiveness are slim. Since peripheral neighborhoods of mass development are caught in a vicious circle of loss of attractiveness and low ability to renovate. In this regard, the experience of experimental projects and urban planning policy in the renovation of microdistricts in the 1950-70s is interesting.

Based on design experiments and discussions on the results of team projects for the renovation of mass housing developments, it can be concluded that the following factors influence the attractiveness of neighborhoods: models and types of housing, taking into account the forms of ownership, safety, sense of belonging to the community, access to daily services, institutions and health services, freedom of choice of social activities, diversity of the composition of population groups.

In the context of modern urban planning assessments and the experience of renovating mass residential buildings, as well as the analysis of design models, taking into account the specifics of microdistricts, it is important to differentiate changes in the microdistrict structures: planning, typological, transport, green and public spaces, identity. These structures integrate the various needs of the inhabitants of the territory, the diversity of characteristics of the microdistricts located on the outskirts of the city. New trends in renovation design are related to the concepts of functional polarization in a residential area with the definition of a service function in the neighborhood of the home.

For the first time, the experimental projects of the teams focused on the potential of micro-districts in the development of a large city. The interaction of interdisciplinary research and design forms the basis of urban planning design workshops, serves the development of design studios in architectural education in the region. The restrictions set in the topic of the project seminar with the interpretation of the basic indicators of the Standard for the Integrated Development of the Territory ultimately determined the design approaches and architectural and planning models for the renovation of microdistricts. Completed projects re-open the discussion about the need for deeper changes in the urban fabric. The need to expand approaches to the renovation of mass development microdistricts can be called the following topics in the context of the city:

- integrated design strategies for the renovation of microdistricts of mass development,
- consolidation of the unique characteristics of neighborhoods, relying on the values associated with the location in the city,
- conformity of planning approaches and expansion of the typology of residential development,
- adaptation of social infrastructure and public places of microdistricts to new requirements.

Earlier it was indicated that in Irkutsk there are about 1.5 thousand five-story panel houses, which are home to about 30% of the townspeople. The state of the architectural appearance, motorways and parking lots, pedestrian connections, and the functional content of microdistricts often caused and still cause negative assessments of residents and the professional community. For 60 years, as a result of socio-economic, architectural and planning processes, spaces of social interactions of various scales have spontaneously formed, as a set of socio-spatial potentials and cultural values of the microdistrict, attributed to the socialist heritage of the 1950s-70s.

An analysis of experimental projects, taking into account some of the limitations of the current standards, showed, on the one hand, that the mass development of microdistricts, in contrast to the quarterly, has a more flexible spatial and planning structure, which allows in the future to form various morphotypes of residential groups and public spaces, on the other hand, it generates design approaches and tools for creating a viable urban environment with an authentic history, comfortable to stay and use, increasing the value of social life in residential neighborhoods.

In our work, conceptual models of the intensive development of developed urban areas of mass development of the 1950s-70s are analyzed as a tool for renovating the existing morphotypes of urban tissue, reflecting the historical and functional layers of urban evolution and possessing specific environmental characteristics. Spatial methods are analyzed that would allow using the potential of urban tissue for compaction.

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## Post-pandemic Urban Planning Rules: Future Predictions

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### ABSTRACT

*The pandemic situation has strongly affected urban life in almost every aspect. This presentation is an attempt to answer the question “which current predictions on the functioning of post-pandemic cities are the most probable”. Will the rapid changes resulting from the COVID-19 pandemic be of a lasting nature? The conducted own study was the basis for analysis of the needs of the average inhabitant of Polish cities in relation to experiencing an everyday pandemic. The questions concerned the availability of services, the methods of communication applied, the functionality of the place of residence, work, recreation, sense of security and social relations. Various elements of everyday life have been transferred to virtual space. It is very likely that they will remain there even after the pandemic ends. We have also started to perceive many services in a new light. What will the epidemic experience teach us, and how will it influence future spatial policy decisions taken after it subsides? Will it be feasible to reconcile the original drive to integrate and strengthen interpersonal relations with the need to maintain social distancing? The presentation considers the final consequences that may affect cities in the context of the current and forthcoming crises.*

### KEYWORDS

*Post-pandemic city, urban planning, trends, architecture, urban structure*



Figure 1. Biophilic architecture in Warsaw Poland.  
Illustration by Authors

## 1. Introduction

The functioning in the city during lockdown and other restrictions introduced following the COVID-19 pandemic, made society aware of the importance of proper planning. The changed rules of social life, the stoppage of the operation of many branches of the economy, the limitations on free communication, demonstrated the dysfunction of urban structures and the direction for planning in the near future. It should be emphasized, that the designing trends presented in this study are not new. The context of the studies indicates the potentials of selected planning and architectural principles, the importance of which has recently increased as a result of activities aimed at minimizing the negative effects of the pandemic.

The remodeling of work modes in many service sectors whose natural consequence is a reduction in demand for office space (especially in big cities) sparked a discussion on the possibility of adapting it to other functions. Due to the obligation to maintain a social distancing, remote work was popularized and the stationary mode was replaced with a hybrid model. Those circumstances required an adaptation of individual apartments for the situation, where living space has been combined with the workplace. On that micro-scale a preservation of space for the reposal with access to fresh air in contact of the environment, has become important. Prolonged stay in confinement, limitation of social relations and difficult contact with nature, not only does not have a positive effect on the physical condition of people but also has a negative impact on their mental health<sup>1</sup>. Design mechanisms which influence the balance and the quality of life are becoming more and more popular. An example of such solutions is the implementation of vegetative areas, not only in the immediate vicinity of the planned development but directly to the structure of the designed buildings.

The mobility restrictions during the pandemic, including the prohibition of traveling longer distances, has clearly highlighted the needs to continue activities aimed at shaping 'compact cities'<sup>2</sup>. The implementation of the so-called '15 minutes city'<sup>3</sup> has become even more significant, particularly on a local scale. The functional arrangement of areas dedicated to life of a certain number of people, should be characterized by the availability of basic services at a distance that includes surviving in lockdown conditions. Securing access, especially to medical care, or at least easy adaptation of areas with other functions, e.g. recreational, for the purposes of organizing temporary medical points or quarantine places is also extremely important. Taking into consideration the social aspect 'reconciling' the tendency to integrate residents with the need to maintain social distance is a big challenge in urban design

in the wake of a pandemic situation. This applies to almost every element of the functional structure of urban units. The analysis of the mentioned issues with the predictions regarding which of the planning principles will intensify in the near future as a result of life in a pandemic has been collected in the following study.

## 2. Directions in urban planning and architectural design foreseen in the near future

### 2.1 Office space reduction

The consequences of performing remote work on an unprecedented scale, creates not only the need to organize everyday life on a micro-scale, but also to force a reflection on the approach to planning this function in cities. According to the central statistical office Statistic Poland (GUS), there is a noticeable upward trend in people working remotely in relation to the total number of employees due to the epidemic situation. At the end of the first quarter of 2020 this percentage was 11% while a year later it was already 14.2%. The on-line system of work in the pandemic reality has revealed a number of benefits that derive from it. It is not only about saving employees' time or reducing the number of business trips but most of all, reducing the operating costs of buildings including the reduction of rental space. The adaptation possibilities of this solution also in the situation after the end of the restrictions, resulted in the popularization of the 'hybrid' model of work. The term 'hybrid work model' refers to combining work in the office with work performed remotely via the Internet. The effect of such management is a decrease in the demand for office space, because the employed staff working on shifts, use the space of the company's headquarters in a limited way.

Analyzing the data of the GUS from the 1st quarters of 2018-2021, it can be noticed, that although the number of square meters of new office space commissioned for use continues to grow (which is a result from the implementation of previously issued building permits) the share of office buildings in the overall comparison of all functions for which permits have been issued, has clearly decreased. The dynamics of changes are shown in Table 1.

**Table 1. Share of the office buildings area for which building permits have been issued in relation to other non-residential functions in Poland**  
(Source: Statistic Poland – GUS)

2018 – 1st quarter	2019 – 1st quarter	2020 – 1st quarter	2021 – 1st quarter
5,2%	6,1%	5,9 %	4,0 %

The monitoring of vacancies in the office real estate market has recorded a significant increase in recent years due to the effects of the pandemic. According to the annual, extended report on the office market in Poland, the amount of unused office space is growing in almost all major cities. The survey from the end of 2020 is summarized in Table 2.

Confirming or denying the reality of the number of office buildings under construction will be possible in upcoming years, after the completion investments for which building permits has been completed. If the upward trend in the number of vacancies continues in the near future there will be an occurrence of introducing new functions in place of unused office space.

**Table 2. The growth rate of unused office space in Poland as of the fourth quarter of the year 2020 (Source: Report Colliers International Poland sp. z o.o.)**

	Warsaw	Katowice	Krakow	Lublin	Łodz	Poznan	Szczecin	Tricity	Wroclaw
Vacancy rate in relation to the total office area space in the city	9,9%	9,2%	14%	7,8%	16,4%	13%	6,9%	9,5%	15%
Increase in relation to the same period of the previous year	2,1%	3,6%	3,3%	-	5,2%	2,2%	1,1%	4,6%	2,5%
Decrease in relation to the same period of the previous year	-	-	-	1,5%	-	-	-	-	-

## 2.2 Home-office apartments

Apart from the basic sanitary restrictions, one of the most important elements of the fight with the spreading virus was (and still is) an obligation to keep social distancing. This requirement forced employers to implement specific solutions at workplaces. Pursuant to the Regulation of the Council of Ministers<sup>4</sup> the distance between work stations should be 1.5 m. In the case of large enterprises, especially those who prefer to work in 'open-plan' spaces, it was not always possible to meet this restriction. Delegating employees to work in a remote or hybrid way has resulted in the need for them to organize individual positions in private homes. The space intended for the performance of professional duties in Polish legislation has been defined in the terms: 'workstation' or 'work room'. Pursuant to the general provisions of the Regulation<sup>5</sup>, workplaces and their equipment should provide employees with safe and hygienic working conditions. In particular, in work rooms, natural and artificial lighting, appropriate temperature and air exchange, as well as protection against moisture, unfavorable thermal conditions, sunlight, vibrations and other factors harmful to health, and nuisance, should be provided. Moreover in the premises of permanent work for each employee there should be at least 13 m<sup>3</sup> of free space in the room and at least 2 m<sup>2</sup> of free floor space, not occupied by equipment<sup>5</sup>. From a technical point of view, these are not particularly demanding regulations. Compliance with the above recommendations is possible in almost all existing apartments. However, the ergonomic aspects and comfort in terms of efficiency and quality of work should be taken into consideration. In Poland, a standard full-time contract obliges the employee to work for at least 8 hours a day, 5 days a week. Therefore it is extremely important to create the right conditions for both concentration and creative thinking during this time. The survey conducted by the authors for the purposes of this study<sup>6</sup> shows that more than half of the respondents took steps to adapt their apartments to the 'home-office' mode. The results show that about 30% of respondents have a separate room for work, while 28% have a separate workspace - a position for performing professional duties. Also, the majority of respondents consider remote work to be comparable to work in an office - about 40%, while 23% say that it is more effective. The above statements prove that proper organization is crucial in the context of the results obtained. Summarizing all the aspects, there is a possible assumption that in the near

future larger flats, which enable the designation of a separate room as a work room, will become more popular on the market.

### 2.3 Biophilic design

In circumstances of prolonged stay in confinement during the pandemic or the need to work from home, the aspect of rest and recreation which allows contact nature should also be taken into account. This is an important part of maintaining balance in the context of mental health. Scientists from Japan<sup>1</sup> have proved that contact with nature, particularly the view from the window and just spending time in green areas has a direct impact on self-esteem, happiness and satisfaction with life. Rooms with a view of greenery have also a great contribution to reducing the level of stress, loneliness or depression among people who experience them. The recently gaining popularity of the 'biophilic design'<sup>7</sup> trend or the 'biophilic architecture' and 'biophilic solutions' derived from this term seem to, at least in part respond to those needs. This design concept consists of introducing vegetative surfaces into the space and structure of the building. The planting of greenery elements directly in the architectural body is carried out on many levels. This applies to both the interior of the building and its external parts such as walls, roofs, balconies, terraces, etc. Growing plants is not limited to ornamental but also, more and more often refers to vegetables, shrubs and small trees. An interesting fact is that biophilic solutions, despite their popularization in our times, come from antiquity. One of the so-called The Seven Wonders of the Ancient World, known as The Hanging Gardens of Babylon<sup>8</sup> was based on this concept. In the 6th or 7th century BC, in the palace of Queen Amytis, the green gardens full of trees, bushes and flowers were established on cascade terraces. Everything was artificially irrigated.

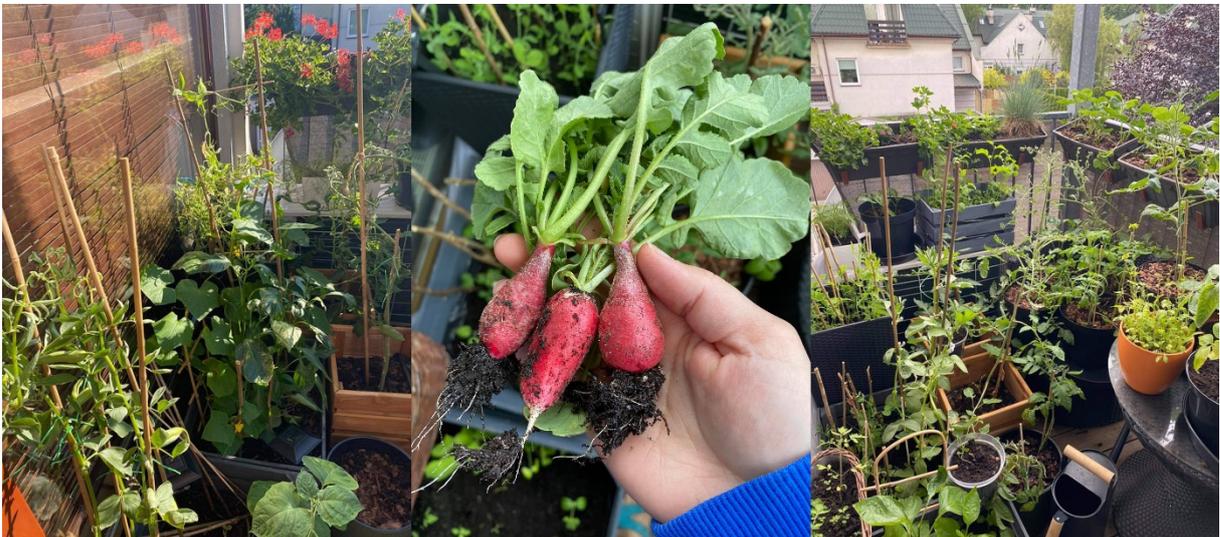


Figure 2. Example of balcony in private apartment in Warsaw with an individual vegetable growing.  
Illustration by Authors.

### 2.4 Urban farming

Cities are composed of their inhabitants and can function owing to the cooperation between them. In 2020, the real risk of staying in public space, closing borders, blockades and traffic restrictions in the face of the COVID-19 pandemic forced

city dwellers to modify their individual and social habits. The new challenges that the pandemic posed towards the consumers and suppliers are also broken fresh food supply chains. Simple supply chains, as well as a small number of engaged commercial intermediaries, turned out to be safe; also more intensive pondering about the issue of growing crops within and around cities started to prevail. Urban farming, located within the area of housing estates, currently brings a series of advantages to local communities, i.e. they range from psychological benefits to increasing the availability of fresh food ingredients. A growing number of scientific pieces of research clearly demonstrates the benefits of urban farming during the COVID-19 period.

In the research conducted for the purposes of this study, the analysis covered, among others, the need and readiness of the surveyed inhabitants of large cities to grow their own food close to their place of residence (community garden or urban farm)<sup>9</sup>. Such a tendency was expressed in the survey by over 60% of respondents. The percentage of the individuals from the research group who had already decided to grow vegetables, herbs or fruit in their home garden, balcony or terrace was also verified. It is the vast majority of the research group (over 66%). Around 10% of respondents do not have access to a balcony, terrace or garden in the place of residence. Over 98% of the survey participants declared that after the experiences related to the COVID-19 pandemic, they would not decide to purchase real estate in the city without their own balcony, terrace or tenant garden. Summing up the survey results, it can be assumed that the interest in residential premises with no access to outdoor space is declining.



Figure 3. Balcony in another private apartment with an individual vegetable growing. Illustration by Authors.

## 2.5 '15 min city'

In the search for a sustainable urban future – in the context of the COVID-19 pandemic – the concept of the 15-minute city is often raised. We imagine cities where all the daily needs of the dwellers can be satisfied within a walking distance or a bike ride (up to 15 minutes from home), owing to which we can avoid the necessity to use a car or public transport. The ideal case is the remote work situation (home office) or in close proximity to the place of residence. Cities formed of a network of inhabited and complete residential areas, organized locally, can be considered as safe spaces to revitalize social life in the face of COVID-19. Assumptions of the concept formulated by professor Carlos Moreno at the University of Paris present the concept of a 15-

minute city as a place providing its residents with pedestrian access to six basic functions: living, working, commerce, healthcare, education, and entertainment. The urban grid of such a model consists of four relationships: density, proximity, diversity and digitalisation<sup>3</sup>. More and more cities are trying to implement a similar model supporting local neighbourhoods and a sustainable lifestyle, by investing in the improvement of the life quality of their inhabitants. The notion is, among others, promoted by Anne Hidalgo (the mayor of Paris) who wants the French metropolis to become 'La Ville Du Quart d'Heure' and Moreno's idea is the driving force behind the 15-minute city map of Paris. In Poland, this concept was used by the architects of Medusa Group when creating the design (awarded today) of the Cracow residential area; 'Live in the city', located in Bronowice precinct.



Figure 4. The 15-Minute City framework.  
(Author: Moreno, C.; Allam, Z.; Chabaud, D.; Gall, C.; Pratlong, F.  
Source: Creative Commons)

In the survey<sup>6</sup>, the general level to which Polish large cities meet the basic principles of the '15-minute city from the perspective of their inhabitants' was studied. Based on the received responses, conclusions were drawn regarding the availability of supplies and services within a 15-minute walk from the place of residence. The vast majority of the respondents live near educational institutions (e.g. school) – over 98% of the survey participants. Every member of the research group has a grocery store nearby that can be reached quickly on foot (100%). Access to a health centre – consistent with the idea of prof. Moreno – was declared in the survey by 83% of respondents, and access to recreational areas was indicated by over 95%. Nevertheless, 44% of the surveyed believe there is insufficient amount of greenery near the place they live, as was especially experienced during the travel restrictions during the COVID-19 pandemic.

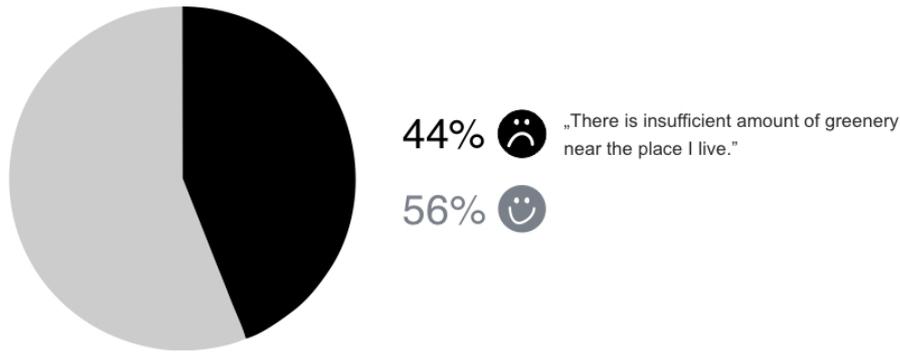


Figure 5. Level of satisfaction with the amount of greenery in the city. Illustration by Authors.

## 2.6 Everyday city transport

The consequence of the COVID-19 pandemic is a change in preferences as well as regulations related to movement – both on a local and global scale. To ensure safety, the number of people working based on the home office system is increasing, commuting to the workplace by public transport and business trips are reduced to a minimum. The scale to cover the needs for space for bicycles and scooters in the city has been redefined. Consumers more and more often tend to use the on-line delivery option of shopping or ordering food from restaurants to their home, bearing in mind limiting the risk of infection. The changes that are taking place can persist long after the spread of the COVID-19 virus has been limited, and can modify the habits of city dwellers. Currently, a vital issue is not only access to light vehicles such as bicycles or scooters, but primarily the safety and health of their users. New consumer preferences may also move towards more frequent private car use, however it is expected that the choice of micro-mobility means of transport will also gain more popularity<sup>10</sup>.

More than 40% of the survey participants declared that they gave up using public transport after the outbreak of the pandemic, 33% had not used it before and still do not use it. The remaining 27% use public transport continuously at the same level. Presently, after softening the precautions linked with the pandemic, more than 61% of the research group most often use individual transport (car), 22% choose a scooter, bicycle or moped, and only 17% use public transport. The response to the next question asked in the survey reveals that most people travelling in the city by car would choose a bicycle or a scooter if the network of bicycle paths were more expanded and safer.

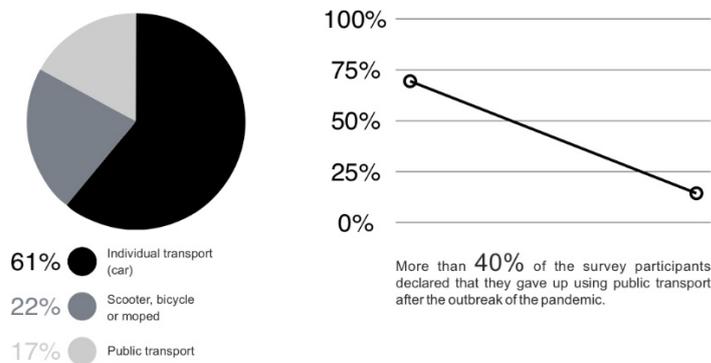


Figure 6. City transport after the outbreak of the pandemic. Illustration by Authors.

## Conclusions

Summarizing the considerations on trends in urban and architectural design in the context of the effects of the COVID-19 pandemic, it can be noted that all the above-mentioned trends relate directly to the idea of sustainable development. The current situation is helping us to realize how important is to live in respect of nature. With the outbreak of each historic, global epidemic has come new modes of governing of social life and interaction, novel efforts to intervene in and prevent infection. Today, more than a year into the COVID-19 global pandemic, we can start to imagine a post-COVID urban landscape.

It should be noted that these projections and trends are not new solutions. How a Soviet Concept can be translated into the 15 Minute City? In both assumptions, the key is the independence of neighbouring districts, an appropriate hierarchy of transport and the standardization of functions present in given areas by means of spatial planning. These are, in fact, similar solutions to those countries are trying to use to combat a pandemic.

In most cities of Russia and the republics of the former Soviet Union, and in some post-Soviet and post-socialist countries, residential districts were built according to the concept of microdistrict or microregion. The estates usually covered an area of 10 to 60 hectares and consisted of residential buildings and public utility buildings. Essentially, major motorways, green trails and natural obstacles served as the boundaries between the settlements, allowing the overall cost of building and maintaining city roads to be lowered, and an emphasis on public transport. The standards also regulated the accessibility of public buildings (excluding schools and kindergarten facilities), imposing a limit of 500 meters as the farthest distance from each apartment.

This presentation is an attempt to answer the question “which current predictions on the functioning of post-pandemic cities are the most probable”. On the basis of literature research, observations and a questionnaire survey, 6 significant aspects and directions of changes in architectural design were selected: The office space reduction; The need for home-office space improvements, Biophilic design; Urban farming; 15-minute city model and Everyday city transport. About 100 adult residents of large cities in Poland took part in the survey. The results show the level of satisfaction with the direction of changes implemented in the urban space and new needs after the pandemic. The expected changes are related to the basic need to feel secured in case of an emergency. It is necessary to plan the direction of infrastructure changes in response to the expectations of residents. All the discussed aspects are related to each other and comes as a result from the change in the proportion of the needs and limitations of urban residents. As it has been in the past, the city is after pandemic can become more varied and more balanced then before.

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## Towards a Potemkin City: Motifs and Consequences of Reconstructivism in Central- and Eastern Europe

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### ABSTRACT

*This paper investigates the current reconstructivist trend in Central- and Eastern Europe with the comparison of two case-studies of examples in the post-socialist cities of Berlin and Budapest. According to the central hypothesis, the reconstructivist trend in architecture, manifesting itself in the apparent widespread resentment of society towards late modernist architecture, is in fact a mere psychological projection of unresolved collective traumas of the past. I argue, that the aesthetic judgement of late modernist architecture (it being 'ugly') is in fact a projection of undisputed and unresolved collective traumas deeply rooted in the collective memory of society. The projection is taking form as facadist, scenery-like architecture, the so called Potemkin City. This collective nostalgia towards a never-existing past, connected with the anxiety caused by permanent over-exhaustion of global resources and the unsustainable development, can only imagine the future as a re-establishing of the past. The process is strongly interwoven with the effects of the tourism-industry on the city, when the entity of the city only functions as an Instagram background, resulting in the loss of porosity in the city.*

### KEYWORDS

*reconstructivism, heritage protection, post-war architecture, late modernism, adaptive re-use*



Figure 1. Palace of the Republic, Berlin. Leading architect: Heinz Graffunder, construction:



1973-76, demolition: 2006-08 (Photo: Peter Heinz Junge, source: Bundesarchiv, Bild 183-1986-0424-304 // CC-BY-SA 3.0)

Figure 2. Headquarter of the Hungarian Commerce Chamber, leading architect: Béla Pintér (KÖZTI), construction: 1969-72, demolition: 2016-17 (Photo: László Heltay, source: Magyar Építőművészet, 1974/1., 12.)

## 1. Introduction

The demolition of the Electric Power Distributor Station (by architect Csaba Virág, IPARTERV) in the castle District of Budapest in 2020, which took place against the petition of the Hungarian ICOMOS committee and the Association of Hungarian Architects appeared to be an almost unprecedented shock for many professionals – which can partly be traced in the discussions on social media and professional platforms such as [epiteszforum.hu](http://epiteszforum.hu) – , whereas it caused a rather minor turmoil amongst townsman outside the professional field. The removal of the office building of the former headquarters of the National Chamber of Commerce in 2016, another late modernist building, which stood vis-à-vis to the neogothic Hungarian Parliament building, was even less debated professionally and socially. Both these office buildings

have been dismantled to be replaced by reconstructivist architectures with the same function, accommodating offices.

Whilst the pressure to provide affordable housing and regulate the profit on rental fees (for example the *Mietendeckel* debate in Germany) is ever increasing in the context of enduring shortage of (especially social) housing units in Central- and Eastern Europe and investors already seem to seek out every possibility to convert built substance with diverse past functions into flats and the demand for sustainability in architecture is more and more understood in terms of flexibly planning and development of adaptive re-use practices, reconstructivism proves to be still popular in Central- and Eastern Europe, resulting in demolitions of socialist built heritage, mostly late modernist edifices and the (re-)erection of historical buildings, that are strange amalgams of historicist facades and up-to-date structural and interior solutions.

The result of reconstructivism, one of the current trends in architecture in Central- and Eastern Europe, will be the Potemkin City of facadist, scenery-like architectures, which might prove to be ideal backdrops for touristic images and marketing campaigns but, interfering with the demands of neoliberal economies on urbanism, also might result in the loss of porosity within the cities - by denying the option of adaptive re-use for most late modernist built heritage - and this time a more casually happening than planned separation of the four functions within the city.

Affirming that reconstructivism is more than just another revival of styles (hence the very term of re-constructivism is preferred to the as well circulating term of neo-historism) two case-studies in Berlin and Budapest are analyzed: the removal of the GDR-era Palace of the Republic (Palast der Republik) and the resurrection of the former Berlin Palace (Stadtschloss or Schloss zu Berlin) as a multi-functional cultural agora (Humboldt Forum) is compared with the dismantling of the headquarters of the Hungarian Chamber of Commerce and the (re-)construction of a never completed tenement building.

## 2. The Disregarded Possibility of Adaptive Re-Use

When investigating examples of reconstructivism particularly in Central- and Eastern European context it can not be ignored that a certain period of architecture, namely what can be broadly but best categorized as the late modernist period, is mostly excluded from the options of adaptive re-use. Some may call these architectures 'socialist modernist', however, I agree with Hungarian museologist and curator Márta Branczik (M. Branczik, personal communication, 18 February 2020), that apart from their – indeed – oftentimes poor materiality (to be understood not as a poor choice of materials but as the poor availability or more so the lack of high quality materials) most of these buildings have nothing architecturally 'socialist' about them: their morphology, oftentimes their functions and contribution of functions, their architectural formal language differs in no way from what was built in Western Europe by the same time. Late modernist architecture established behind the Iron Curtain reflects as well the utopias of a collectivist society as Western European late modernist architecture reflects the collectivist efforts of the late welfare states.

So whereas the late modernist building stock in Central- and Eastern Europe in fact does not portray many eastern specialities or socialist traits, the treatment of these architectures – oftentimes not even regarded as built heritage worthy of protection – is indeed a post-socialist peculiarity.

In many cases reconstructivism, the demolition of a built late modernist edifice and the (re-) construction of a predecessor building, is favoured to the adaptive re-use



of these buildings. It has to be pointed out that this paper is not concerned with the often claimed and supposed inability of this late modernist buildings stock to be updated to contemporary structural and HVACR / house automation standards and expectations. This is often claimed as a central argument for limitations within adaptive re-use, however it has to be pointed out that it is seldom actually proven, when not the most conventional (re-) refurbishment techniques are applied.

I argue, that the possible resentment of society towards late modernist architectures, often judging them 'ugly' is in fact a projection of feelings towards an unprocessed past, that is motivated by their connotation with this difficult past: the material destruction during World War II., (Göbel, 2015, p. 2) conditioning how they came into being, their connotation with socialist regimes in Central- and Eastern Europe (Radnóczy, 2018) – even though they oftentimes do actually not bear specifically 'socialist' features – and a collectively felt nostalgia of contemporary societies for a constructed 'better past'.

The following two examples of reconstructivism can not only be compared by their seemingly superficial similar imageability, but also because construction works started and ended in the approximately same period, both buildings were demolished despite many argued for their potential for adaptive re-use and both buildings were situated in a historically highly charged location in the city of Berlin and Budapest. Also the successor building is in both cases a neohistorist reproduction. However, there are some interesting discrepancies between the two cases, which are being elaborated in the following section and lead to a conclusion, that could raise awareness for the not only architectural, but also huge cultural potential that lies within the potential function change of late modernist buildings.

### **3. Berlin: the Palast, the Bergkristall and the Schloss**

#### **3.1. Historical overview**

The Palast der Republik in Berlin is an interesting edifice amongst the many state buildings of the German Democratic Republic: on the one hand it was conceived to be a 'people's palace', accommodating differently themed restaurants and cafés, event halls (resembling the function of the specifically socialist type of culture halls (*Kulturhaus* in German or *kultúrház* in Hungarian) but also non-public functions such as governmental offices. In the many event halls weddings could take place, but the Palast was also the location for SED (Sozialistische Einheitspartei Deutschlands) party congresses. It was a 'gift' to the citizens of GDR – and it was a gift from the party – meant to show not only to their own citizens the progressiveness of the leadership but also to display this to the West: Figure 1. is chosen deliberately because it depicts the Palace from an angle, which displays the formal indeterminateness of the building; according to this viewpoint the Palast could have stood on either side of the Berlin Wall (but obviously the view of the TV-tower at Alexanderplatz puts it into context immediately). But all architectural skillfulness, public functions and well designed interiors could apparently not forget that this building was erected almost on the same spot the residency palace of the Hohenzollern, the Palace of Berlin once stood: it was heavily damaged during World War II. but was dynamited and dismantled only in 1950 on orders of SED secretary general Walter Ulbricht. Until the construction of the Palast der Republik the site of the former Schloss was used as parade grounds and parking lot.

The Palast could never entirely free itself from the difficult proceedings in history. However the removal of the Palace after the fall of the Berlin Wall was a highly debated topic in Germany for many years. It would be impossible to retrace details of the Schloss-debate that caused many confrontations inside and outside of the profession in the given frame of this paper. What is of importance however, is the very fact that there has been a public debate in television, newspapers and private blogs on the question of the demolition of the Palast and the re-erection of the Schloss, which not least also demonstrated that the diversity of society was also displayed in this discussion: it would be hard to conclude, that the vast majority of citizens was clearly for or against the demolition and reconstruction. It is even claimed, that there could be a particular, strange post-Cold-War, almost imperialist reading of the dismantling of the Palast, as it was decided on institutional level from a reminiscent of a Western-perspective, trying to retroactively liberate citizens of GDR and freeing them from their difficult heritage, that only reminds them of their – as assumed from a Western perspective again – not too bright past, whereas some sources claim, that independently from how grim or not the GDR past was, some ex-citizens of the GDR did value the building, did have a personal attachment to it through visiting or simply as being part of their everyday lives or seeing when visiting Berlin and felt, that the demolition took away or even erased part of their past. Melanie Van der Hoorn reflects on this in her book *Indispensable Eyesores. An Anthropology of Undesired Buildings*, that not seldom there does form personal attachment even to buildings with difficult pasts or presents, buildings in an unconventional 'state' or even without a function. She portrays this procedure with the case study of the informal usage and the demolition of the Kaiserbau, a never completed hotel skeleton in Germany (Cf.: Hoorn, 2009).

### 3.2. Zwischennutzung (interim usage)

Being without a function was perhaps the most interesting state of the Palast. After the asbestos removal has been carried out and the building has been stripped of all its interior furnishings, fittings and claddings, almost only the building frame remaining, the Palast has been given a second life in form of a *Zwischennutzung*, interim- or temporal usage, as the premises were made available for artistic installations and interventions. This in-between-state of the Palace, being architecture without a function (so almost not actually being architecture anymore), after asbestos removal and before an already decided-on demolition, with a vast availability of spaces that could be not only flexibly used but were because of the final decision invulnerable, proved to be an extremely inspirational ground for artist and creatives. Hanna Katharina Göbel examines in her book *The Re-Use of Urban Ruins. Atmospheric Enquiries in the City*. amongst other examples in Berlin in the 1990s – how the temporary usages of the Palast by a cultural curatorial committee changed the perception of the building for a vast number of Berlin and former GDR residents, but also attracted a large number of tourists. The curatorial committee called themselves and the project happening during the summer of 2004 and 2005 Volkspalast, which was a reflection on the German typology of Volkshaus (similar to the worker's clubs in Great Britain) and to the very idea the Palast having been built for the people (Göbel, 2015, p.27). Artistic interventions such as the *Hotel Bergkristall* made it for instance possible for visitors to spend a night in the skeleton of a building and to be part of a unique experience. The 2005 installation by Lars Ø Ramberg, which displayed the word ZWEIFEL (doubt) in capital letters on the facade of the building and which was

illuminated by night (Fig. 3.) possessed of such strong imageability and manifested the apparent doubt concerning the demolition of the Palast so well, that the installation was not only well represented in the media then, but photographs of the installation are still circulating.



Figure 3. Palace of the Republic, Berlin. Z W E I F E L installation by artist Lars Ø Ramberg.(Photo: Dr. Naraelle Hohensee, CC BY-NC-SA 2.0, Source: <https://smarthistory.org/palast-der-republik/>)

### 3.3. Funeral or *danse macabre* of a building

This interim period of artistic usage and making the empty premises available to artists and creatives, ‘letting people into’ the building, guaranteeing them accessibility proved to be a fruitful intervention on many levels: it can be regarded as a strange kind of *danse macabre* - as the fate of the socialist modernist building was sealed by that time - , an opportunity to say goodbye to the building, regardless of the fact how much ‘loved’ or appreciated it was in the GDR era or right after the fall of the Wall. The sudden removal of architecture, that is in most of the cases a display of a collective effort or a big collective endeavour, as something that was planned, if not for eternity, but to be present in the city for at least long decades, always reflects a major shift either in political or socio-economic context. However appreciated or disregarded a building was, but not independent from how dominant it was in the cityscape, the demolition is always a bit of a shock for society (either as a relief or as a trauma). Being granted the opportunity to experience the Palast in a different state, right when it is only borderline architecture – or even ruin as Göbel defines it – and being granted the option of a quasi funeral is of high importance in the process of society dealing with complex and difficult feelings for the past (Hoorn, 2009, pp. 33-34). This understanding was also favored by architect Eric Tschaiker’s contribution in the Call for Ideas Fun Palace 200X concerning the possible re-use or demolition of the Palast. Tschaiker reflects in his proposal to Lacan’s concept of *dying twice* and proposes, that the symbolic death of the Palast (as its ‘backing’ state institution was no more) should be followed by a physical death, but as an “orchestrated deceleration of substantial

decomposition” (Misselwitz et al., 2005, p. 192), the final layers of the Palast being disseminated by 2010.

### 3.4. Reflective nostalgia

On the other hand, making this difficult, multi-layered, hence inspiring milieu available for artists and accessible to residents and tourists could be regarded as a form of trying to collectively cope with complex and challenging feelings. Again, the demolition of the Palast was already decided by the time of the interventions and there was already the possibility, although not decided on, of re-building the Schloss, but all the artistic interventions can precisely be understood as forms or expressions of *reflective nostalgia*. In Svetlana Boym's terminology, contrary to *restaurative nostalgia*, which “attempts a transhistorical reconstruction of a lost home” (Boym, 2001, p. XVIII) and to “patch up the memory gaps” (Boym, 2001, p. 41), *reflective nostalgia* “dwells on the ambivalences of human longing and belonging and does not shy away from the contradictions of modernity” (Boym, 2001, p. XVIII).

### 3.5. Access to the margin and individual narratives

Furthermore, Van der Hoorn emphasizes, marginalized or quarantined buildings (that have been out of function for some time and inaccessible to the public, that are rumored to be ‘contaminated either materially or ideologically’) always trigger collective imaginations, why it happened, what happened to the building and hence fabulating about what might be hiding in the inside of the building (Hoorn, 2009, pp. 1, 4). Radically opening up the Palast materially and metaphorically was an answer to all the narratives and myths circulating around this literally and phenomenally contaminated building (ironically also called *Asbestpalast*) and was in turn generating new, this time personal experiences with the building, that could integrate into new personal narratives: “It created its own cultural value by making itself available as an object, an object that at the same time remained resistant to concerns of planners, investors and politicians, and to other human interference.” (Göbel, 2015, p. 65)

Accepting the hypothesis that the difficult relationship with the Palast for many citizens is rooted in the amalgam of collective memories and feelings concerning the history of it, the heavy damage of the Stadtschloss during World War II and the final removal of it by the SED mainly conditioned the erection of the Palace of Republic than the processing of such difficult feelings would only possible through artistic means, through reflective nostalgia, as reconstructivism can only be regarded as an almost absolute example of restorative nostalgia and can only result in the Potemkin City, in which “the past is not supposed to reveal any signs of decay, it has to be freshly painted in its ‘original image’ and remain eternally young” (Boym, 2001, p.49).

## 4. Budapest: the Good, the Bad and the Ugly

The headquarters of the Hungarian Commerce Chamber (Magyar Kereskedelmi Kamara székháza, Fig.2.) by architect Béla Pintér (KÖZTI) was completed in 1972 and the office building - similar to the Palast - was supposed to be a representative building, as businesspeople from East and West were expected to visit it. It was to represent socialist progressiveness in its imagery, the applied architectural formal language, by the used materials and by the accommodated functions. Large parts of the ground floor had to be occupied by the Metro exit to Kossuth Lajos square, but in the design of the remaining space it was still attempted to rather generously leave space for pedestrian traffic (as the glass facade of the entry to the office building was regressed) and to

nonetheless provide the offices (floors III.-VI.), the large lecture theater (I. floor) and the canteen and cafeteria (VII. floor) with a well articulated, representative foyer, from which a spiral staircase led to the lecture hall (Fig. 4.). Drawing a parallel between the Palast der Republik and the Hungarian Commerce Chamber building, it has to be pointed out that in both these buildings are manifestations of the late-socialist effort, to represent Eastern up-to-dateness not only to the own citizens, but also - or precisely - to the West. According to their architectural formal language there is nothing specifically socialist modern about them. The walls of the foyer of the Commerce Chamber building was clad with white marble, and relief by artist Gábor Boda covered one of the pillars.

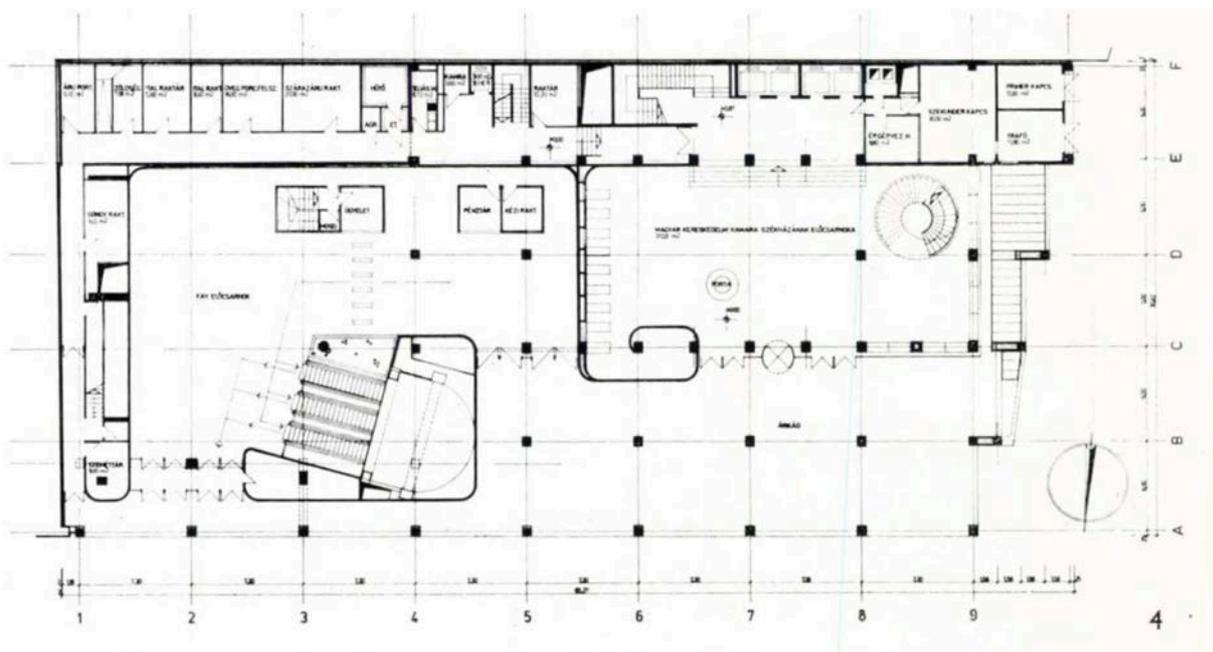


Figure 4. Floorplan of the ground floor. Hungarian Chamber of Commerce headquarters. 1972. Architect: Béla Pintér, KÖZTI. (Source: Magyar Építőművészet, 1974/1. p. 13)

The location of the headquarters was - similarly to the Palast - prominent, diagonally opposite to the Parliament building, neighboring an unfinished historicist building by Dezső Hüllt. Completing Hüllt's original vision and unifying the facades around and through this harmonizing the architectural imagery of Kossuth square was the main reasons for the removal of the Commerce Chamber building (Fig. 5.). As David Smiló states in his article *Plastering of Power (A hatalom vakolása)* the results of the international ideas competition in 2015 (the governmental decision to convert the building was passed in 2012) was rather disappointing regarding the quality and complexity of the submitted works. In some of the proposals it is even hard to trace if the proposed solution is an actual serious proposition or an ironical vision (Smiló, 2016). It has to be noted that this idea competition did not propose a full demolition of

the building by then, it was a call for a solution to the facades to integrate the edifice better into the historicist context.

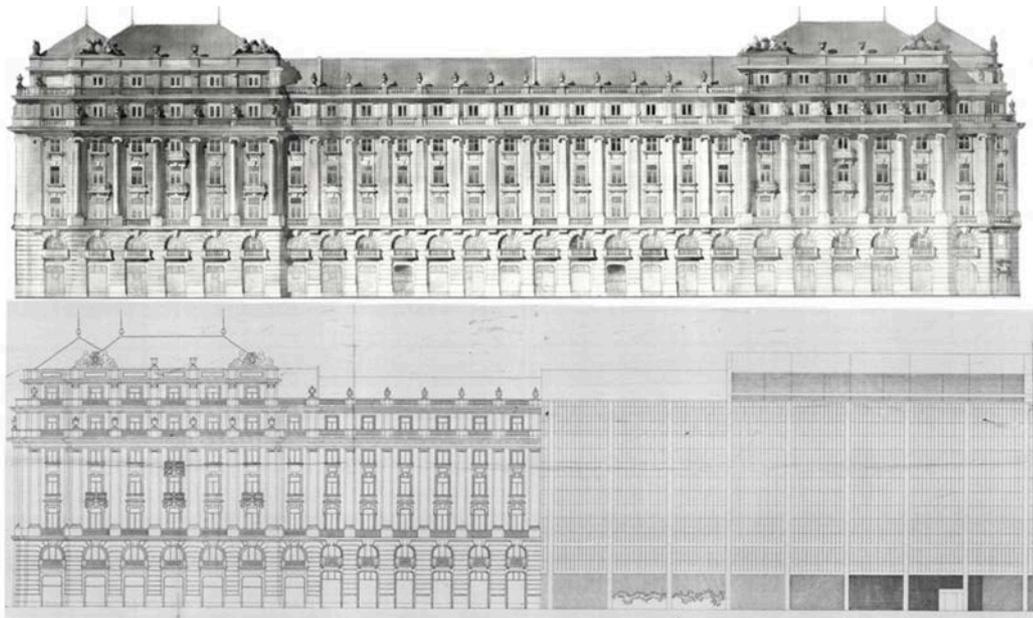


Figure 5. Above: Facade of the full city palais as designed by Dezső Hüttl. Below: Facade of the constructed part (on the left, Kossuth tér 10., 1929 and 9., 1937) and the adjacent late modernist Commerce Chamber building (on the right, Kossuth tér 6.-8., 1972). (Source: Steindl Imre Program)

In summary, nearly all the submissions struggle with the anticipation of the initiators, to unify the historicist, turn-of-the-century character of Kossuth square and design an up-to-date office building with Metro entry on the ground floor. In result none of the proposals can liberate itself from a kind of postmodernist grip and this is reflected by the ornamental treatment of the facades, and the very concentration and focusing on the facades. Although some prizes were awarded to contestants, no winning proposal has been selected (not even all available prize money was handed out) and none of the awarded concepts was further developed or realised later. The finally erected structure can be seen - parallel to the re-erection of the Stadtschloss in Berlin - as an exemplary case of reconstructivism, as it lacks any reflective attitude, even if only portrayed in a postmodernist manner 'superficially' on the facades, but is a reproduction of the original plans of the exterior. As the new function of the new structure equals the old function of the old building, the Janus-facedness is irresolvable: the building, architecture is torn into space and surface that is unable to meld into whole, exterior surfaces and interior surface clash and diverge in materiality and formal language.

#### 4.1. Competition Entry No. 19.

There was however one competition entry (No. 19.), which did not succumb to the siren call of postmodernity giving a 'new' facade (which is a mimicry of an old facade) to an 'old' building. The concept behind this proposition is the detailed analysis of the almost objet trouvé, an investigation of how the building is morphologically integrating into its surroundings, how the demands of functions are fulfilled, how relevant the used formal language is and a detailed examination of how the materials have aged. Whereas the initiators assert in the competition brief that the Commerce

Chamber building is “is both technically and aesthetically outdated, its condition run-down” (Országgyűlés Sajtóirodája, 2015), the competitors begged to differ in this opinion disguising as a fact and came to the conclusion, that in nearly all the above mentioned criteria the building does quite well, hence there is no actual need for a total conversion of the facades, only keeping the column-and-slab-structure of the late modernist building. The participant proposes some refurbishment on the facade (for instance removing the parapet areas and deepening the glass fronts to the floors) and some alteration on the volume (particularly in the roof area), where the construction did not follow the original plans of the architects and details were carried out differently, but overall they display great sensitivity for the late modernist architecture and even speak out against converting or dismantling a building ready for adaptive re-use only because of its architectural formal language connotated with a past regime, ill-defining the building as socialist-realist (sic): “Our conclusion is that (...) i. This is an architecturally valuable and sensitive building and it would be a shame to throw it all away, because this building is good! Vernacular language often falsely calls the style of this building a socialist-realist (“szoc-reál”) and attaches, not without any cause, negative connotations to the architecture of that period. We think it would be important, to somewhat rehabilitate the opinion or judgement on that period exactly by not throwing away the values this building created and bears.” (Sándor, 2015).



*Figure 6. Above: Kossuth square 6.-8., international architectural facade design competition, visualization of the modernized former MKK headquarters building, competition entry No. 19 by Viador Átrium (Gergely Sándor et al.)*



Figure 7. Above: Kossuth square 6.-8., international architectural facade design competition, visualization of the modernized former MKK headquarters building, competition entry No. 19 by Viador Átrium (Gergely Sándor et al.).

## 5. Conclusion

In Berlin reconstructing a building ‘lost’ in the past was supposed to materially and metaphorically assemble a fragmented or difficult past (Buttlar & Habich, 2011, p. 10), in the case of the Palast, reconstructivism was supposed to maybe erase traumas concerning the destruction of the built environment during World War II. - (as claimed by the associations pro Schloss (Binder, 2009, pp. 170-172) - , to maybe make up for the dismantling of the Schloss by the GDR regime, whereas in Budapest reconstructivism also tried to repair historical incongruity and unify a highly frequented, representational square in its imagery. The latter aspect can be traced in the jury’s final report of the creative design competition for the visual modernization of the MKK headquarters, as *harmonious fitting to the adjacent buildings and how condign the proposed design would be for neighbouring the Parliament building and being located an the Nations Main Square* was one of the main criteria of judgement (Füleky et al., 2015, p.2)

The manifold motifs for reconstructivism in Central- and Eastern Europe are a highly complex amalgam of – partly collectively suppressed – feelings, that range from collective traumas with history, destruction of built environments and oppressive regimes to feelings of nostalgia for a somewhat cloudy past, that manifest themselves architecturally in form of buildings feigning historical continuity (Cf.: Oswald, 2005, p. 41) and as sceneries for consumption (Buttlar & Habich, 2011, p.14) where architecture is often reduced to its imageability (Oswald, 2005, p. 40).

Among the potential effects of architectural reconstructivism – which can not be exhaustively elaborated in their full range within the scope of this paper – are the production of unreflective architecture, the debatable disappointment in contemporary architecture, the possibility of deepening an already existent disruption in societies

(Brodowski, 2005, p. 56), whereas the incapability of dealing with the paradox of GDR-utopia and institutional surveillance portrays another missed opportunity of self-reflection (Reis, 2019, p. 189).

However, the often claimed obsolescence of late modernist architectures in Central and Eastern Europe and restorative nostalgia favored by reconstructivism gains importance also by being regarded from the perspective of the ever growing scarcity of building materials and worrying energy over-consumption (invested into the demolition process and invested into the construction of a completely new edifice). This is a paradoxical process in so far, as this collective nostalgia towards a never-existing past or arbitrarily chosen – Cf. Svetlana Boym quoting Daniel Libeskind (Boym, 2001, p. 191) – is vested primarily in the loss of a vision of the future that is exactly conditioned by the anxiety caused by permanent over-exhaustion of global resources and the unsustainable development.

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# Fragmenting Emptiness: the Democratic Resilience of Post-socialist Public Spaces in Contemporary Budapest

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## ABSTRACT

*In my contribution, I take a closer look at the field of tensions that defines the redevelopment of post-socialist green public spaces in Budapest since 2010. I concentrate on the democratic political potentials such spaces hold against the post-democratization and ecological degradation that characterizes the contemporary neoliberal right-wing populist political hegemony in Hungary. I draw up a concept of “emptiness” that describes the alterity of post-socialist urban spaces in comparison with contemporary ideas of urbanity based on urban and political theory. Through a comparison of the People’s Park (Népliget) that has not been transformed since the communist era and the City Park (Városliget) which has been fundamentally transformed in the last decade, I illustrate how the current Hungarian political order is reproduced through the production of urban space. The analysis is based on personal observations, the analysis of media reporting and other official sources such as official websites of projects currently transforming Budapest’s symbolic spaces, laws, decrees and orders legally regulating developments. I finally argue, that the emptiness of post-socialist urban public space is of outstanding importance for a politically and ecologically just urban planning, and overcoming the current paradigm oriented solely towards growth.*

## KEYWORDS

*post-socialist public space, Budapest, right-wing populism, neoliberal urban development*



*Figure 1: Transparents of the civic resistance group “Ligetvédők” fighting against the construction of new buildings in the City Park, summer of 2018. (Photo by author)*

## 1. Post-socialist Budapest

Budapest’s development in the first two decades following Hungary’s transition from an authoritarian communist regime to liberal democracy (referred to as “System Change” - Rendszerváltás in Hungarian) was characterised by a near absolute lack of symbolic projects (Kiss, 2018). Only a few efforts were made during this period to represent post-socialist Hungarian nationhood in urban space, most notably under Viktor Orbán’s first term between 1998 and 2002 (Palonen, 2013), other larger projects were, however, always thwarted by the lack of political consensus.

The reason for this can be found in the post-transition polarisation of the Hungarian political space. Emilia Palonen (2009) describes the emergent system as a bipolar hegemony, or one of competing populisms, where the two sides of the political spectrum struggle to remain in power mostly through a populist othering of the opposing camp. This leads to an ever-increasing polarisation and at the same time effectively prevents political pluralisation. The nation becomes the central signifier within these struggles, making cooperation and bipartisan support for large-scale representational symbolic projects impossible. The fragmented nature of Budapest’s new, democratic self-governance system and its role in the support of party clienteles – resulting from the deficiencies of the party funding system – further charges questions of urban development with partisan conflict (Gerő, 2018).

The 2010 general elections of Hungary have brought the overwhelming victory of the coalition of the right-wing populist parties Fidesz (Hungarian Civic Union) and KDNP (Christian Democratic People’s Party). The programmatic statement consequently issued by the new Prime Minister, Viktor Orbán, interpreted the resulting two-thirds constitutional majority as an authorisation “to establish a new political, economic, and social system built on new rules in every area of life” (Office of the National Assembly, 2010, p.3). The result has been the formation of the current political regime widely referred to as the ‘System of National Cooperation’ that subsequently

gained notoriety as the clearest embodiment within the European Union of the “democratic regression” characterizing contemporary politics (Schäfer and Michael Zürn, 2021).

A notable consequence of this political transformation with regard to the development of Budapest is the increasing importance of urban heritage and processes refiguring the city’s symbolic landscape. In the decade following 2010, in sharp contrast with former trends, several large-scale urban development projects were launched, transforming the capital’s central spaces most laden with political meaning.

## 2. Urban Heritage

I refer here to urban heritage as a hegemonic practice through which hegemonic actors (in this case the current Hungarian government) articulate historical narratives in urban physical space that structure a group’s (the nation’s) collective remembering and thus contribute to the formation of its collective identity. In this context, there are two distinctive characteristics that define heritage processes in post-socialist Central and Eastern European states. On the one hand, the antagonistic relationship of the new political regimes towards the post-war communist dictatorships. This is connected with an increased valuation of preceding conservative systems and the consequent refiguration of urban symbolic landscapes articulating continuity with these. On the other hand, the lag with which the shock-like political and economic shift from communism to western neoliberal capitalism is followed by the restructuring of urban space.

While large-scale urban heritage projects transforming contemporary Budapest do exhibit the same characteristics that Swyngedouw et al. (2002) associate with large-scale urban development projects typical for the neoliberal new urban policy, as Akçali and Korkut (2015) show, in the Hungarian context, such transformations are entangled much more closely with the populist articulation of national (and religious) identities. Accordingly, the outstanding importance of this practice in the last decade of Budapest’s development can be attributed to the following multiple entangled and mutually reinforcing characteristics that are key to the stabilization of the current Hungarian political regime:

Firstly, using a minimal definition based on a discourse theoretical perspective, right-wing populism, such as that of contemporary Hungary, is characterized by the construction of a homogenous ‘people’ with reference to signifiers such as “race” or “nation.” The “nation” is constructed here as antagonistically opposed to on the one hand a corrupt elite (in this case rhetorically connected with the former communist elites) and a threatening (often racialized) outside enemy on the other (Laclau, 2018; Stavrakakis, 2017). National myths and collective remembering constitute a central field for hegemonic struggles due to their fundamental role in the construction of collective identities, serving as a transcendental ground lending legitimacy to the established order (Marchart, 2016). The transformation of the symbolic landscape of the national capital is an outstandingly important stage within these struggles, serving the articulation and sedimentation of historical narratives underpinning collective (national) identities.

Secondly, with tourism and related construction activities becoming the dominant driving force of the world economy (D’Eramo, 2021), developments that reinforce the historical specificity and uniqueness of urban environments become key factors in the global competition between cities and national economies. Accordingly, tourism and



construction play central roles in the economic policy of the Hungarian government, along with the agrarian sector (Office of the National Assembly, 2010, p. 19). On the one hand, these are responsible for the absorption of large amounts of (unskilled) labour force into precarious jobs with little opportunities for organization. On the other, they play an important role in the centralization of wealth in the hands of a national economic elite loyal to the government (Sallai and Schnyder, 2018). At the same time, large-scale urban heritage projects stand in a mutually reinforcing connection with the rearrangement and centralization of institutional landscapes within various fields, including architecture, urban planning, heritage preservation, arts or historical research.

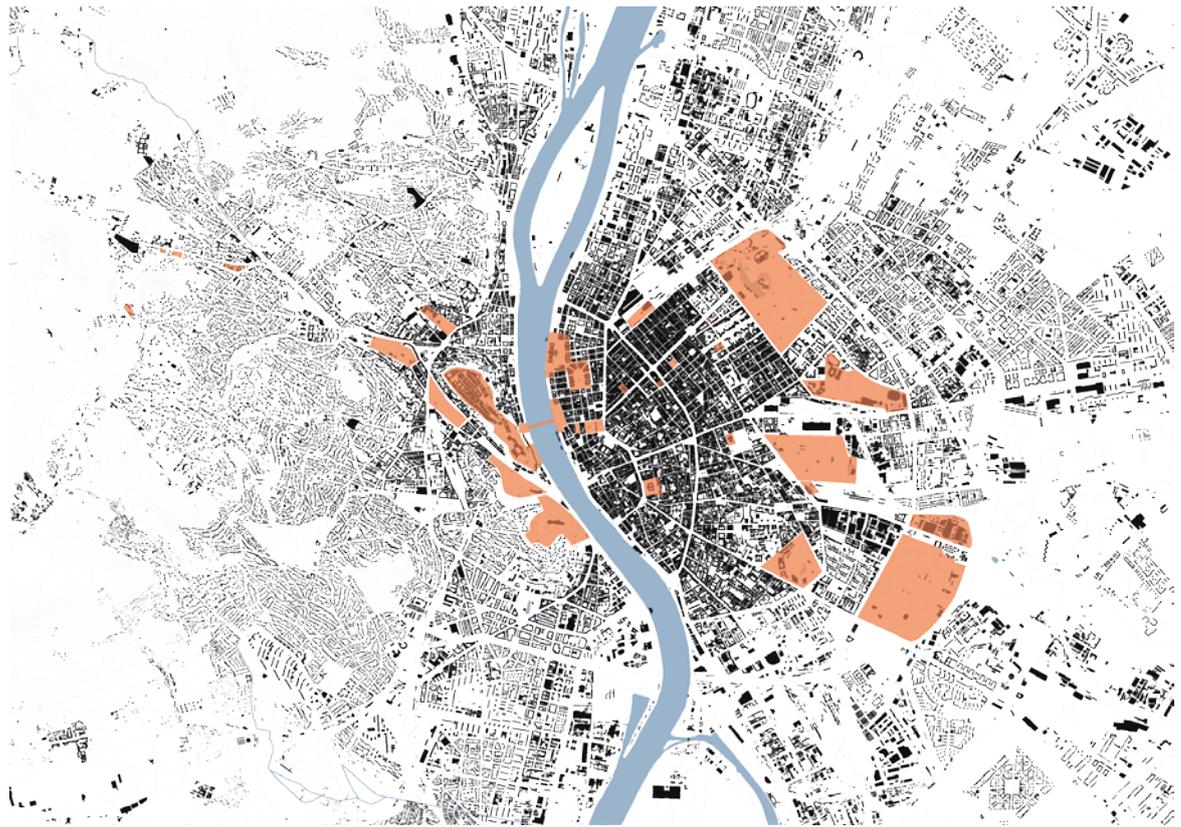
Thirdly, the architectural transformation of physical space and the consequent ordering of bodies is key to the formation of relations and hierarchies between social subjects and institutions. The rearticulation of relations between the capital's symbolic spaces and most important political and cultural institutions, as well as the determination of who have access to these define the visibility and enunciative possibilities of social subjects and set the forms of association possible between them. In other words, the transformation of urban public space plays a key role in the reproduction of the ideal 'people' or public, upon which the stability of the political order is dependent.

### **3. Budapest after 2010**

A survey of laws, decrees and governmental orders from the last decade gives a detailed picture of the spaces in Budapest, the transformation of which was initiated by the national government. These are usually marked by governmental decree as being of major national economic interest in order to speed up their implementation by disabling or overwriting various processes set out in regulations regarding planning and construction. While urban heritage projects make up a large part of these transformations, other sports related and commercial developments are equally prevalent. My current wider focus is on the former category.

These projects include the renovation and reconstruction of historically important buildings, building ensembles and public spaces, such as for example Kossuth Square at the Parliament, the surroundings of the Royal Palace in the Castle District, the Palace Quarter around the National Museum or various historical buildings and cultural institutions along the defining axes of the Danube and the Andrásy Boulevard. The other most pronounced tendency is the revitalization of historical green public spaces, such as the City Park and Orczy Park, and former industrial areas exemplified by the Millenáris or the former Northern Maintenance Depot (Északi) to serve symbolic, cultural and leisure functions.

In what follows, I will take a closer look at the latter tendency. Concentrating on historical green public spaces in particular, I will first explore their most important characteristics in the specific context of the post-socialist city. Then, I will summarise the main tendencies that define their transformation in the post-2010 period of Budapest's development. Finally, I will argue that with the impending climate catastrophe, the increasing post-democratization of politics, growing social inequalities and dwindling welfare, green public spaces that already are recurring stages of democratic dissent will increasingly become a focal point of political conflict in contemporary Hungary.



*Figure 1: Locations of ongoing and planned urban heritage projects in Budapest initiated by Hungary's current national government highlighted in red. (By author, basemap: OpenStreetMap/schwarzplan.eu (CC BY-SA))*

In this context, I will use the concept of resilience not in the technocratic, neoliberal sense as an alternative to the increasingly compromised concept of sustainability (Gräfe, 2019, p. 183). Although within the contemporary context of progressing and entangled environmental and social crises resilience will undoubtedly play an increasingly important role in urban planning, my argument here requires a different definition. In what follows, I refer to resilience in order to describe the political potential of certain spaces to connect and articulate democratic demands and struggles that resist the multiple entangled crises of ecology, politics and social reproduction characteristic of contemporary neoliberal capitalism (Fraser, 2021, pp. 103-107) and its right-wing populist variant through political action.

#### **4. Post-socialist green public spaces**

As discussed above, in the first twenty years after the transition the symbolic spaces of Budapest remained largely untouched by urban development projects. In a round of “decommunisation,” memorials and statues of the former regime were removed and collected in the so-called “Memento Park,” but the spaces otherwise remained the same, albeit existing in a fundamentally different social, political and economic system. This temporal lag between social, political, economic and (physical) spatial change can be best illustrated by German historian Reinhart Koselleck’s (2018) concept of “sediments of time.” According to Koselleck, historical time is a heterogeneous and multi-layered concept as opposed to the standard modern understanding of history, a homogenous and linear progression (Jordheim, 2012). He illustrates his concept with the metaphor of sedimentary layers of geological strata, a coexistence of multiple

temporal layers flowing, sedimenting, solidifying and eroding at different paces, leading to occasional tensions and ruptures within the experience of history (Hoffmann and Franzel, 2018).

My conceptualization of post-socialist green public space derives from such an understanding of the tensions between abrupt economic and political change and the inherently slower social and spatial transformations of the transition period. Accordingly, I do not specifically refer to spaces that are the material products of the communist era, but in a wider sense to green public spaces within the particular socio-spatial context of post-socialist Central-Eastern-Europe. My further analysis relies on the comparison of two central historical green spaces in Budapest, which were originally created in the 19th century and have served various publics and purposes ever since. As such, they are integral elements of the symbolic landscape of the capital and were accordingly adapted in the communist period to serve the symbolism and representation of the regime and mirror its ideals regarding the ways its citizens were expected to organize their free time.

The first example will be the People's Park (Népliget) in Pest that has not undergone any relevant physical transformation since the transition. Its surroundings have been fundamentally transformed as part of numerous large-scale urban development projects in the last decade, some of which are still in progress; however, the park's revitalization is only in the phase of preparation. It will be key to the elaboration of my concept of the emptiness of post-socialist green public spaces that I will later use to explicate their resilience against the entangled crises of contemporary neo-liberal capitalism.



Figure 3: The City Park (north) and People's Park (south), the two largest public parks of Budapest. (By author, basemap: OpenStreetMap/schwarzplan.eu (CC BY-SA))

The second example will be the City Park (Városliget), which has been thoroughly transformed as part of one of the largest symbolic urban development projects of the post-2010 period. Although the construction of several buildings is currently still under way, or is stalled due to the objections of the opposition-led municipal government, the majority of the green area has been updated to what can be described as the ideal of the current political regime. As such, this case will inform my exploration of the of the fragmentation of emptiness through various entangled practices that are utilized throughout the transformation of empty post-socialist green public spaces and their incorporation into the symbolic space of the contemporary hegemonic order.

While I base the following arguments largely on the in-depth examination of these specific spaces, the argumentation is partly informed by the post-2010 transformation of other smaller green public spaces around Budapest. Accordingly, I argue that the characteristics that I describe in the following pages can be generalized in the contemporary context of the Hungarian capital. The transformation processes of green public spaces in other post-socialist states in the region require a separate analysis to establish whether my findings are relevant for the wider regional context.

#### 4.1. Emptiness

Visitors arriving at the People's Park in Budapest are confronted by a large, neglected and inconspicuous green space. Deteriorated and mostly empty kiosks line the surroundings of the busiest neighbouring public transport station that serves the adjacent international bus terminal. The wide road circling the park's perimeter and the numerous other extensive paved surfaces are mostly used by parking cars. The pavement is worn, patches of concrete in various shades of grey mark the minimal efforts to keep the walkways accessible. The only public institution of the area, the planetarium is closed for renovation, although there seem to be no signs of construction work happening on it. There are only a few people walking around or lingering on the repainted wooden benches remaining from the communist era. Several of them homeless, receiving insufficient social support and driven from the city centre by the increasingly strict policies.

As Pier Vittorio Aureli (2011, pp. 2-26) shows with reference to Hannah Arendt, the modern capitalist logic of urbanization tends towards the continuous expansion of the logic of the private household to all space 'in-between.' This tendency towards the incorporation of all space under the logic of the hegemonic order drives the development of Budapest as well, where the values of neoliberal urbanization are entangled with the populist articulation of national identity.

The People's Park is firstly *empty*, because in the wake of the transition, statues and monuments were removed from it, no public institutions are located within it, and large public events that were formerly held there are no longer part of the contemporary order either. It was not re-integrated into the new symbolic order and serves no representative function today, despite being the capital's largest green public space. In this sense, it constitutes a potential for an alternative symbolic politics and a possibility for the articulation of a different spatial order.

Secondly, the shift from the communist dictatorship to a liberal democratic system meant fundamental changes in the way subjects are governed. While during the previous regime the control of the population mostly relied on coercion by an extensive security apparatus, "neoliberal governmentality conducts individual behaviour by incitation and not by coercion" (Lorenzini, 2018, p. 156). According to Lorenzini (2018, pp. 155-156), the neoliberal subject is largely manageable by control of their environment. Modifications introduced into this environment shape the conduct of

people. This implies a very extensive programming of urban space for uses that play a central role in the constitution of the ideal subject. In this context planning professions then play an outstandingly important role in the reproduction of the hegemonic order, due to which Gabu Heindl (2020, p. 121) refers to them with reference to Jacques Rancière and Robert Goodman as “soft cops.”



*Figure 4: A charity organisation distributes warm food at the entrance of the People's Park to those in need, summer of 2021. (Photo by author)*

From this perspective, the People's Park constitutes a spatio-temporal gap, which enables the presence of forms of social subjectivity that are undesirable from the regime's perspective. Today this is mostly reflected in the space being widely perceived as un-safe, due precisely to the presence of people that are not able or are unwilling to play along with the social roles that are seen as normal. This however, also can be seen as potentially enabling for forms of associations and solidarities between people and the emergence of new social subjects in urban space that stand opposed to the injustices of the hegemonic order.

A third related aspect of the park's *emptiness* deriving from its lagging incorporation into the new hegemonic order and its dominant ideas of urban development is the relatively uncontrolled nature of the relation between the built environment and vegetation. Similarly to the industrial sites made redundant by the post-fordist transformation of the economy, particularly visible in post-socialist Central-Eastern-Europe, the slow deterioration of these spaces gives way to an unplanned entanglement of nature and the material environment. I argue that this phenomenon holds an important potential for the rearticulation of our “grammar of nature: the social meanings attributed to it, our place within it and relation to it” (Fraser, 2021, p. 105).

In other words, urban green public spaces shape urban dwellers' relation to nature symbolically, they are potentially central points for symbolic struggles against contemporary capitalism's predatory relation to it. Combined with the two previously described potentials, this makes such spaces outstandingly important in connecting democratic demands that are aimed at the overcoming of the various crises that are caused by the same inbuilt self-destabilising logic of contemporary society.

## 4.2. Fragmenting emptiness

The idea of a new cultural quarter along the Andrásy Avenue was first announced in 2011. This would have scattered cultural institutions along the axis connecting the City Park with the Centre of Pest, as well as the Danube and the Castle District. By 2013, the concept for the Liget Budapest Project (Liget Budapest, nd) was born, which in turn proposed the concentration of cultural functions in the City Park to create an internationally relevant touristic destination. At the same time, moving cultural institutions here, freed up symbolic locations for governmental functions. In the so-called 'Liget Law,' almost the whole area of the park was transferred under the authority of a state owned private company led by a government commissioner for 99 years (Office of the National Assembly, 2013). The subsequent transformation of the park illustrates the various processes of fragmentation of the above described *emptiness* characterising post-socialist green public spaces in Budapest which I will now shortly summarize.



Figure 5: The House of Millenium in the City Park, summer of 2021. (Photo by author)

The main argument behind the Liget Budapest Project is the area's outstanding role in the collective remembering of the nation (Office of the National Assembly, 2013). The entire space is integrated into an expanding symbolic landscape that reproduces the historical narratives structuring the dominant political camp's collective remembering. The improvement of touristic, cultural and leisure functions becomes inseparable from the reproduction of these. The newly renovated House of Millenium (Millenium Háza, nd) exemplifies this trend by mixing commercial functions with cultural ones. The interactive exhibition on the park's (and Budapest's) history that it hosts, projects narratives that reinforce the hegemonic order.



Demolishing the remnants of the communist regime belongs to the most conspicuous tendencies of Budapest's contemporary development. This can also be observed within the Városliget, where the former offices of Hungexpo (Trade Fair), the Petőfi Hall (a former event hall and museum) and the large procession square on the park's western edge are all demolished to give space to new contemporary landmark buildings. Thus, the memory of the previous regime is performatively erased from the city's fabric.

The area of the park is increasingly subdivided into zones for specific activities, which are mostly separated from each other by gating and decorative planting. Running tracks and open-air gyms are scattered around the space, while areas for team sports are fenced and are available only for paying visitors. Numerous playgrounds cater for families with children; dog walkers are similarly allotted their own gated territories. Most spaces conceptualized for leisure activities are organized around commercial functions with relatively high prices catering for tourists and consumers of similar financial means. The correct use of each area is set out by uniform signage describing the precise use envisioned by its designers. Regulations, opening hours and acceptable as well as prohibited activities are listed here. The whole park is under CCTV surveillance and is regularly policed.

Activities and visitors that do not fit the ideal set out by the developer, and thus the state, are driven from these spaces. This does not only reproduce the image of the ideal subject of the 'System of National Cooperation,' but effectively hides the system's socio-economic shortcomings. The most vulnerable people such as the homeless are increasingly marginalized and driven from urban spaces by aggressive policies. Larger gatherings and democratic dissent is similarly made increasingly complicated, as officially prescribed leisure and commercial activities dominate the space.

The central point of political conflict regarding the development was the issue of green spaces. Opponents of the project argued that with the transformation the proportion of green surfaces within the Városliget would further fall from a number already lower than what is legally set out as a minimum for parks. This was contradicted by officials' claims, arguing that with to the revitalization of paved areas and demolition of buildings inherited from the communist era the park's green surface will grow. These conflicting claims can be traced back to differences in the parties' definition of green surfaces and the resulting society-nature relationship.

The resulting new green surfaces of the park mirror the hegemonic order's "grammar of nature." Areas newly developed on the place of the former procession square on the western edge of the park do not support the engagement of visitors with nature, plants are merely serving a decorative function that can be observed from street furniture installed on extensive paved surfaces. The rooftop of the newly constructed Ethnographic Museum will be greened, fitting into the greenwashing tendencies characteristic of neoliberal urban development. Nature is fragmented, controlled and aestheticized, while systemic ecological or groundwater related questions are largely disregarded.

## 5. Conclusion

With the impending climate crisis, ecological questions are increasingly pushed to the centre of political debates today. Actors of the most diverging political convictions are taking sharp green turns. Nevertheless, behind the apparent consensus that something needs to be done, there is "a roiling dissensus" (Fraser, 2021, p. 95). Fraser (2021) argues that a new eco-political common sense needs to be built, that exposes

the fundamental structural contradictions of the contemporary hegemonic order that view nature as a self-replenishing and appropriable means of value expansion. Furthermore, she emphasizes that contemporary political crises, the crisis of care and the global dynamics of exploitation and expropriation are closely entangled and can be traced back to neoliberal capitalism's drive for sustained growth as well.

In the last decade, several local struggles throughout Budapest were fought for the preservation of green areas. Similarly, civic actors led movements in central symbolic spaces as for example against the transformation of the City Park or the falling of trees in Kossuth Square before the Parliament. The latter struggles exposed the entanglement of the progressing political crisis of post-democratization with the ecological degradation of the environment.

As Budapest's transformation progresses, an ever-larger part of the city's space is absorbed by the hegemonic order. In this context, the political potential of post-socialist green spaces that remained untransformed in the last three decades is increasing. Their *emptiness* enables the acting together of people and the emergence of new associations among them, from which new counter-hegemonic subjects can arise. At the same time as these spaces are not yet associated with dominant political powers, they hold a symbolic potential for the articulation of counter-hegemonic identities. As urban citizens' everyday relation to nature is largely shaped through such urban green spaces, these identities can be easily connected to ecological struggles that will play an increasingly emphasized role in the following years.

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## Brownfields and Green Infrastructure in the Region of „Triangle of Death”

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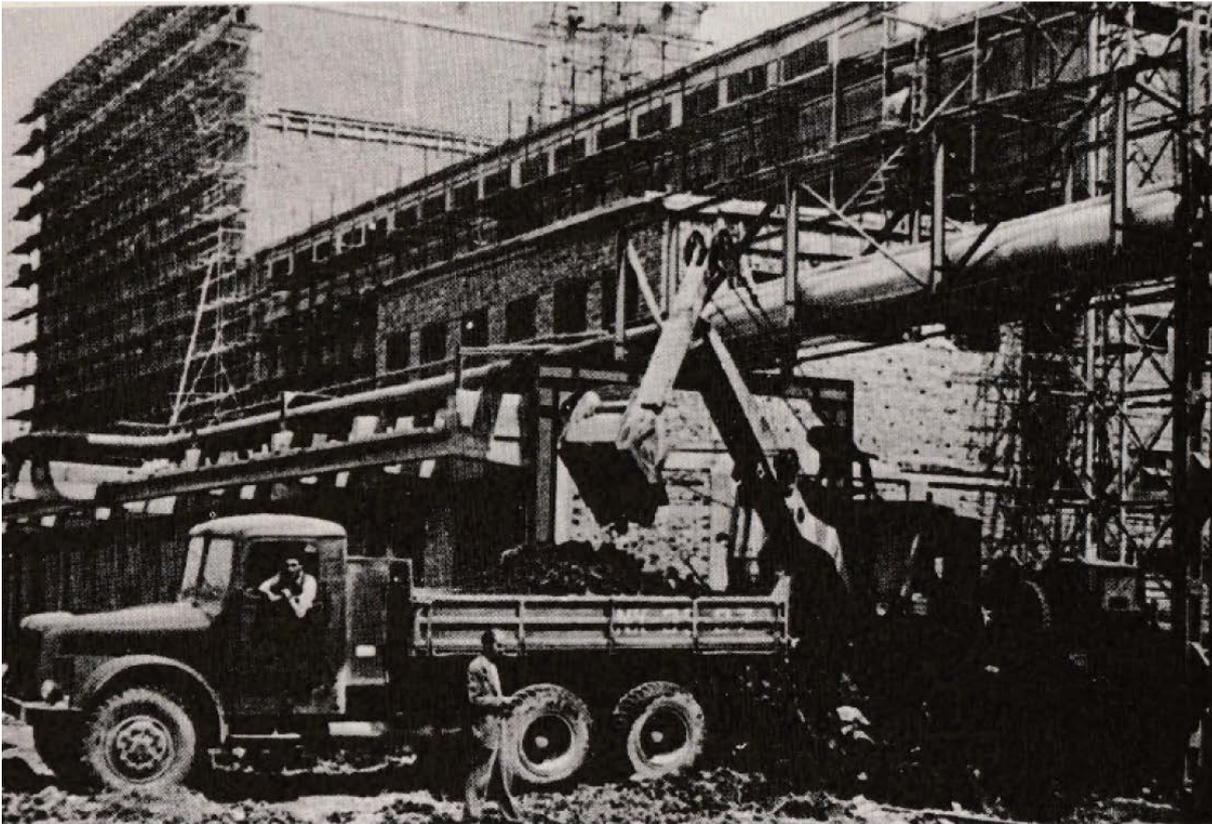
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### ABSTRACT

*In the region of Upper Zemplín in Eastern Slovakia, three chemical factories were established in the 50s of the 20th centuries: Chemlon Humenné, Chemko Strážske and Bukóza Vranov nad Topľou. An increase in job opportunities has initiated the redevelopment of former rural structures into compact urban structures of housing estates and public amenities between the 50s and 80s. Socioeconomic changes after 1989 caused privatization of factories which led to reducing production and number of workers within a decade. The population started to decline, and urban structure decayed. However, these factories are still producing dangerous pollutants causing enormous environmental burdens, which gave this area infamous name “triangle of death.” The surplus of brownfields and vacant land which the real estate market cannot absorb creates the potential for improving green infrastructure. Implementing microclimate regulation and water retention measures, habitat services, recreational services and contaminant remediation can lead to mitigating climate change, protection of ecosystems and a healthier living environment for residents. This study aims to search for brownfields – lost spaces that can be transformed into green infrastructure. Their mapping and finding new land uses will provide a manual for municipal authorities for handling these spaces.*

### KEYWORDS

*region of Upper Zemplín, shrinking cities, brownfield, green infrastructure, greenspaces*



*Figure 1. The construction of Chemlon Humenné between 1956-1959. (Source: Chemlon, 1978)*

## 1. Introduction

In the region of Upper Zemplín, three chemical factories were established - Chemlon Humenné (See Figure 1.), Chemko Strážske and BUKÓZA Vranov nad Topľou (See Figure 2.) Their establishment was part of the Communist Party policy and its plan for the industrialization of Slovakia intending to level out economic and cultural differences between regions (Chemlon, 1978). At the beginning of the 50s of the 20th centuries, the construction of factories began and at the end of them, the factories were in full operation. Until then, the agricultural region with the rural structure of single-family dwellings suddenly changed into the centre of chemical industry in Eastern Slovakia. It was necessary to build new housing estates, schools, commercial centres, hospitals, and recreational facilities for workers who moved to industrialized towns.

From the establishment of the factories until the revolution in 1989, most of the current urban structure was developed. Previously modern buildings and public spaces nowadays require considerable investment in revitalization, which is challenging for towns with shrinking budgets. The urban structure of the towns is interspersed with various types of brownfields, from industrial sites to abandoned single-family dwellings.

The once prosperous industrial region is experiencing a decline from the 1990s to the present. It is the result of fundamental socio-economic changes: privatization of factories, job losses, the lack of new job opportunities, the outflow of skilled labour to larger cities and abroad, and the outflow of young people for study who have already decided not to return to home. The location outside the main development axes of Slovakia (Ministry of Transport and Construction of the Slovak Republic, 2011) and weak connection to international road transport reduces the competitiveness of the

region. Finally, chemical production in the area called the “triangle of death” has caused significant environmental burdens for which no one wants to take responsibility.

The trend in recent decades indicates the central location of new factories in western Slovakia. There is no presumption that the region could increase industrial growth in the future. Even though the factories are currently operating, they risk cessation of production in the future. We know from foreign and domestic experience that brownfields after former chemical production are not suitable for residential or public functions (Bartošová, 2012).

The studied towns are struggling not only with the outflow of population and surplus of brownfield sites but also with climate change, maintaining a healthy living environment and increasing the quality of life for residents. The use of brownfields as an element of green infrastructure can contribute to the elimination of environmental burdens and at the same time to the improvement of the microclimate and the mitigation of urban overheating while creating attractive living environment.



Figure 2. Location of model towns within Slovakia and region of Upper Zemplín. (Source: R. Hajduková)

## 2. Theoretical framework

“Shrinking of cities” has become “normal” development of cities from 1990s in Central Europe and predictions are that it will continue. These cities are no longer considered as attractive for a living and residents migrate into regions with higher quantity and quality of job opportunities and higher quality of life (not polluted environment after industrial uses and higher housing quality) (Rumpel & Slach, 2014).

However, the population decline is the main indicator of urban shrinkage, but not the only one. The shrinkage is related to changes in urban structure as a whole resulting in vacant land, abandoned buildings and industrial brownfields. They are generally the result of socioeconomic change and deindustrialisation, typically found in formerly industrial cities, which are shrinking at present (Rieniets, 2009). Spatial plans usually do not identify them or suggest land use for which there is no demand (e.g. housing, industrial areas). The lack of demand and abundance of unused land create excellent opportunities for improving green infrastructure in shrinking cities (Hollander et al., 2009).



Greenspaces can contribute to the quality of life of inhabitants, their psychological, physical, and social wellbeing (O'Brien, 2005), but only cultivated green spaces are perceived as a symbol of high culture and quality of life (Rieniets, 2009). Green spaces in post-socialist towns have been neglected for decades and are perceived negatively by inhabitants. Residential greenery on housing estates, riverbanks, green spaces surrounding public amenities are lost spaces – neglected chaotic areas calling for the reconstruction (Trancik, 1986). These already green areas are in bad condition and lack a functional use but have a great potential for regeneration. Regenerating lost spaces and brownfields can ensure great accessibility of attractive green spaces for urban residents near their homes (Stubbs, 2008) and a promotion of “quiet recreation” or the creation of community gardens (where possible) (Atkinson et al., 2014). New and existing greenery on brownfields and lost spaces can also contribute to climate change mitigation, ecosystem protection and a healthier environment for inhabitants through increasing the overall surface area of vegetation.

## **2.1. Greened brownfields and their uses**

In general, brownfields and lost spaces are perceived negatively, but young generation see them as spaces where they can unleash creativity (Lynch & Carr, 1979). Unlike traditional greenspaces such as parks, green squares or gardens, lost spaces and brownfields provide space for unconventional forms of green spaces.

Greened brownfields are great place for the sport recreation and its non-traditional forms that are lacking in smaller towns but could be the potential for improving recreational tourism. This uses include adrenalin sports, non-traditional sports and URBEX (urban exploration).

Nowadays, urban agriculture is getting more attention in addition to food self-sufficiency. Allotments, as a traditional form of garden, can be established in the protection zones of railways. However, they are getting replaced by popular community gardens (Mathey et al., 2015). An alternative is guerilla gardening, meaning growing vegetables on uncultivated land without the owner's permission (Háblová, 2019).

Brownfields are “venues” for cultural and public events thanks to a unique genius loci and freedom of experimentation. An example of such use is the Zollverein Park in Germany, which is the centre of cultural, artistic, and educational institutions. Another example of successful cultural space is the former steelworks converted into the Landscape park Duisburg-Nord. A common feature of these parks was a heavily polluted area unsuitable for any further development.

Implementing temporary uses on lost spaces and brownfield sites provide opportunities for small businesses, local tourism, and enhance the quality of life of residents (Hollander et al., 2009). These combined with greenspaces can create a long-term healthy and attractive environment for residents and tourists as well.

## **2.2. Green infrastructure and city**

The post-socialist industrial cities underwent a rapid population decline through any countries of former Soviet Union. Here are some examples how they overcame problems with implementing green infrastructure.

The Leipzig in Eastern Germany lost in 1990s 20 percent of its inhabitants, but experienced sudden improvement of the environment. Brownfields were reused as green spaces creating parks, community gardens, playgrounds, and urban agriculture areas, while existing parks were enlarged and redesigned. Now, Leipzig experiences re-densification as the result of being an attractive and healthy place to live. These new

developments endanger created green spaces under pressure of high-density land use (Haase et al., 2019).

In Budapest in Hungary many of the brownfield sites are connected to the Danube as the transport water route. There are possibilities for developing green areas on abandoned railway areas, riverside area and and brownfield sites. According to the Development Concept of the green area network of Budapest based on the Budapest 2030 long-term urban development concept, the goal is to transform the riverbank into green pedestrian and cycling area. However, new residential development projects – Marina-part and Southgate Budapest, create prestige residential areas without allowing continuous pedestrian promenade and public use (Adorjan et al., 2019).

Brownfield transformation into green space requires a lot of time and public finances, with often uncertain results, when inhabitants may be afraid to use already restored areas, due to the unpleasant image of the brownfield from the past (Rall & Haase, 2011). Public greenery is intended to serve the public and in practice it is impossible to charge for its use. On the other hand, increasing the quality of urban green spaces on brownfield sites will increase the quality of life and attract inhabitants to newly attractive zones (Schetke & Haase, 2008).

The aim of this research is to identify lost spaces and brownfields that are already partially or completely green with the aim to transform them into attractive greenspaces and involve in green infrastructure. Mapping them and suggesting possible land use for commercial and non-commercial purposes will provide local governments with a manual for deciding on their further use.

### 3. Methods

The study maps brownfields to identify a potential network of green spaces on the current brownfield sites. We focus on areas that are at least partially green, neglected public green spaces as well as industrial areas with large residual areas of greenery.

The subject of the research are three cities - Humenné, Strážske and Vranov nad Topľou.

Their common characteristics are:

- close geographic location in region of Upper Zemplín,
- similar regional characteristics (social, cultural, ...),
- same modern history from second half of 20<sup>th</sup> century, when chemical factory was established in every model town,
- similar urban structure growth from second half of 20<sup>th</sup> century.

The study methodology is morphological research carried out based on orthophotomap and a cadastral map. Areas of lost spaces are drawn in the freeware program QGis. The output are schemes expressing a network of potential greenspaces and corridors of green infrastructure on brownfield sites.

Lost spaces identified in model towns are divided into 5 categories according to the potential of greenspace.

Green spaces:

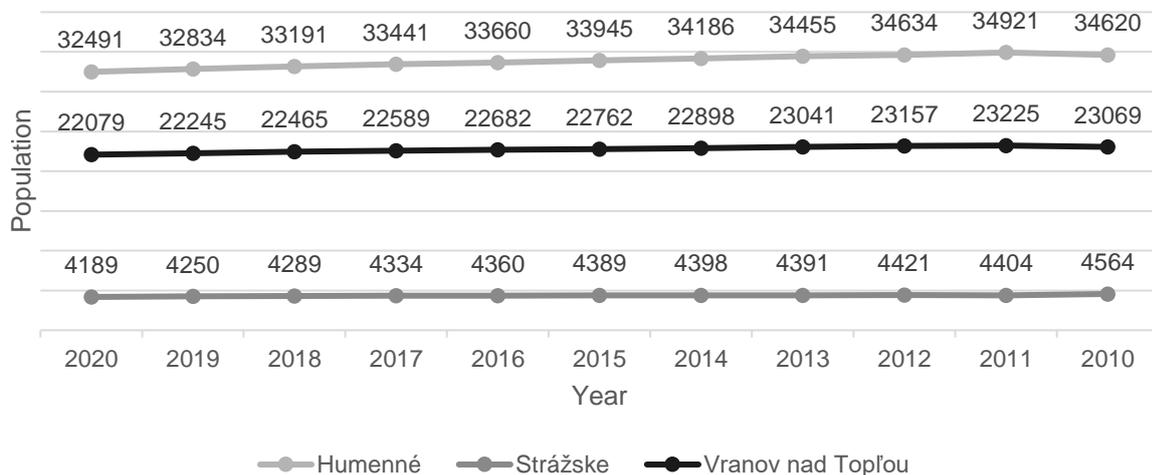
1. Woods, steep terrain –urban wilderness with overgrown trees and shrubs,
2. Public green spaces – greenspaces around public amenities, neglected public greenspaces, urban fallows,
3. Accompanying greenery – around railways, roads, rivers, and local streams,

4. Residential greenery, community gardens, querilla gardening – greenspaces, on housing estates, vacant lots in compact structure of single-family dwellings,
5. Multifunctional park – areas of industrial brownfields and neglected playgrounds suitable for non-traditional uses,
6. Town park – existing town parks.



Figure 3. Neglected park is adjacent to the entrance to the Chemlon area in Humenné. It was created with the building of Club for Chemlon workers. Nowadays, park with overgrown trees and shrubs serves as transit area, where people only pass by. (Source: R. Hajduková)

**Table 1. Population decline in model towns from 2010 to 2020. Source of data: ŠÚ SR 2021. (Zdroj: R. Hajduková)**



## 4. Results

Urban structure of model towns has significant imprints of redevelopment during socialism, when housing estates, public amenities and chemical factories were developed.

The model towns have plenty of green spaces, whether public, semi-public, or private. However, their quality is a problem, because green (especially grassy) areas are neglected and do not use the full potential of social and environmental benefits (See *Figure 3.*). In the best conditions are town parks and public green on town squares in Humenné and Vranov nad Topľou. The main problem are green spaces on residential housing estates and accompanying greenery around public amenities, which require redesign and finding functional use from which inhabitants and the urban environment will prosper.

The population in the surveyed towns has shown a slightly declining trend in recent years (See *Table 1.*) The towns had highest number of inhabitants between 2010 and 2011. Since then, the number is decreasing at the fastest pace in Humenné. This is mainly due to the outflow of skilled workers and young people to more prosperous cities and abroad.

### 4.1. Humenné

Humenné, situated in Eastern Slovakia is the economic and cultural centre of Upper Zemplín. From 1950 the city has almost quadrupled its population.

Since the establishment of Chemlon factory, the city image has dramatically changed. The great need to develop new housing estates led to non-conceptual design of town districts and the town as a whole. As the result, urban fabric is interwoven with lost spaces and brownfields that are disrupting the continuity of urban structure. The current green infrastructure has no concept and consists of town park, public greenery on town square and accompanying greenery that is mostly filling the space between buildings.

Most of the industrial Chemlon complex is in operation at present, but there are many neglected buildings and neglected green and paved areas. The buildings have the character of typical industrial architecture from 50s of last century and possibly require revitalization or demolition. The close location to the sports and recreational zone of the town (Sport hall, ice rink and swimming pool) has the potential for the park creation with the possibility of adrenaline sports as an extension of the sport zone.

Areas of residential greenery have the potential to create community gardens or guerilla gardening that could provide fresh vegetables for inhabitants and build the community.

The town square is a quality public space. However, it lacks secondary public spaces of the same quality within other parts of town. Areas of public green spaces have the potential to create small parks with workout areas or a multifunctional space for small public events to create local public spaces.

The potential network of green spaces (See *Figure 4.*) consists of multifunctional park on Chemlon complex area (if production ceases) and woods and steep terrain, public green spaces and residential greenery connected by the accompanying greenery of the railway, overpass and other roads, the riverbank of the Laborec River and the accompanying greenery of local streams.

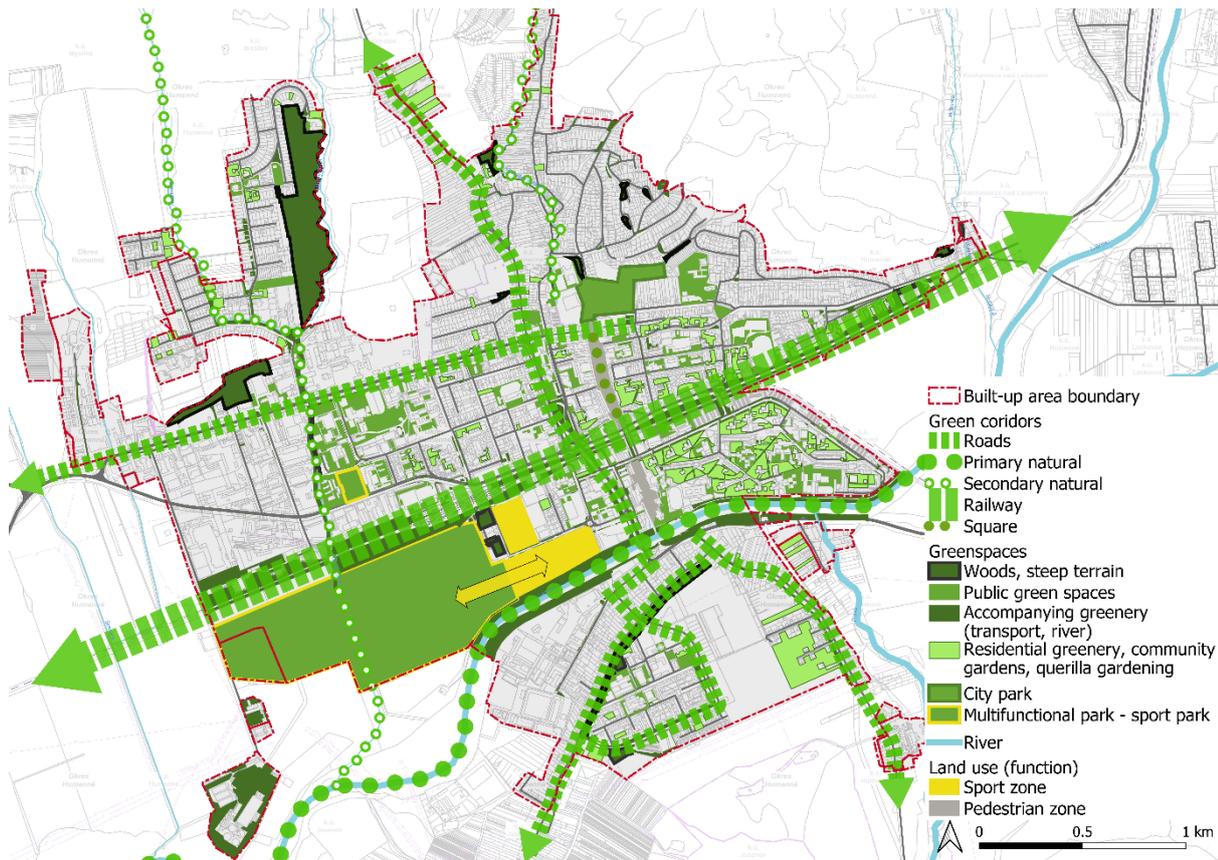


Figure 4. Potential network of green spaces on the brownfields in Humenné. (Source: R. Hajduková)



Figure 5. Manor-house in Strážske is adjacent to town park. The entrance and manor-house itself are neglected. (Source: R. Hajduková)

## 4.2. Strážske

Strážske, situated 10 kilometres from Humenné is town in the Michalovce district. Former village, where Chemko was established got the town status only in 1968. Since then, the town more than tripled its population. From the establishment of chemical factory, almost whole town was built, including the factory area that is far exceeding the town area. The urban structure has conceptual design, but public spaces and green spaces are in bad condition. The current green infrastructure consists of town park to which is connected alley along the main road.

On the one hand, there are neglected and unused industrial areas and on the other hand, an urban structure dating from the period between the 50s and 80s of the 20th century, which necessarily requires revitalization. The Chemko complex is located next to the city but is not an integral part of it. It is bounded with a railway from east and forest from west side. Chemko is suitable for experimental use due to its large area, which requires a combination of several functions. Other industrial brownfields in urban area have the potential for turning into multifunctional or sport park as an extension of the sport zone.

Areas of residential greenery have the same potential as in Humenné, but in smaller extent.

The town square is greened, but the trees are overgrown and in a bad condition. Existing town park with manor-house (See *Figure 5.*) could be supplemented by smaller public green spaces closer to the inhabitant's homes.

The potential network of green spaces (See *Figure 6.*) consists of multifunctional parks, public green spaces and town park, residential greenery connected by the accompanying greenery of railway, roads, and local streams.

## 4.3. Vranov nad Topľou

Vranov nad Topľou is situated 25 kilometres west from Humenné. Chemical factory Bukóza (formerly Drevokombinát Šariš) was established in 1951 in neighboring village called Hencovce. In 1970, villages Čemerné and Hencovce were affiliated to Vranov nad Topľou. Later in 1996, Hencovce separated from Vranov nad Topľou (*Vranov*).

Same as in Strážske, almost whole town was built since the establishment of chemical factory. However, the urban structure has low density and is interwoven with undeveloped areas due to terrain configuration. The current green infrastructure consists of public greenery on town square and abovementioned undeveloped areas overgrown with trees and shrubs. There is lack of public greenspaces due to high proportion of single-family dwellings in urban structure.

Considering the location of Bukóza area, the potential park created here could be the best for nonconventional uses such as adrenalin sports and URBEX. In the town are some larger neglected areas suitable for creating a multifunctional or sport park and enlarging the sport zone in the town.

Areas of residential greenery have the same potential as in Humenné and Strážske, but in lower extent.

The town square was revitalized and has a cultivated public greenery. However, there is no town park, but the town is interwoven with smaller public green spaces where smaller parks or public green spaces could be created.

The potential network of greenspaces (See *Figure 7.*) consist of multifunctional parks, public green spaces and smaller parks, residential greenery and woods connected by the accompanying greenery of the railway, roads and the riverbank of Topľa River and accompanying greenery of local streams.



Figure 6. Potential network of green spaces on the brownfields in Strážske. (Source: R. Hajduková)

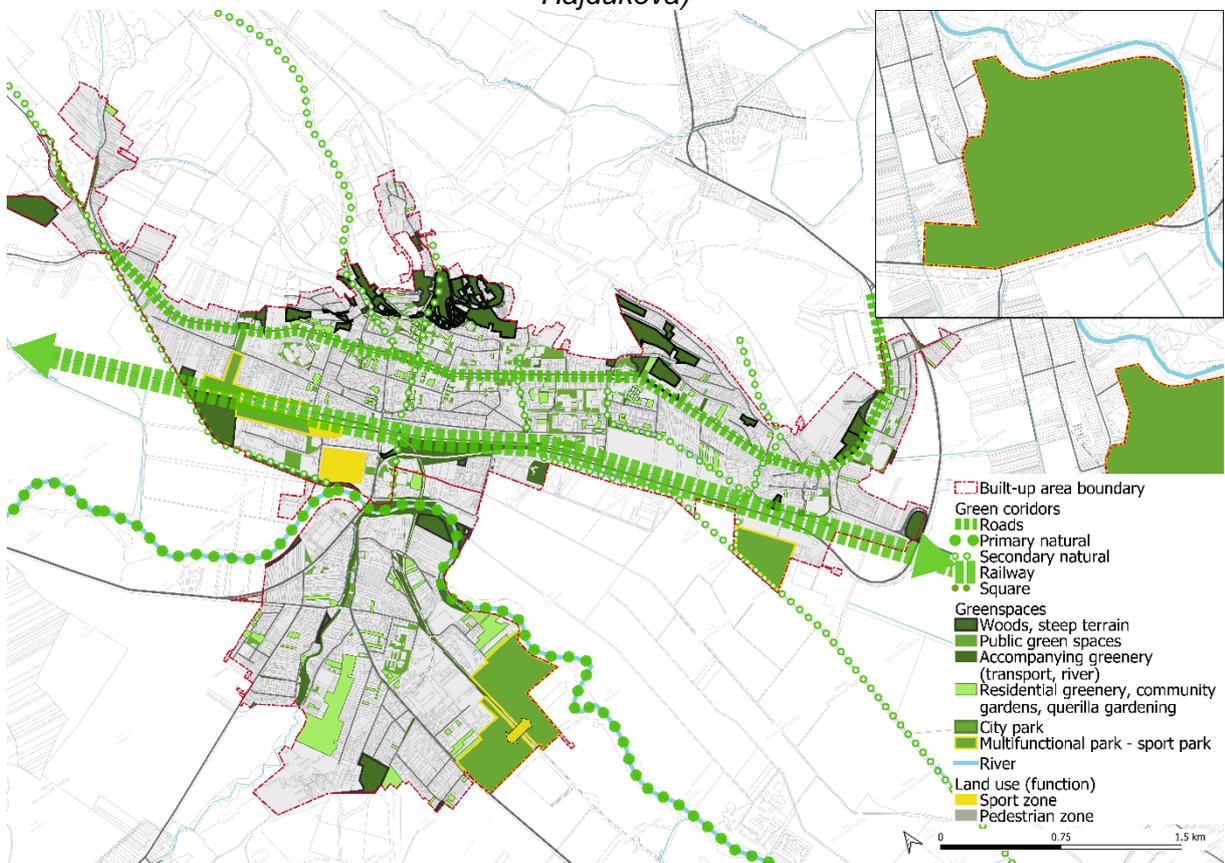


Figure 7. Potential network of green spaces on the brownfields in Vranov nad Topľou. (Source: R. Hajduková)

## 5. Conclusion and discussion

The complete cessation of the production will be necessary in the future, so solutions must be sought for further development of chemical factory areas. They carry heavy environmental burdens, for which it will not be possible to transform them for new land uses within next decades (e.g. residential or public use). Due to the shrinking population new residential or commercial areas are not in demand, but the region could benefit from developing recreational and sport activities.

The mapping of the lost spaces and brownfields in the 3 case study towns confirmed theories from literature review, that turning brownfields into green infrastructure would be a sustainable solution for creating healthy and attractive environment for inhabitants.

A common problem of all towns are the neglected green spaces around public amenities and on housing estates, which have no benefit for urban environment and inhabitants. There is a great unused potential of lost spaces and brownfields suitable for urban greening. After their revitalization the towns could become healthy and attractive places for living and tourism, leading to the re-densification.

Humenné, as the centre of Upper Zemplín, has the greatest potential for the transformation of brownfields into green spaces because it is the most economically strong and attractive place to live among the 3 case study towns.

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# Measuring the Architectural Experience: Comparing the '50s and '70s using Urban Walking Tours

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## ABSTRACT

*This study proposes a new methodology to measure the architectural experience perceived by locals by analysing and comparing geo-tagged photography taken by participants during guided walking tours. A comparison of two socialist housing estates in Budapest built in the 1950s and in the 1970s will be conducted to investigate which elements of the built environment inspire people to take photos of, and therefore which neighbourhood is more relatable for visitors. The lack of decorative architecture, such as we can see in prefab block housing areas, seems to alienate people from the built environment. Meanwhile in the early '50s housing estates were constructed in a more human scale in socialist realist style, where decorations were mandatory. The architectural heritage of the socialist era is often confused and misunderstood, so this study hopes to advance the public discourse, and give new tools for designers to understand the relation of citizens to the built environment. After analysing the quantity, geographical location and content of the photos taken during walking tours the data will be cross-referenced with the previously mapped POIs and itinerary, leading to the identification of key elements of housing estates that contribute to the urban experience of visitors.*

## KEYWORDS

*socialist realism, housing estates, walking tours, geo-tagged photography*



Figure 1. Socialist realist buildings of Kerepesi housing estate (Source: author)

## 1. Introduction

We perceive different parts of the built environment as we walk in cities based on a multitude of factors. A tourist for example often looks for elements of architecture that might seem familiar from their hometown, while locals don't necessarily notice the same details. The spatial parameters of the urban setting, such as the ratio of distance between buildings and their heights, or the quantity of green space has great effect on how we perceive a neighbourhood. Similarly, the architectural quality, the level of details and quantity of decorations also contributes to our experience.

In today's technologically advanced world people can capture what they find interesting instantaneously via their smartphones. This paper proposes a new methodology for measuring the experience one can get of the built environment, by means of collecting data from visitors during architectural walking tours. Geo-located photos taken by participants will be analysed based on location and content, supplemented by the results of a questionnaire, which will yield quantifiable data to compare different architectural environments. For the purposes of this paper a case study is effectuated in two socialist housing estates of Budapest. The comparison of the socialist realist Kerepesi Street housing estate built in the 1950s and the socialist modernist prefab Havanna housing estate built in the 1970s will be the focus of the case study.

Different levels of architectural stimuli can be found on a historic façade or on a prefab block housing apartment building. The hypothesis of this paper is that local visitors will appreciate more the decorative built environment of the 1950s and will find more visual inspiration worth taking photographs of than in socialist modernist mass housing neighbourhoods, even though socialist realist style is stigmatised in the public discourse.

## 2. Socialist housing estates of Budapest

As most cities in Central-Eastern Europe (CEE) Budapest has an abundance of socialist architectural heritage, but since the change of the regime in 1989 it still struggles with city branding as a post-socialist city (Puczko et al., 2007). The different

periods of post-war architecture are often confused even by locals, simply entitling everything built in that era as *socialist*, whereas several periods can be distinguished. Furthermore, the politically stigmatized era's constructions are usually associated solely with prefabricated mass housing estates, where almost a third of the population of Budapest lives (KSH, 2014).

In the framework of this research housing estates built in the 1950s and in the 1970s will be analysed. The construction of housing estates became increasingly necessary after the destructions of the second world war, especially in the case of Budapest, where more than 80% of buildings were damaged or destroyed (Ungváry, 2005) during the Siege of Budapest in the winter of 1944-1945. Following the "big architectural debate" of 1951 socialist realism became the mandatory style for planning institutes. Even though the phrase "socialist in content, national in form" was rather difficult to apply to architectural design, housing estates represented a more sober version with calm volumetry, simple facades and rational urban planning (Preisich, 1969). While socialist realism officially existed in Hungary only for a few years in the early 1950s, it became the synonym for socialist architecture in general among laymen in Hungary. Since the word is stigmatized, overly politicized and used as a demeaning adjective it is quite difficult to talk about the style's real characteristics, especially in the context of architecture.

After the destalinisation of the late '50s the emphasis turned to mass production of housing estates, specifically to the use of prefabricated block housing. By the 1970s the soviet "house-factory" technology had been perfected in terms of productivity, and in the second 15-year plan the construction of more than a million new housing units were targeted (Paládi-Kovács, 2020). Buildings from this period were usually 10-stories high, and followed a strip pattern, creating vast urban landscapes.

Similarly to public spaces constructed in these two periods (Kissfazekas, 2013), the housing estates of the '50s and '70s differ in their contextuality and how locals can relate to them. The buildings will stay, so in order to generate sustainable urban areas (Benko, 2015) it is important that locals can relate to these housing estates, which is especially problematic in the case of prefab housing (Benkő, 2012).



Figure 2. Old photos from the time of construction of Kerepesi in 1955 (left) and Havanna in 1979 (right) housing estates. Archival photographs are shown during the walking tours (Source: Fortepan / Samodai József Zuglói Helytörténeti Műhely and Fortepan / FŐFOTÓ)

### 3. Local alternative walking tours

Global tourism has been growing in the last decades and cities receive a never-before-seen number of visitors every year. When tourists arrive in a new location, they often participate in guided walking tours, especially in tourist-historic cities, to get an

overview of the city's cultural heritage. The research of guided walking tours in academic studies became more popular in the last decades (Black et al., 2019; Chen et al., 2018; Zillinger et al., 2012), and there are still many aspects of this popular activity to be explored.

In recent years alternative walking tours have seen a rise in popularity around the world, as tourists are seeking more authentic and off-the-beaten-path experiences, during which they are able to see the city from the point of view of locals. These alternative tours offer thematic approaches to understand the city, such as architectural styles, gastronomy, historical events, literature and so on. A considerable number of academic papers focus on the role of the guide (Galí & Camprubí, 2020), how they act as an interpret for local cultural heritage (Weiler & Walker, 2014), and how they can contribute to the experience of the tourist in terms of authenticity (Reisinger & Steiner, 2006), which is an important factor in alternative tours. This new type of tourist activity also helps to scatter tourist concentrations of historic city centres (García-Hernández et al., 2017). Alternative walking tours take participants to previously unexplored areas of the city, often to areas which are stigmatized (Hoogendoorn & Hammett, 2020) in order to change the perception of the neighbourhood.

An interesting aspect of these alternative tours is that they are also popular among the locals of the city (Diaz-Soria, 2017). Local inhabitants like to discover their own neighbourhoods and in order to do so they participate in experiences originally designed for tourists (Richards, 2017). In Budapest, Hungary more than a dozen alternative walking tour companies were created in the last decade who focus on providing authentic experiences for tourists and locals as well (Rátz, 2017) during which participants are highly involved in the customisation of the tour, being encouraged to contribute to the tour with questions and stories of their own (Zatori et al., 2018).



Figure 3. Walking tours at Kerepesi (left) and Havanna (right) housing estates. (Source: left: Anna Szemerey; right: Gergely Hartmann)

#### 4. Research methodology

In order to be able to quantitatively and qualitatively compare the architectural experience of a visitor in a 1950s and 1970s mass housing neighbourhood, this research proposes a new methodology using walking tours to collect data. Firstly, geo-tagged photos taken by visitors during architectural tours will be analysed based on location relative to the stops of the tour. Then a content analysis of the photos will be done to determine the subject of interest of the visitors. Lastly, the results of a supplementary questionnaire filled out at the end of each tour will be presented. The analysed data will provide an opportunity to quantifiably compare the two sites based

on visitor experience. The certain elements of the methodology are explained in more detail in the following sub-sections.

#### 4.1. Walking tours in socialist housing estates

For the purposes of this research paper two new thematic walking tours were designed and led several times in Budapest by the author (Figure 3). Two housing estates were chosen to serve as the location for the research. Sites needed to be large enough to be able to host a two-hour walking tour and it was important to have enough POIs, architectural content and urban legends that could be tied to the location in order to create a walking tour.

The *Socialist Realism x Housing Estates* tour's location was in Kerepesi Street housing estate, built between 1954-1961. It is one of the biggest of its kind in Budapest, which is practical for the location of the two-hours walk as most of the other 1950s estates are scattered around the city and are smaller in size. The Kerepesi housing is a perfect location to show the urban and architectural elements of socialist modernism (Böröndy, 2019). Planned in 1953 by János Brenner, Ernő Heim and Sándor Fülöp, the massive urban layout also reflects socialist ideology in its form, such as symmetry and meandering layout with *cours d'honneurs* (Kissfazekas, 2020) and in its functional aspects as well (Ferkai, 2005). The design of the buildings by Zoltán Légány, Attila Kun and Lajos Schmidt was also completed in 1953, complemented by more than a dozen artists' work: building sculptures, mosaics in entrance halls and iconic statues in the courtyards. Furthermore, the Kerepesi Housing estate is under consideration to be added to the list of protected buildings and urban blocks by the Municipality of Budapest.

The *Socialist Modernism x Housing Estates* tour's location was more difficult to choose, as in Budapest there are numerous estates from the period and each is unique in its own way. The Havanna housing estate built between 1977-1983 in the XVIII. District of Budapest was chosen for several reasons. Firstly, the planner of the estate is Csaba Virág, a renowned architect of the late 20<sup>th</sup> century, mostly recognised for his innovative design of public buildings. Many of his buildings are still controversial, and two of his buildings were destroyed in the past few years, one of which was the National Power Dispatch Centre designed in 1979, located in the Buda Castle. Having this controversial architect as the planner of the Havanna Estate provided the opportunity to further contextualize the architecture and design process (Józsa & Kulcsár, 2014) of prefab block housing. Secondly, "the Havanna" has a very dreary reputation. During walking tours, it is also common practice to take visitors to neighbourhoods considered unsafe in order to destigmatize them (Frenzel, 2014). And lastly, a new contemporary addition can be found in the estate. The new market opened in 2020, following a trend of adding contemporary public buildings in large housing estates (Benkő et al., 2021). The Havanna Market got very positive reviews in the press, and during the tour provides the opportunity to show alternative solutions for mass housing rehabilitation projects.

The tours were organised by KÉK – Hungarian Contemporary Architecture Centre, a local NGO from Budapest founded in 2006 by young architects and urbanists whose primary goal is to broaden the public discourse about the built environment (KÉK, 2021). They represent a professional side among alternative walking tour organisers with all their tours led by architects, and by presenting themes such as urban rehabilitation, brown field industrial sites and architectural styles, consequently the theme "housing estates" was easily integrated in their programs.



Figure 4. Map of Budapest with the positions of Kerepesi housing estate (above) and Havana housing estate (below) (Source: OSM, author)

## 4.2. Geo-tagged photography

Since the technology in photography has developed massively in the past decades, and moreover with the appearance of the smart phones, tourists and visitors tend to capture every experience they participate in. They do so in order to make memories more permanent and to create proof of their visit (Urry, 1990) and also to be able to share their experience with others via social media channels (Munar & Jacobsen, 2014). This phenomenon is researched in tourism studies and a multitude of academic papers focus on the content analysis of these photos (e.g., Garrod, 2008; Pan et al., 2014). In a way the possibility to capture the moment instantaneously and without limit with our phones creates the opportunity to analyse John Urry's (1990) infamous *Tourist Gaze* in new ways.

Furthermore, a rather new feature in smartphones are geo-localisation services, which can log where the picture was taken with GPS coordinates (longitude and latitude) in the picture's EXIF data. In the past two decades tracking technologies developed rapidly and an increasing number of academic studies focus on the usage of different tracking technologies in measuring tourist space usage (Shoval & Ahas, 2016), subsequently several research papers in tourism studies also focus on analysing geo-tagged photography (e.g., García-Palomares et al., 2015; Gede & Kádár, 2019; Kádár, 2014).

Participants of the walking tour were asked to take photos with their smartphones with geo-localisation option turned on during the tour. Instructions only included the minimal information, such as how to turn on geo-localisation and where to send the photos afterwards. Detailed information about the ongoing study and the purpose of the collection of geo-tagged photos was only given at the end of the walking in order to avoid influencing participants before taking the photos in their own usual habit.

## 4.3. Quantitative analysis of geo-tagged photos with QGIS

The photos received after the tours were not sorted, nor manipulated, therefore they could reflect what the visitor deemed interesting enough to capture in the moment. Geo-tagged photos were imported to QGIS software as points. Previously the itinerary of the walking tour and the planned stops were created. A buffer zone of 20 meters radius around the stops was generated, and photos that were taken inside the zone were counted. Via this method a percentage is calculated that shows if participants take photos where the walking tour stops are, or if they find enough architectural stimuli in between the stops as well to capture with their camera. This analysis provides an

opportunity to compare the two sites, based on the number and location of the photos taken.

A content analysis of the pictures taken by the participants was also conducted, to identify key elements of the built environment that catch the attention of the visitors in each location. The following four categories were defined to sort pictures (Figure 5): *Urban landscape*, *Building*, *Architectural detail or element* and photos taken of the *Group of participants*.

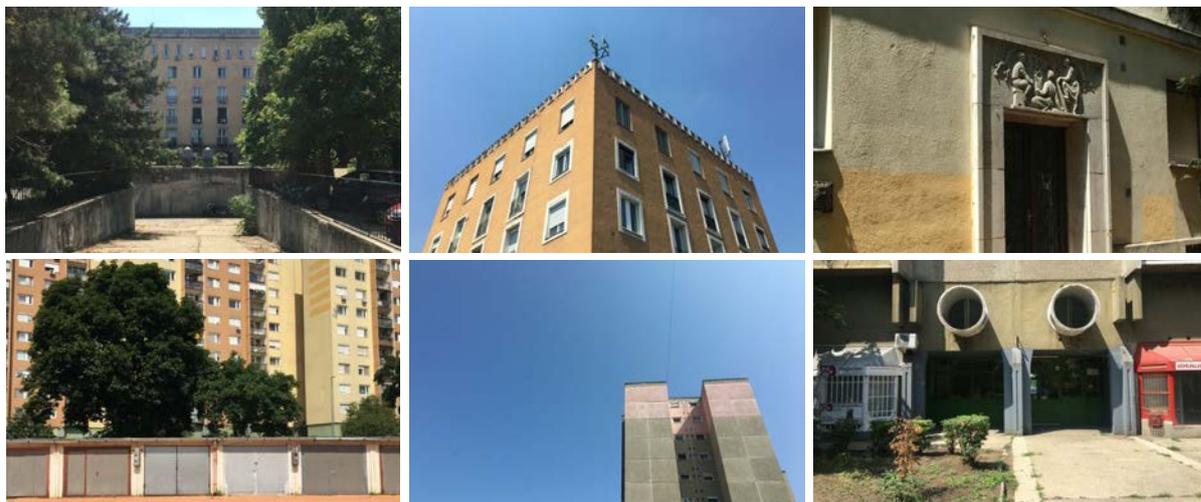


Figure 5. Photos of Kerepesi (above) and Havanna (below) housing estate. Photo categories from left to right: urban landscape, building, detail (Source: author)

#### 4.4. Qualitative analysis of the architectural experience base on questionnaire

A questionnaire was created to get more information about the participants and their habits. Answers were provided after the end of the tour on site, the questionnaire was available via QR-code on smartphones. Certain questions were based on a 1-5 opinion scale, 1 being the least and 5 the most agreeing with the question or statement, while other questions had multiple choice answers. Questions were divided into four categories: general walking habits and previous familiarity with the site; photo taking behaviour during the tour; impact of the tour on the connection to the neighbourhood and the built heritage; personal and demographic information

The result of the questionnaire provides a deeper look into the profile of the participants and creates further indicators for the measurement of the architectural experience.

## 5. Data analysis and results

### 5.1. Comparing the two itineraries

The two itineraries of the walking tours were newly developed for the purposes of this research. There were no official walking tours organised beforehand to Kerepesi housing estate nor Havanna housing estate by any companies in Budapest. Both sites proved to be interesting in terms of architectural, historical and intangible content, such as urban legends, therefore a walking tour of two hours was possible to organise. Some topics were mentioned in both tours, such as the topology of housing estates in Hungary in the 20<sup>th</sup> century.

In the Kerepesi housing estate a total of 12 stops were planned (Figure 6). Topics included the presentation of the historical context, a general overview of socialist realist architecture with in-situ examples of decorative elements and the artwork of the era. Site specific topics, such as “Bulgarian gardening” were also described.

In the Havanna housing estate a total of 13 stops were planned (Figure 6). Topics of the tour included the general overview of the historical context, the urban planning and architectural typologies of prefab mass housing, and the present problems of housing estates from the ‘70s. Site-specific topics such as newspaper headlines or the presentation of the architect Csaba Virág were also included in the tour.

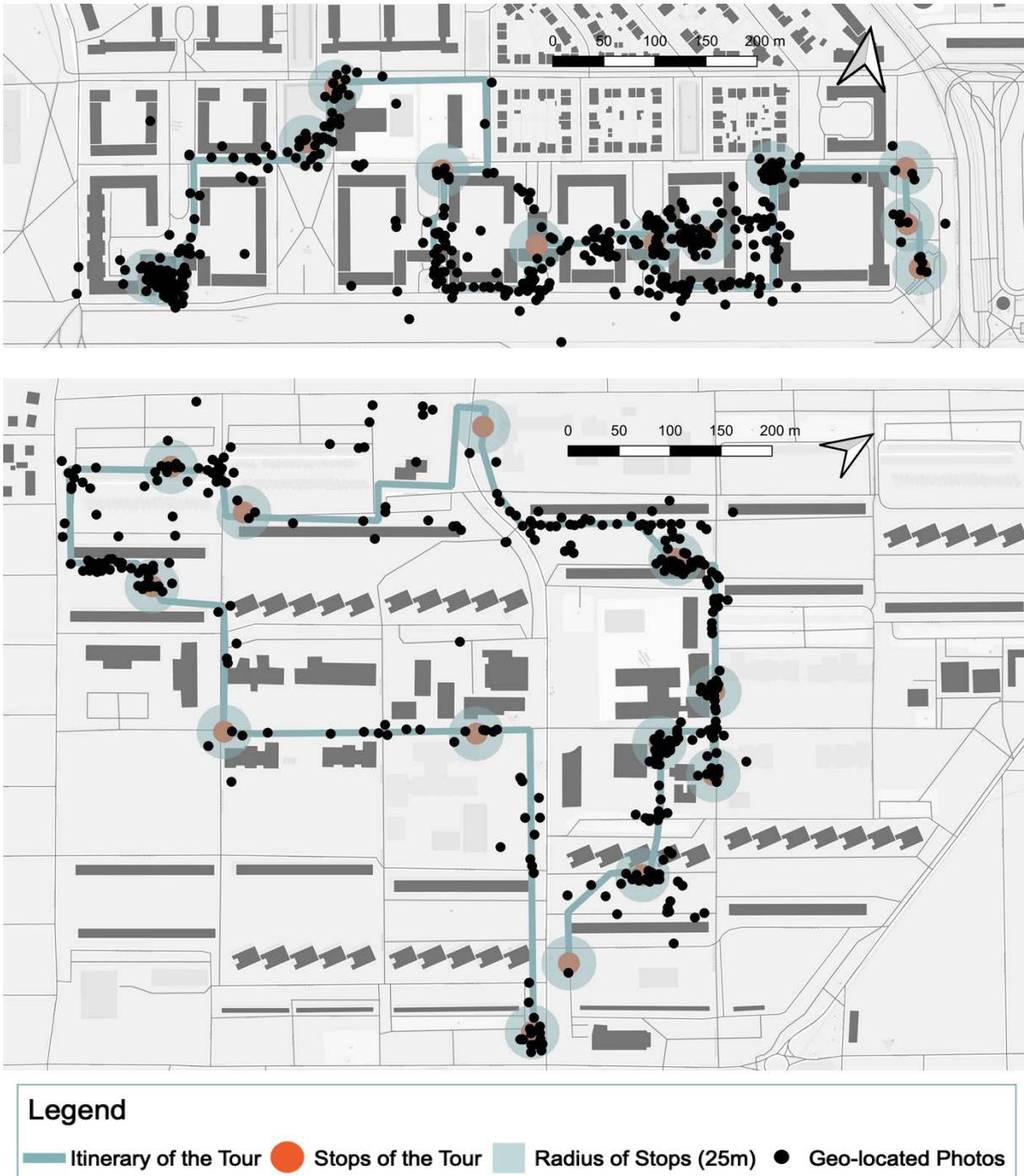


Figure 6. Itinerary of the walking tour in Kerepesi housing estate (above) and Havanna housing estate (below), with geo-tagged photos (Source: author)

## 5.2. Measuring the visual experience with geo-located photos

A total of 93 people took part in the two tours during the 3-3 occasions for each site, out of which 28 agreed to participate in the study. More interest was shown in the case of Kerepesi housing estate (Table 1). They took a total of 901 pictures in the two sites. These photos were then placed on maps (Figures 6) using the GPS information stored in the picture. The fact that the average number of photos taken during the walking tour (Table 1) was higher in the case of Kerepesi housing estate (36,9 photos) than in Havana housing estate (27,5 photos) shows that visitors could relate better to the built environment of the first site.

During the tour in Kerepesi housing estate 62% of photos were taken where the guide stopped for explanations, while in the case of Havana housing estate only 44%. This data shows us, that visitors found many photo opportunities in socialist realist details, while in Havana the monotonic environment did not prove to get more inspiring even with the narration of the guide. If we compare the two maps visually, it is evident that photos are more evenly distributed between stops in the case of Kerepesi housing estate. Most photos during the Kerepesi tour (16%) were taken at the last stop, where a great mosaic wall was presented in the entrance hall of a building, while no favourite photo spot can be observed in the Havana tour.

**Table 1. Number of photos taken during the walking tours (Source: Author)**

	No. of tours	Total no. of participants	Taking photos	Total no. of photos taken	Average no. of photos taken	In radius	Out of radius
Kerepesi	3	60	14	516	36,9	321 (62%)	195 (38%)
Havana	3	33	14	385	27,5	169 (44%)	216 (56%)

## 5.3. Content analysis of the photos and results of the questionnaire

The content analysis of the photos was done manually. The 901 pictures were evaluated based on the predetermined categories mentioned in chapter 4.4. The comparison of the two sites is done by averaging the number of photos in the given categories by the number of participants, who took photos in each tour (Figure 7).

Photos depicting *urban landscapes* were more popular in the case of prefab mass housing (41% in Havana and 23% in Kerepesi relative to the total number of photos). Photos in the *building* category were also more popular in proportion of total photos taken in the case of Havana housing estate (33% vs 23%). The two major differences were in the case of *details* and *group photos*. Architectural details of facades, photos of entry ways and photos of artistic elements are much more represented in the case of the socialist realist site, where 39% of photos were taken of such details, while in the case of Havana this number is only 22%. This shows that the architectural elements of Kerepesi housing estate inspired people more to take photos. The group photos show similar results, in Havana only 14 photos were taken of the group, while in Kerepesi nearly 16% of photos were group shots.

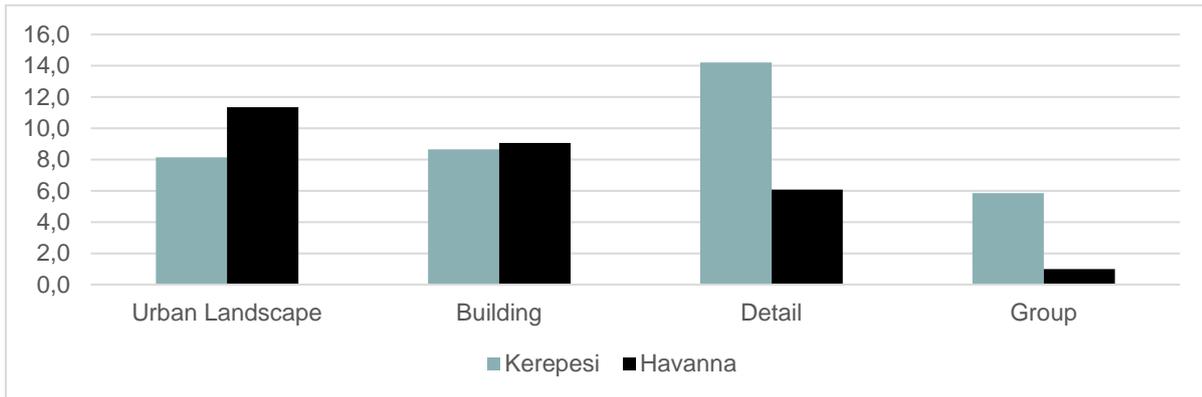


Figure 7. Average number of photos taken by participants in each category in Kerepesi and Havanna housing estates (Source: author)

#### 5.4. Results of the questionnaire

The questionnaire was filled out by 43 participants, 26 after the Kerepesi tour and 17 after the Havanna tour. 49% of them have already participated in guided walking tours when abroad, and 88% have already taken part in such an experience in Budapest. Participants marked on average 1,74 (on a scale of 1-5) as to how frequently they have visited the site of the walking tour, with more than half of them never visiting at all before. As to the question how much they felt like tourists during the experience the average answer was 3,51 (on a scale of 1-5), even though most of them (3,79) walk at least 20 minutes daily.

53% of participants marked to take photos during the stops, 44% right after the guide finished talking at a stop, and 63% to take photos when walking in-between two stops. The most popular subject of a photo based on the questionnaire are architectural details (79%), followed by pictures of the entire building (53%). But only 7% marked to take photos of the group. These percentages correlate and therefore supports the findings of the content analysis.

On a scale of 1-5 participants marked above 4 on average if they like the neighbourhood better after the tour, if they value the built environment better than before and if they discovered new details in the buildings. Almost all answers responded 5 if they think it is important to get to know the built environment.

The average participant is female (67%), between the age 26-35 (35%) has a Master's degree (37%) and almost certainly lives in Budapest (91%), but not in the neighbourhood.

## 6. Evaluation and Conclusion

The data collected during the walking tours give new insight into how participants perceive the built environment. By measuring where photos were taken during the tour it became possible to compare two housing estates built in different eras. The number of participants shows there is more interest among locals towards socialist realist housing estates than prefab housing areas. It can be seen in the results, that socialist realist architecture provides more (Table 1) and better photo opportunities, especially when it comes to architectural details (Figure 7), and the photo taking habit of participants is more evenly distributed along the itinerary of a walking tour (Figure 6).

An additional result of the study is a feedback for the tour organisers and the guide. By analysing the location and quantity of photos taken during the tour it is

possible to later modify the itinerary in order to provide a (visually) more interesting experience for future participants by changing the location of certain stops.

When it comes to the perceived quality of the built environment walking tours are a practical way of measuring the architectural experience. In the case of socialist architecture Budapest still has to find new methods to valorise the vast heritage of the era. Particularly socialist realist architectural heritage is underrated among locals despite its qualities. Furthermore, prefab mass housing estates became an inseparable part of the city, and their future depends very much on urban and architectural quality.

Academic literature about walking tours focuses dominantly on tourists, but as this research shows there are still many aspects of the subject that can be further explored if local walking tours are included. With the methodology described in this study, it is possible to conduct even deeper examinations of how locals perceive the built environment, and what they find interesting, which in turn can benefit local authorities and planning agencies during urban renewal programs.

This case study aimed to measure architectural experience during walking tours in two housing estates built in different eras of the socialist period. Results not only show that the architecture of the 1950s might be more interesting, but also prove that both eras left us with a built heritage that can, and should be valorised.

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# Planning Urban Tourism Infrastructure in Post-war Socialist Slovenia: the Case of City Hotels

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## ABSTRACT

*Tourism in Socialist Yugoslavia was redefined in the period after the Second World War as workers were granted the right to paid vacations. This represented the basis for the development of the country's tourism industry. While Yugoslav tourism was mostly concentrated by the Adriatic Sea and the Alpine Slovenia, cities gained interest for their cultural appeal and as destinations for business/conference tourism. Furthermore, the state saw cities also as a showcase of the country's economic and societal success that could be exhibited to foreign and domestic visitors. Thus, in the 1950s and 1960s, tourism infrastructure and public facilities (such as hotels and other accommodation facilities, convention centres, sports halls, cineplexes, museums, and public swimming pools) were developed in socialist towns for both locals and visitors. This investigation focuses on hotels as accommodation infrastructure in six Slovenian cities. We have analysed the characteristics of the hotels as they were built and their main construction, outlooks, and management adaptations. Especially, we are interested in their current functions and position in their respective city structures and with regard to their place within tourism infrastructure.*

## KEYWORDS

*urbanism, urban tourism, accommodation infrastructure, hotel, socialism, Slovenia*



Figure 1. Historic photos of selected hotels: hotel Celeia, Creina, Lev, Paka, Park NG and Slaviya (Sources: EH Hoteli, Vodopivec and Žnidaršič; Rentoni, Kamra; Arhiv MOV, Zmaga)

## 1. Introduction

Tourism in Socialist Yugoslavia was, similar to the development in many other European countries, redefined in the period after the Second World War (WWII). Granting workers a right for paid vacations formed the basis for the development of the country's 'tourism industry' (Taylor & Grandits, 2010). While Yugoslav tourism was predominantly focused on the Adriatic Sea and Alpine Slovenia, cities also became more appealing as tourism destinations in the 1960s and 1970s. This was mainly due to the development of transit, and the concomitant rise in business and conference tourism, whilst increased motorisation also enabled daytrippers to visit cities both during the week and at weekends. Apart from increasing the quality of life of inhabitants, the state recognised tourism activities as representing an increasingly important economic sector (Banaszkiewicz et al., 2017; Yeomans, 2010) and thus it supported investments into tourism infrastructure on a large scale via the 'republic

secretariat for the economy'. Similar approaches to tourism planning were visible in other countries such as Czechoslovakia (Kučerová et al., 2020).

Urban tourism was (and still is) considered much less seasonal than seaside and alpine tourism (Pirjevec, 1989). In the 1950s and 1960s, investments into urban tourism resulted in a variety of infrastructure being built including hotels and other accommodation facilities, convention centres, sports halls, cineplexes, museums, and public swimming pools. Altogether, the number 'accommodation beds' increased between 1960 and 1985 by 150%, (on average 2.000 beds per year). This rate of growth is higher than that currently exhibited within the country where, from 2014 to 2018, the number of 'new' accommodation beds increased by less than a thousand (ECM, 2019). Investments within, and increased international collaborations between cities resulted in the phenomenon whereby in 1985 16% of all foreign visitors to Yugoslavia visited urban centres (Gosar, 1989).

Figure 2 shows that since 1960s the urban tourism importance of most cities has not changed; their share of registered bednights has even slightly decreased. However, the share of bednights in Ljubljana has more than doubled, from 5% in 1964 to 12% in 2019. According to the categorisation of the tourism destinations (*Figure 3*), thermal spa destinations have witnessed the most constant increase, as they have a higher share of domestic visitors. In all urban tourism destinations large development leap happened after the year 2000 (SORS, 2021).

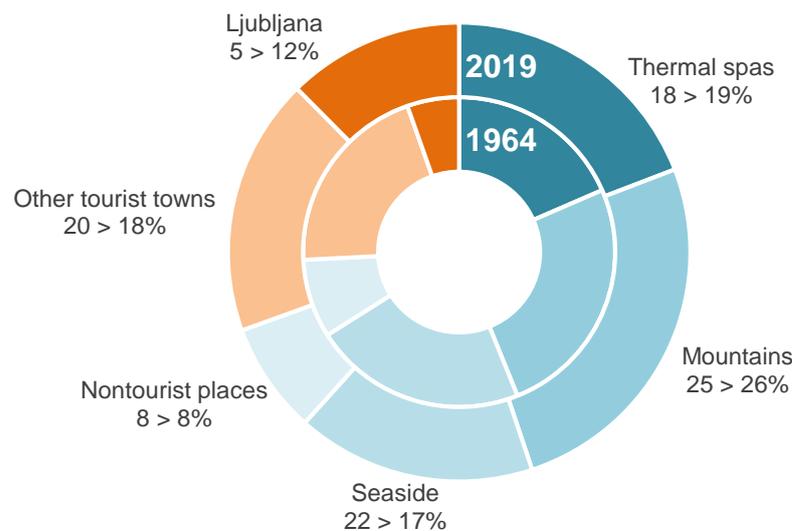


Figure 2. Share of tourism bednights recorded in Slovenia by type of tourist destination in years 1964 and 2019 (Source: Statistical Office of Slovenia)

This paper focuses on city hotels built in Slovenia between the end of WWII and the close of the 1960s (*Figure 1*). The paper addresses how tourism infrastructure was planned in Slovenian cities after WWII, how city hotels were managed up until today, and assesses their current state of preservation. Further, urban tourist destinations are shortly presented and assessed by their inclusion of modernist post-WWII heritage in their tourism image and offer. This is addressed in light of the recent increase in interest in post-WWII architectural and socialist heritage, as evidenced in both literature and social media. This trend is also evident despite the efforts of many post-socialist and post-communist countries to suppress their ties with previous regimes which has sometimes resulted in intentional alterations to buildings so as to hide their origins (Light, 2001). Buildings from that period are under threat of neglective renovations also due to lacking general appreciation, heritage protection or renovation prices.

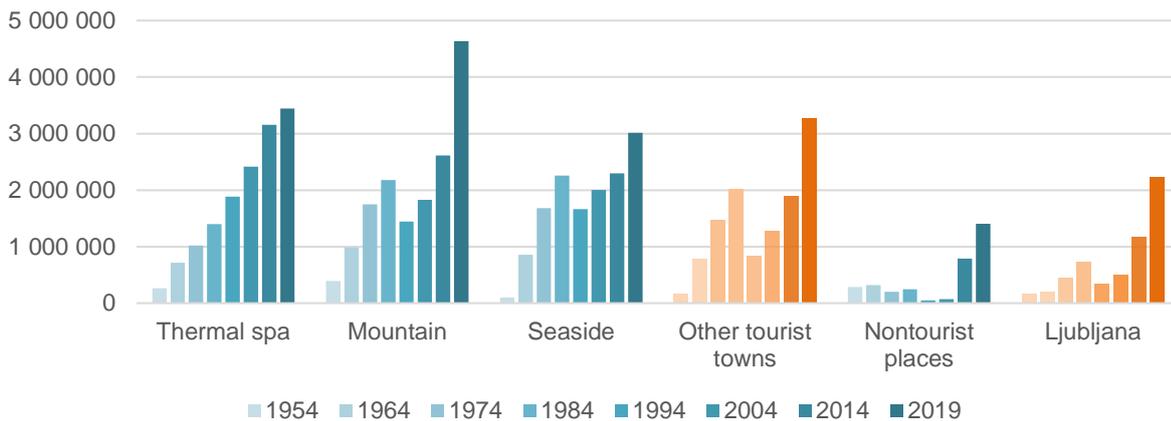


Figure 3. Tourism bednights recorded in Slovenia between 1948 and 2019 by type of tourist destination (Source: Statistical Office of Slovenia).

## 2. Methodology

Six selected Slovenian cities were chosen. They are the four largest cities: Ljubljana, Maribor, Celje and Kranj (cities with more than 30.000 inhabitants), and the cities of Velenje and Nova Gorica which were built in the period after WWII. The inclusion of the latter enables insights to be garnered on how tourism was incorporated in newly planned cities. Selected cities were investigated via desk research and field inquiries. The desk research consisted of analysis of the local characteristics of urban destinations in period after WWII and now (e.g. prevailing industry and types of tourism), analysis of archival tourism development data, and analysis of statistical data pertaining to their performances with regard to tourism. To enable the identification of appropriate case study hotels, brochures, book and online sources were researched, and local tourism information centres were contacted.

Following the selection of case study hotels, field work was performed, during which observations were made of the cities as tourist destinations as well as the individual hotels. Information on the planning and management of the hotels was collected from online sources as well as via direct inquiries to the hotels. Our findings are presented in two tables (Table 1 and 2), and these present information on the main characteristics of the hotels at the time of their construction; the main changes in their use, management and structure; their current state/function; and an assessment of the preservation of the hotel's exteriors and interiors. In the subsequent discussion, we assess how the hotels perform in line with current urban tourist destination (management, performance, offer) expectations, how they address their built origins, and as well as how Slovenian cities (should) incorporate post-WWII cultural and architectural heritage into their tourism images and offers.

## 3. Tourism development in Slovenia after the Second World War

### 3.1. Urban destinations

Whilst cities have always attracted visitors and tourists, they have not always been perceived as destinations that have played a major role in Slovenian tourism. Up until 1954, data on tourism statistics was recorded only for Ljubljana, Maribor and Celje. Thereafter, however, more cities were included in statistical reports including: Kranj, Nova Gorica and Velenje. In seeking to develop themselves as tourist

destinations, cities mostly followed/relied on their main economic functions; Ljubljana (capital city, culture, convention venue, sport), Maribor (industry, sport, oldest wine), Celje (convention venue), Nova Gorica (regional centre and political representation), Kranj (industry), Velenje (industry and mining). Urban destinations in Slovenia recorded a stable number of tourists visits in the 1950s; thereafter, the number of overnight tourists stays started to grow more significantly in the 1960s. (See Figure 4.)

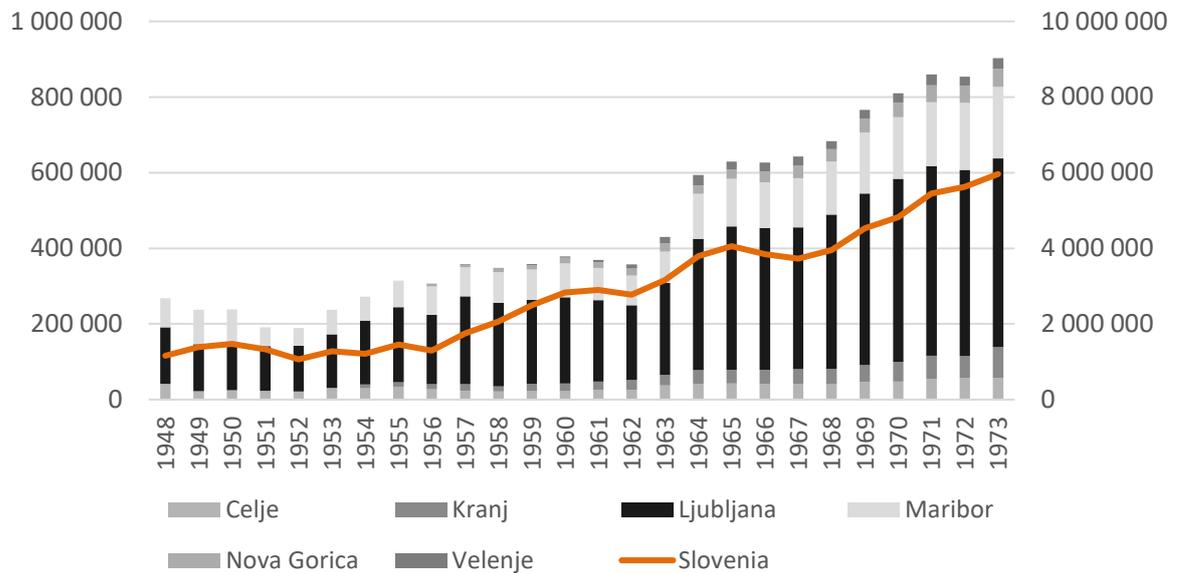


Figure 4. Recorded bednights in major Slovenian cities (left axis; in grey) and total bednights in Slovenia (right axis; in orange), from 1948 to 1973 (Source: Statistical Office of Slovenia)

Ljubljana, as the country’s capital and Slovenia’s largest city, has always been the country’s main urban tourism destination; for both cultural and business purposes. In the 1950s, urban and industrial development took off because of its new role as a federal state capital. Today, the city remains the main urban tourist destination in the country; it is a walkable and sustainable capital city with good facilities for cultural, leisure and congress tourism.

Maribor and Celje both started to develop as tourist destinations with the arrival of the railways at the end of 19<sup>th</sup> century, whilst rapid industrial development occurred in both cities after WWII. Maribor was one of the most developed industrial cities in former Yugoslavia and, until 1990, was regularly among the top 10 tourist destinations in Slovenia. After the independence of Slovenia, the local industry collapsed, and the number of tourists plummeted; it only regained its previous levels of tourism in the 2010s (Horvat, 2012) having combined its industrial heritage with specific foci on culture, gastronomy, wine, and sport (ZT Maribor, 2021).

Celje, Slovenia’s fourth largest city, is a centre for the metal and chemical industry, and also benefits from its hinterlands possessing a strong agricultural sector. Its rich cultural heritage, dating back to the Roman times provides excellent potential for the development of cultural, transit and business tourism (fair venue) (Krušič et al., 1995). The castle and renovated city centre are also attractive to one-day visitors. The period immediately following WWII was one in which much investment was focused on rebuilding those parts of the city destroyed by enemy bombing. Today, Celje is focusing its tourism image on the medieval heritage of the Celje counts, supplemented with art and culture, nature, sporting activities, and traditional events (TIC Celje, 2021).

The alpine city of Kranj is the Slovenian city that has experienced the fastest growth and urbanisation since the end of WWII (Pogačnik, 1996). The old medieval



city centre perched on top of a cliff and surrounded by two rivers has expanded into industrial and residential areas, and it is well connected to the south with Ljubljana as well as to the north towards Austria and Germany. Traditionally a centre of textile, electrical, food, and rubber industries, it also hosts international fairs (forestry, small business, interior and civil protection equipment); all have contributed to its development of a robust tourism sector (Krušič et al., 1995). In 1983 the core of the old city was proclaimed to be an historical and cultural monument. Its tourism focuses on attracting passing-tourists as well as the city's role as a starting point from which to explore nature and other attractions in the wider region. In its brochures (TCB Kranj, 2020), Kranj also mentions the marks which the modernist architects Plečnik and Ravnikar left on the city.

Velenje, the largest of Slovenia's two post-WWII newly built cities, was planned to support the area's extensive mining industry. In 1959 the modern city centre with its generous green areas was opened. Around the city square one can find municipal buildings, a hotel, a cultural centre, shops and other urban infrastructure. It was once visited mostly by business visitors as well as foreign politicians. It places its modernist heritage at the front of its image (Poles, 2013). Currently visitors are attracted to the city due to its renaturated post-mining landscape, many cultural and sport events, and various tours of its architectural and socialist heritage that are available (VisitSaleska, 2021)

Another newly built city, Nova Gorica was planned to replace the missing epicentre of the region, after Gorizia (Gorica) was awarded to Italy in the aftermath of WWII. The city was planned at the end of 1940s as a modernist city surrounded by greenery, but many of the initial ideas for its urban development were not realised through the decades of its construction (Pogačnik, 1996). The city, planned as a symbol of socialist ideas, has turned into one of the largest cities for gambling in Europe, and attracts visitors mainly from neighbouring Italy.

In recent years before the Covid-19 pandemic, the number of tourists in Slovenian cities was rising, yet Ljubljana remains the only city municipality among the 10 most visited municipalities in Slovenia. While the capital city recoded 2,228,000 tourist bednights in 2019, Maribor had 454,000, Nova Gorica 193,000, Kranj 121,000, Celje 74,000, and Velenje 29,000 registered bednights (SORS, 2021).

### **3.2. Selected city hotels**

We have identified nine hotels that were built between the end of WWII and the end of the 1960s in the selected cities. Information on most of them has been difficult to obtain, as such data does not exist it (hotels are not perceived to be of great general interest) or the data is not available to the public (e.g. ownership and management models). Most of the selected hotels were built as new accommodation facilities for the developing tourism industry; Hotel Orel is the only one that has been built as an extension to an existing hotel and Hotel Lev replaced the former guesthouse Pri Levu.. While Hotel Orel is located in the historic city centre, and hotels Paka in Velenje and Park in Nova Gorica (Park NG) are located in the centre of the newly built towns, the rest of the hotels are located on the edge of the historic city centres. The hotels are from seven to fourteen storeys high and offer between c. 50 and 200 hotel rooms. Most of them have been built using concrete and reinforced concrete, while two used brick (SMAS, 2021). They were planned as mid-price range hotels for various types of visitors and are categorized as 3- or 4-star hotels. (See Table 1.)

**Table 1. General information on case study hotels**  
(Sources: Babšek; Eurotas Hoteli; Ljubljana Tourism; Novak; SMAS)

Hotel name	City	Constructed	Storeys, rooms	Architect	Construction material	Category
Celeia	Celje	1962	9, 52	Janko Hartman	combination of materials	***
Creina	Kranj	1970	7, 87	Edvard Ravnikar	brick	****
Lev	Ljubljana	1964	18, 173	n.a.	reinforced concrete	****
Orel	Maribor	1969	7, 71	Adlof Baltzer	brick	***
Paka	Velenje	1959	9, 52	Stanko Rohrman	reinforced concrete	****
Park LJ	Ljubljana	1966	14, 215	n.a.	reinforced concrete	***
Park NG	Nova Gorica	1959	7, 82	Stanko Rohrman	brick	****
Piramida	Maribor	1949	8, 78	n.a.	reinforced concrete	****
Slavija	Maribor	1963	13, 146	Milan Černigoj	reinforced concrete	****

#### 4. Current state of the hotels

The case study hotels do not seem to pay special attention to their modernist heritage. Hotel Celeia is the only one that has its origin as part of its corporate image (Hotel Celeia – since 1962), whilst Hotel Paka has an exhibition in the hotel lobby. The rest of them provide, at most, limited information on their histories. This oversight is also reflected in the processes of renovations; none have preserved their original interiors, and most have lost details of their exteriors. Hotels Creina, protected as a national historic cultural monument, Park LJ and Piramida are the only ones with exteriors that have been predominantly preserved. Hotels Creina and Park LJ have both built extensions to the original buildings. Most popular facilities include restaurants (and bars), casinos (Lev and Park NG), a conference centre (Lev), a commercial bank (Creina) and a cinema (Paka). These additions to the exteriors of the hotels have generally not appropriately addressed the form or heritage of the original buildings (SOS Brutalism, 2021; Vodopivec & Žnidaršič, 2010). (See Table 2)

**Table 2. Current state of case study hotels** (Sources: Babšek; Bradač; Eurotas Hoteli; Ljubljana Tourism; Novak; SMAS; Kino Velenje; ZT Maribor)

Hotel name	Heritage status	Renovations	Extensions	Preservation of exterior	Preservation of interior	Management
Celeia	no	1999	restaurant	simplified facade	no	national chain
Creina	national monument	no	commercial bank	yes	no	independent
Lev	no	1997, 2018	conference centre & casino, 2000	no	no	local chain
Orel	no	2006	no	partially preserved	no	local chain
Paka	no	1998	restaurant & cinema, 1998	simplified facade	no	independent

Park LJ	no	2017	restautant	yes	no	international chain
Park NG	no	2007	casino, 2007	parially preserved	no	national chain
Piramida	no	1993	no	yes	no	local chain
Slavija	no	2012	garage, 2012 hotel, 2021	no	no	closed, 2001 offices, 2012

An interesting case is the (former) Hotel Slavija in Maribor. This once centre of social life for both visitors and residents of Slovenia's second largest city ceased to operate in 2001 and was, thereafter, left to decay for over a decade (Novak, 2013). In 2012 investors transformed the building into an office building, added two extra storeys, and a parking garage where the restaurant had previously been sited. In this process, the modernist interiors and exteriors of the hotel were erased, and the building was turned into a simple box of concrete and glass; similar has occurred in the case of Hotel Lev which was renovated between 1995 and 1997. With the recent rise of tourism in Maribor, the new owners of the building decided to invest in a three-storey hotel atop the parking garage; being built in 2021 (Bradač, 2021). This new hotel will be run as part of the same international chain as Hotel Park LJ. Among the rest of the hotels, two operate independently and others are part of either local or national hotel chains. Hotels were part of the privatisation process in the 1990s and are now mostly owned by private individuals (Celeia, Creina) or holdings/companies (Orel, Piramida, Park NG, Paka).



Figure 5. Hotels in current state. From upper left: Celeia, Creina, Lev, Orel, Paka, Park Ljubljana, Park Nova Gorica, Piramida, and Slavija (Photos: David Klepej)

#### 4. Discussion

In the period after WWII, Europe had to rebuild itself and new techniques and approaches had to be used to satisfy vast construction demands. These were applied not only to housing and infrastructure, but also to other sectors. Among these was tourism which started to grow as a consequence of new social rights, increased population and the reconciliation of international relationships. Hotels built in the 1950s and 1960s could use their heritage as an asset for creating new visitors' experiences. However, the case of Slovene hotels has showed that hotel owners' understanding of their modernist heritage as an added value for guests is limited. Furthermore, hotels and other (tourism infrastructure) buildings from that period are in need of regulated conservation, yet they are mostly not listed as significant monuments or cultural heritage, resulting in them possessing weak or no protection when it comes to issues of renovation or other physical structural adaptations. That said, the number of 20<sup>th</sup> century buildings listed as monuments of local or national importance in Slovenia has been rising fast since the start of the 21<sup>st</sup> century (Perkovič, 2017).

In the case of analysed city hotels, they mostly continue to operate despite some serious crises. Often hotels use crisis as an opportunity for renovations and rebranding, as we have seen in the period following Slovenian independence. In such renovations, most hotels lose many details of their architecture or are even changed to such an extent, that it is even difficult to detect the original building. That is why hotels should understand the added value of their architectural heritage, especially in light of the ongoing tourism crisis due to Covid-19 pandemic.

Urban destinations could also improve tourism offers based on modernist and socialist heritage. Slovenia and other postsocialist cities should better appreciate the value of their heritage from the socialist period. The current tourism offers of Slovenian cities are mostly focused on culture, urban lifestyle, sport and nature; Historically, most of the urban destinations focused on their medieval and Roman heritage. Tours and/or tourist information focusing on the post-WWII era are available in some Slovenian cities (Ljubljana, Kranj, Nova Gorica and Velenje), yet modernist architecture has not yet been recognised for its full urban tourism potential.

#### 5. Conclusion

The period after WWII marked the beginning of the modern tourism industry not only in Yugoslavia, but also in the European territory. The case of Slovenian city hotels shows that the tourism infrastructure planned in that period represents a vital part of current urban destinations. However, current owners and management of these hotels do not generally perceive the origin and architectural heritage of their buildings as important. With renovations and extensions, most of the hotels have lost their distinctive modernist elements; others have lost their prime function. Furthermore, while hotels still mostly fulfill their role as critical tourism infrastructure by providing good mid-range accommodation for their visitors, they have mostly lost its role as places of social life for the local residents.

A similar attitude is also evident in the management and marketing of urban destinations; they very rarely include socialist and modernist heritage in their tourism agenda. Period after the WWII was crucial for the building of tourism and other public infrastructure, which is now often under threat of decay, mismanagement or demolition. Tourism could do more, especially in the light of increased interest in this period, to help protect and preserve European post-WWII urban and architectural heritage.

## ACKNOWLEDGEMENT

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# The Structural Role of Public Spaces in 1950-80s Mass Housing: Experience and Prospects of the Akademgorodok District in Irkutsk

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## ABSTRACT

*The article examines the changes in the development of private and public spaces from the 1950s to the present time on the example of the district of Akademgorodok in Irkutsk. The trends in the development of society reflect the differences between the ideology of project proposals implemented in the 1950s and the current state of the space. The public spaces of the district preserve the sustainability of the post-socialist city, especially given the ability of public spaces to adapt and continue to function in conditions of socio-economic transformations and challenges. The article analyses the relationship of design ideas and realities of different historical periods in the context of Akademgorodok. In modern strategies and experience in creating a comfortable living environment, there is a relationship with the morphology of the development of the district as the basis for a socially inclusive form of reviving public spaces. The German experience of the quarter's management can have a positive impact for the formation of a unified scenario for the development of the district.*

## KEYWORDS

*public spaces, mass housing, district development, post-socialist city, neighborhood management*

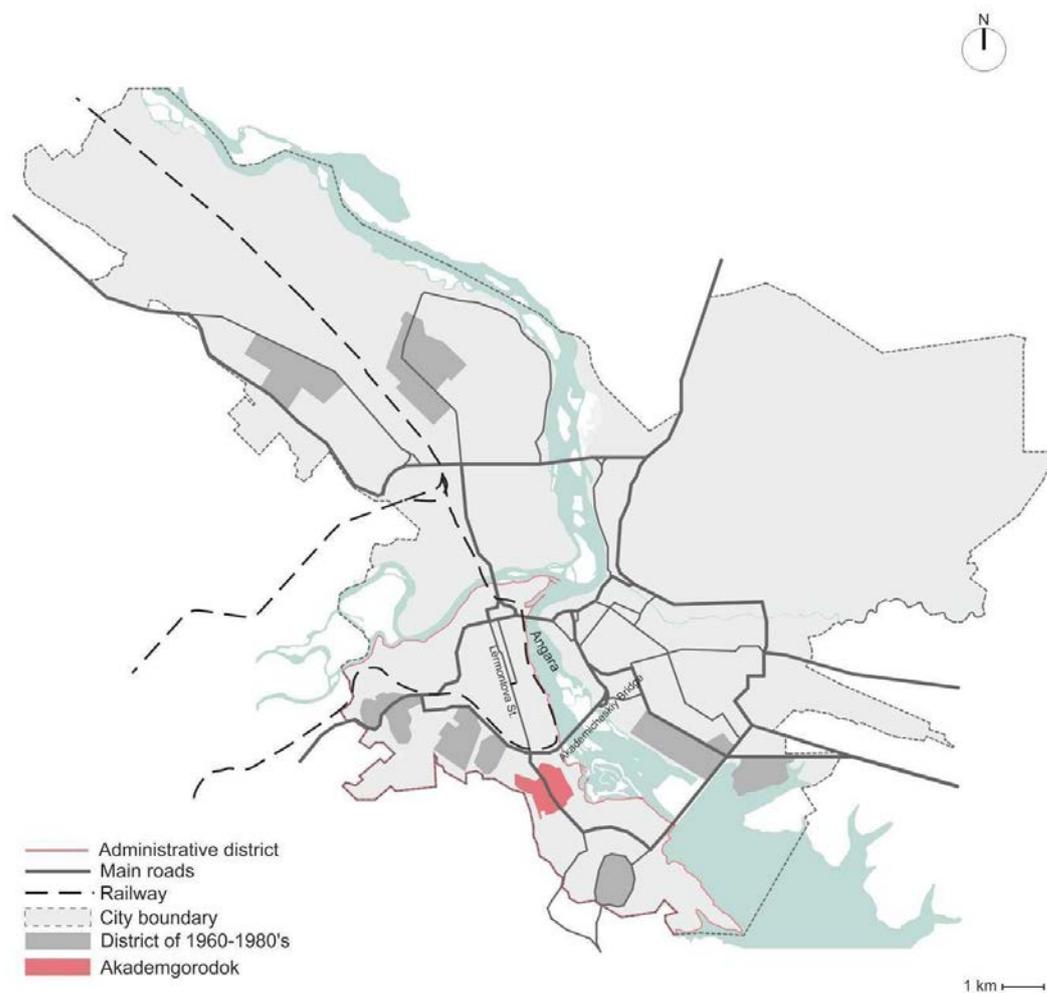


Figure 1. Location of the district in the city structure (Source: Malko A., Tumureeva M.)

## 1. Introduction

In recent years prefabricated housing estates are undergoing significant transformation and deserve attention. The research carried out by the authors is part of the trilateral cooperation between Russia, Germany and Ukraine in the research project "The Unloved Heritage of the Socialist City ". The project, which began in 2016, allows us to compare the experience of the three countries, analyze the evolution of mass housing and identify the potential for their further development.

The city of the Soviet period personified powerful means of influencing the state ideology on the mass consciousness. Political ideas of social unity and prosperity were presented to the society through stereotypical architectural and artistic images and methods of forming public urban spaces that are understandable to the mass consciousness (Kosenkova, 2014). At the same time, the functional components of the city that did not "work" for the integrity of the ideological and artistic design were left without attention. This primarily applies to residential areas.

In the 1950s, Siberian cities began the process of decentralization, when the increase in population led to the need for city expansion. The massive construction of large-panel houses in Irkutsk began in 1958, which solved the most important social problem of providing families with apartments, and made fundamental changes in the layout and image of cities, giving rise to urban planning concepts of the era: the mass housing development. The social prerequisites were also rethought. New districts

were presented as comfortable territories for people to live, regardless of their social status. (Kozlov & Engel, 2019). During the period from 1958 to 1985, the city built dozens of times more than in its entire three-hundred-year history. In the structure of Irkutsk, a panel belt has appeared on the peripheral free areas.

## 2. Stages of development of the Akademgorodok district

Akademgorodok is located in the southwestern part of Irkutsk on one of the main transport axes of the city - Lermontov Street, surrounded by a large forest and close to the Angara River. The population of the district is 12,000 people, on an area of 234.5 hectares. (See Figure 1.)

### 2.1. The history of the creation of the district 1950-1960s

In the late 1940s-1950s, within the framework of the national program for the creation of scientific centers of the Russian Academy of Sciences, a variant of the intracity location of a complex urban area with urban planning autonomy characteristic of scientific centers was implemented. The first plan-scheme of the Irkutsk Akademgorodok was published in 1964. (Mikhailov, 1964) (See Figure 2.1.) The project and its implementation at the first stage of construction matched each other as much as possible and the basic planning and social structures of the district were created.

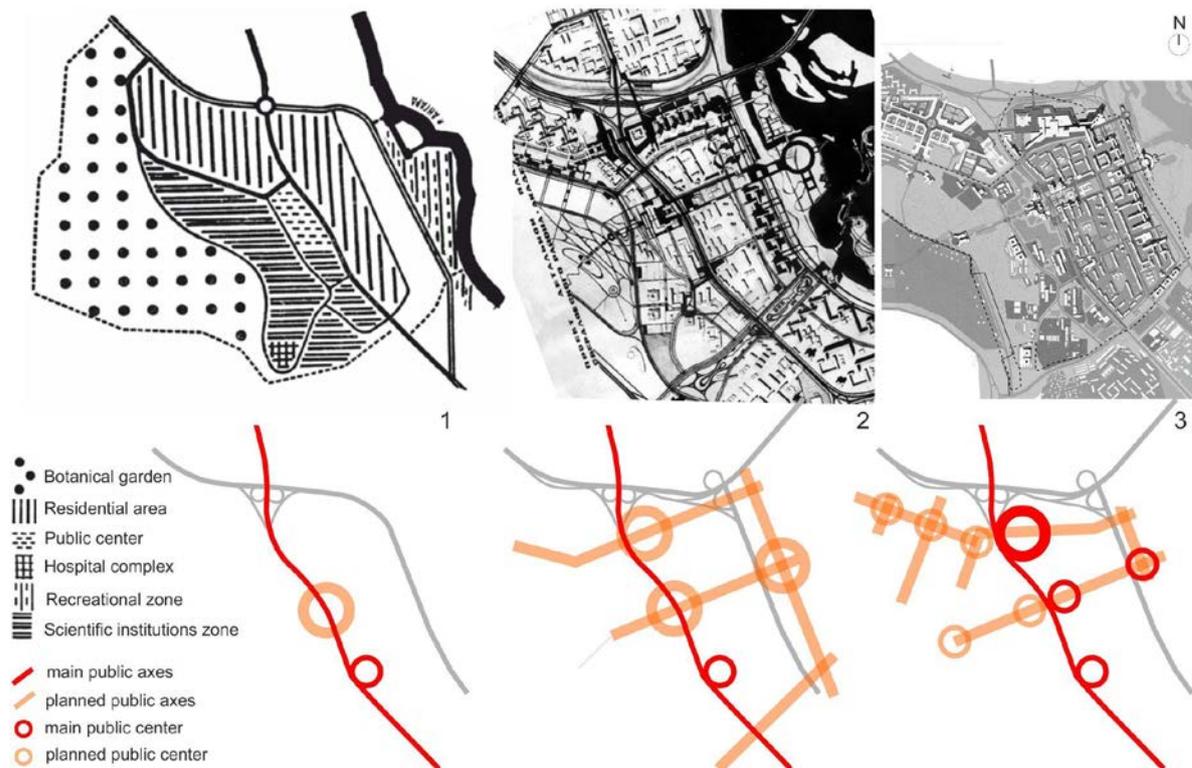


Figure 2. The main public centers and axes in project proposals from different historical periods: 1. Plan-scheme of Akademgorodok by architects Ya. Zheravsky, A. Mikhailov, V. Nuikin, A. Polosov, G. Tyukhenits, A. Khokhlov.; 2. Detail Planning Project by Irkutskgrazhdanprojekt, S. Grigoriev, V. Nechitajlo, S. Nechvolodov, V. Khajkin In: *Project Baikal 2011 / 29-30*, p. 194; 3. Detail Planning Project by Nicolay Zhukovskiy a.o. "Irkutskgrazhdanprojekt", 2005. (Source: Kozlova L.)



The main features of the layout of the Akademgorodok were formed already at the end of the 1960s: on the slope of the mountain above Lermontov Street there were university buildings, and below were the residential quarters, schools, a clinic, kindergartens and shops. Closer to Angara, two auxiliary factories and a railway line were removed and thus a reserve area for housing was created. In addition to the proximity of woodlands, the territory of the residential area has an abundance of landscaping within residential groups. The scientists were engaged in the improvement of the local area on their own (Kuznezova 1964). A distinctive feature of Akademgorodok is the implementation of one of the urban planning concepts of the mid-20th century - free planning in the placement of scientific and educational institutions in the park area in the city structure.

## **2.2. Reconstruction period 1970-1980s.**

In the 1970s, several projects for the reconstruction of Akademgorodok were proposed with the aim of further integrating the district into the urban spatial structure, taking into account the development of national, regional and city-wide facilities in neighboring territories.

One of the projects was developed by the Irkutskgrazhdanproekt Institute. On the coastline, the project offers a "cassette" type residential development with increased number of storeys, density and regularity in the geometry of the plan. The living space in the project is structured by three pedestrian axes with access to the coastline: one is central, where the project provides the objects of science, education and entertainment; the second one is for recreational purposes, with a green border with a neighboring residential area in the south; the third is multifunctional along the upper boundaries of the district. (See *Figure 2.2.*)

In reality, efforts during this period are concentrated on the erection of dwellings and new buildings of universities, a northern residential group and houses according to individual projects (architect V. Pavlov). Public axes remain unfulfilled.

## **2.3. Change of urban planning ideas 1990-2020**

The end of the Soviet era entails a change in urban planning ideas and socio-economic changes in society. Since the early 1950s - 1960s, the line type of building prevailed, the expressiveness of the coastal territories was achieved by simple means: the contrast of extended houses with houses of shorter length, as well as with high-rise tower buildings. Since the 1990s, the development of Akademgorodok has become denser, new multi-storey residential areas have been built in the coastal group of the district, while preserving the high-rise accents in the area of academic institutions at the high elevations of the relief.

In 2005, the Irkutskgrazhdanproekt Institute staff developed further the project for the planning of the Akademgorodok territory. The architects had to take into account a number of conditions in the design: the unfinished construction of a number of buildings of public and business significance, the rethinking of this area, the activation of residential construction, the need to build a large shopping and entertainment center, etc. Within the framework of the project, the developers proposed the further development of the residential area by building several storey buildings along the coastline, which led to a radical change in the former 5-storey silhouette of the 1960s buildings, supplemented by 9-storey dominants in the 1980s. The latest version of the unapproved layout of the Akademgorodok expressed the more brutalist style of the water façade. It consisted of a high-rise rigid and continuous structure of 9- and 16-storey buildings, which formed the courtyards of a

closed and square and rectangular semi-closed outline, rising in terraces along the relief (Kozlov & Engel, 2019).

The public axis in the north of Akademgorodok received further development. The project envisaged the creation of a pedestrian structure with access to the coastline, crossing the railway to the neighboring area and a connection with the library and a new residential area on the opposite side of the highway. (See *Figure 2.3.*) The pedestrian network still has not formed into active axes. The public space here is represented by the square at the entrance to the library and the square in front of the ice palace. There is complexity of the intersection of highways and the lack of integrity of public spaces in the public center (Zhukovskij, 2011).

Since 2017, an active improvement of courtyard spaces and squares has begun within the framework of the federal program Comfortable Urban Environment. The lack of a general development scenario that would allow the systematic development of the linear-nodal structure of public spaces is the main problem in the implementation of this program.

### **3. Planning structure of the district**

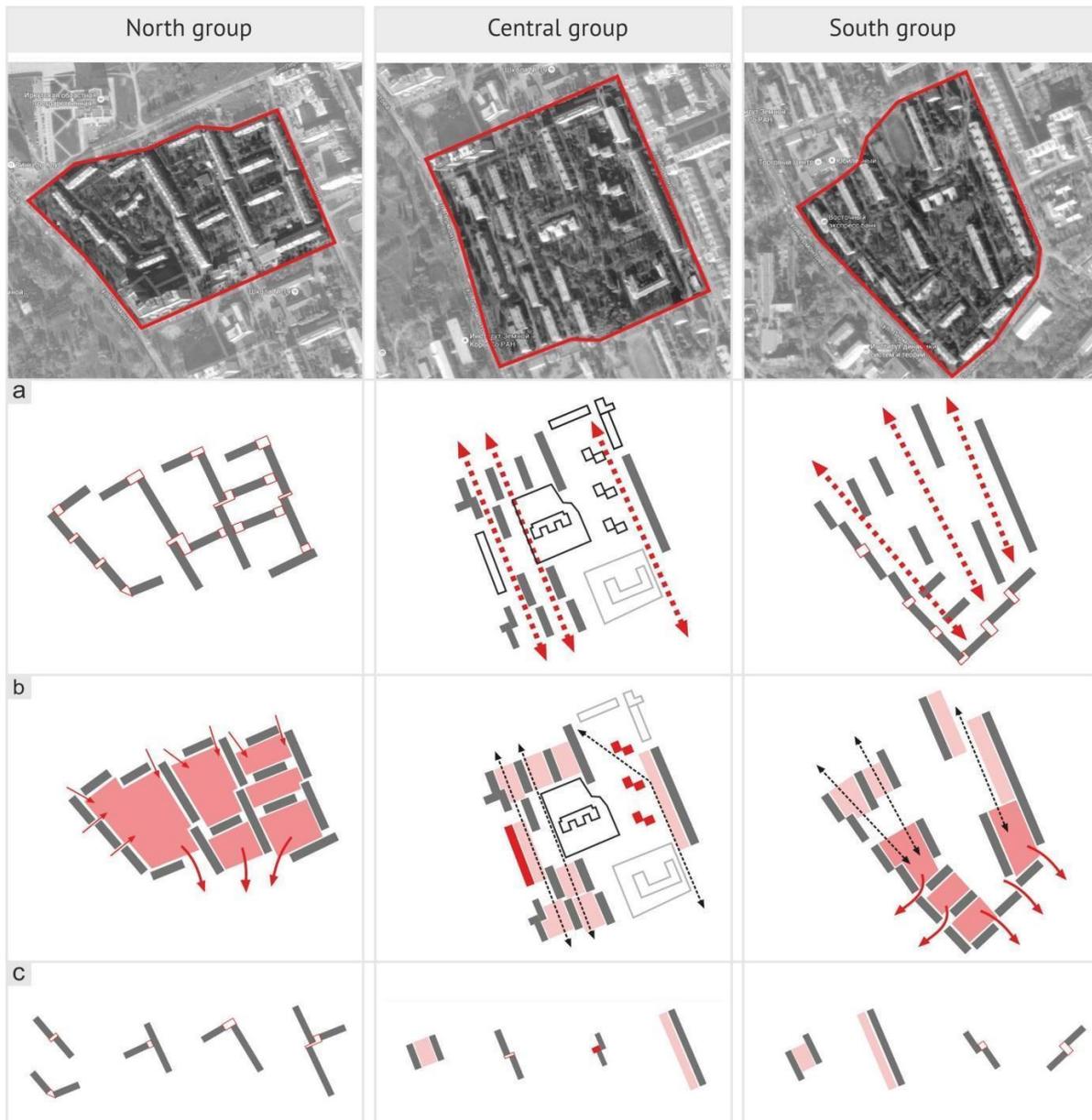
Akademgorodok is a compact formation with parallel zoning. It is located on the territory with a slight slope to the Angara River. It is divided into three functional zones: educational zone immersed in green areas, residential zone, between the Lermontov highway and the river zone, which forms the silhouette of the left bank and recreational zone on the bank of the Angara River.

#### **3.1. The main axis and centers**

The main planning axis of the district is Lermontov Street, along which public centers of both regional and city significance are concentrated. The regional centers are formed by the main square of Akademgorodok and the public garden. The city significance centers are the medical center close to the southern border of the district and public center in the northern part of the district including the ISU, the library I.I. Molchanov-Sibirskiy (2013), Academic business center and two Ice Palaces (2016 and 2020). In 2017, a park was landscaped in the coastal zone, creating an important center. This park was planned from the very beginning of the creation of the district.

#### **3.2. Building structure**

There are three residential groups that can be clearly distinguished in the district: south, north and middle one. The northern residential group has a cozy structure of courtyard spaces formed by 5-storey buildings (series 1-464 AC and series 1-335AS). The gradual lowering of the relief towards the coastline gives a dynamic to the buildings of the same number of storeys. The central residential group is represented by a variety of middle-rise line of buildings: series 1-306s, 4-storey brick single-section houses with improved planning and extended 9-storey buildings of series 135 C. The building is located along the highway in accordance with the relief and distinguished by open through courtyard spaces. The southern residential group is characterized by the transition of line buildings to block sections - from open spaces continuing the theme of the central group to more comfortable ones in the southern part. (See *Figure 3.*)



*Figure 3. Analysis of the relationship between development and open space in three residential groups of the district: a) morphotype features; b) features of interaction with the open spaces; c) typical blocks of residential buildings. (Source: Tulokhonov A.)*

A new building morphology in Akademgorodok has emerged in the eastern residential group based on the 135 series, which forms the continuous coastal facade of the area. Further development of this part of the district is represented by two residential complexes in the upper part of the coastline. An integral residential group proposed by planning projects did not develop here. Residential complexes are isolated cells that do not form the fluidity of the courtyard space, which is typical for the rest of the district. (See Figure 4.)

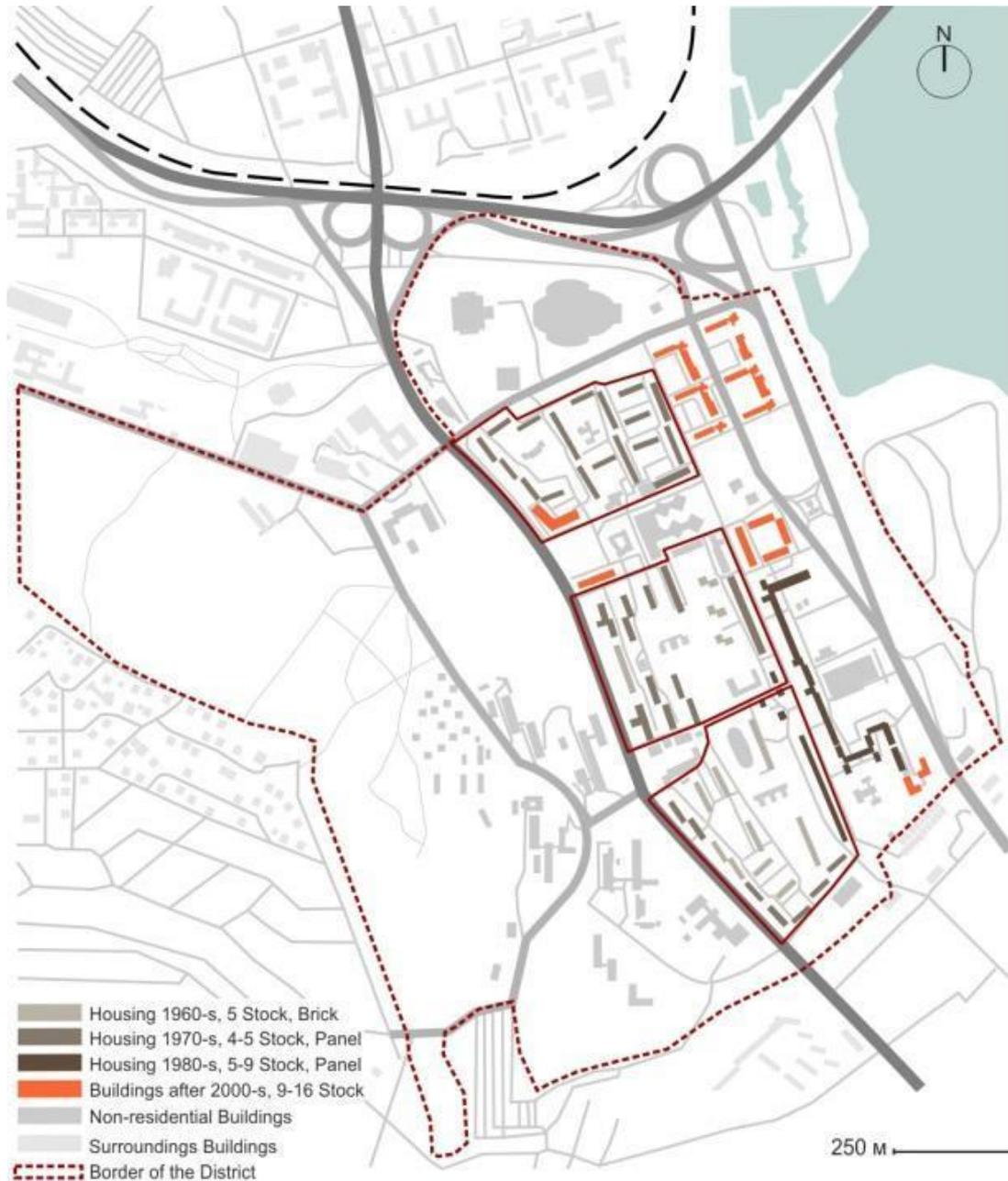


Figure 4. Building structure (Source: Malko A.)

### 3.3. Open green spaces

Open green spaces are one of the main values of Akademgorodok. There is a clear gradation and alternation of green spaces: from the forest massif on the upper part of the relief through a network of yards to the open space of the Angara River shoreline. It is possible to distinguish special types of landscaping typical for the area, which also forms its identity. (See Figure 5.)

During the development of the district, new public functions are built mainly along the highway (Lermontov St.), which prevents the implementation of the dominant role of pedestrian axes. Improvement of the coastal and forest park areas (on the territory of universities) will serve as an impetus for the development of pedestrian axes necessary for the preservation and development of the quality of life.

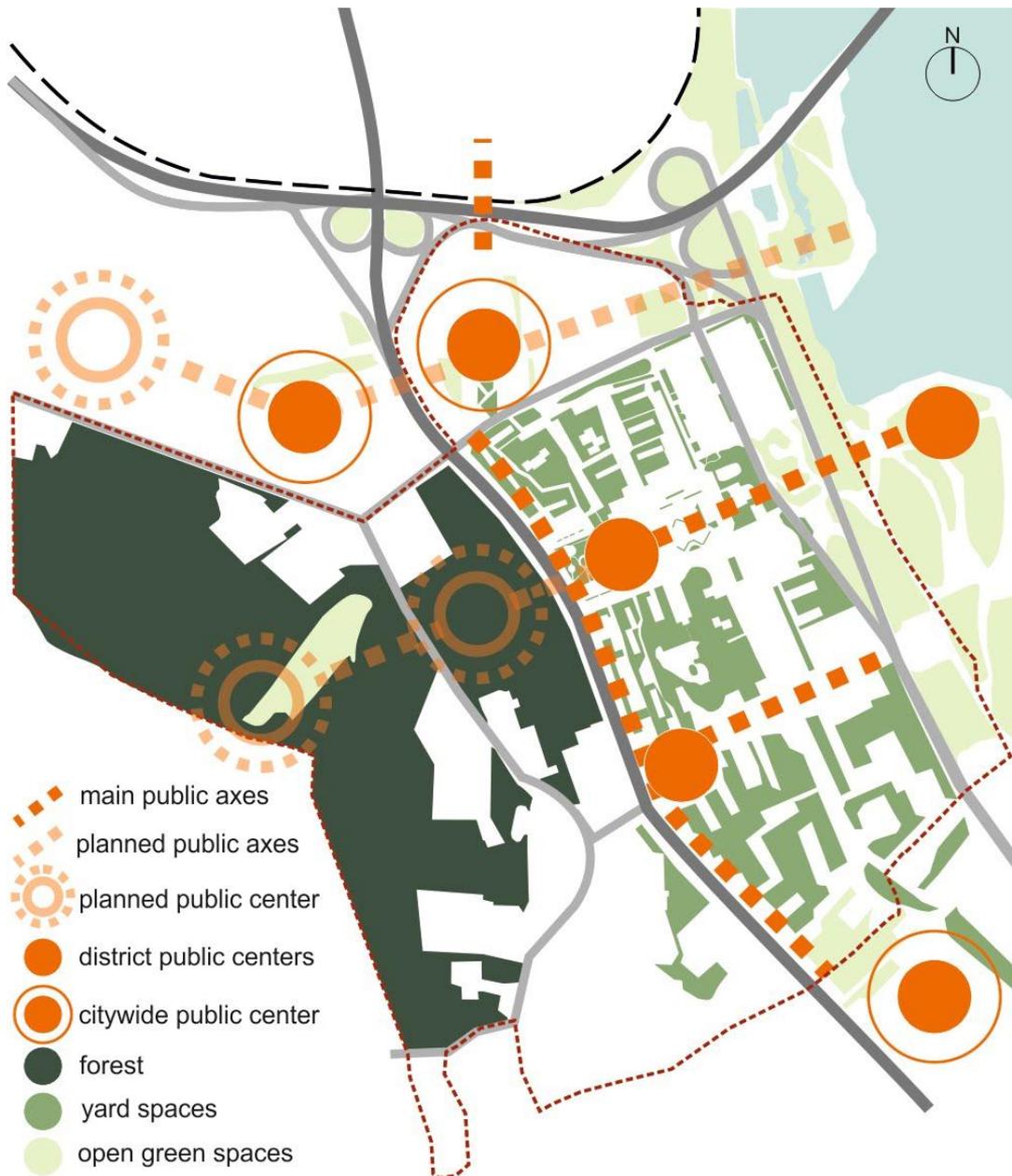


Figure 5. Green spaces, centers and axes of the district (Source: Malko A., Kozlova L.)

## 4. Modern development of public spaces in the area

### 4.1. Modern approaches to the development of public spaces

The development of public spaces directly depends on the ownership structure. Akademgorodok is one of the striking examples where you can trace the evolution of changes in public spaces through a combination of various public, private and municipal initiatives. The project, developed in the 1960s, the implementation of which lasted until the 1980s, was not fully implemented. The key problem since the 1990s has been the stagnation of the district; due to socio-political changes, the allocation of budget funds for the improvement of the district has been significantly reduced. In addition, due to the research center's special status, its entire territory, including both scientific institutes and residential areas, is located on federal land. As a result, until 2017, all public and green spaces were also in federal ownership and

the district could not take part in municipal programs, attract private capital, etc. Since 2017, the situation has changed. Under the leadership of the district deputy, negotiations were held between the city administration, the community of public self-government and local residents of the district. The result was the adoption of a land-surveying project, according to which, part of the territories were registered as communal property, which makes it possible to participate in municipal programs.

These processes underline one of the distinctive features of the Akademgorodok - a close-knit community of citizens. Due to the high concentration of scientific institutions located in this zone, most of the population is made up of scientific workers who stood at the origins of the design and development of the area and are a kind of “watchmen”: they are the ones who think about the future development of the area and take various initiatives for its development.

Today, a combination of various initiatives can be noted that contribute to the positive development of public spaces in the district. At the same time, it is possible to distinguish both organized processes and spontaneously arising ones.

Organized processes:

- Conducting a survey of townspeople and drawing up a map of courtyards for urban planning regeneration within the framework of the federal program “Comfortable Urban Environment” (“Kompleksnoe blagoustrojstvo dvorov”, 2018);
- improvement of the square and creation of a monument of science at the initiative of the Academy of Sciences (Kustova & Trofimov, 2019);
- reconstruction of the housing stock within the framework of the program for the overhaul of dilapidated housing stock (Panko, 2018);
- participatory design.

Spontaneous processes:

- citizens initiatives (creating homemade flower beds, painting fences, etc.).

#### 4.2. Neighborhood Management

For the formation of a unified scenario for the development of the Akademgorodok and the involvement of all active parties, the German experience of neighborhood management deserves attention.

Neighborhood Management is a tool developed in Germany under the Federal Social City program for the social stabilization of neighborhoods. The main purpose of this tool is to play a mediating role between the district and the administration (vertical) and between the existing institutions of the district (horizontal). An aspect is to inform all participants and organize an active dialogue through various forms (round tables, exhibitions, excursions, etc.) to achieve consensus. In addition, an important task is to integrate various aspects of economic development, social empowerment and structural development of the area. Neighborhood Management makes it possible to combine various initiatives with each other and is a kind of “meeting place” - “the inner impulse of the area” (Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit [BMUB], 2016). (See Figure 6.)

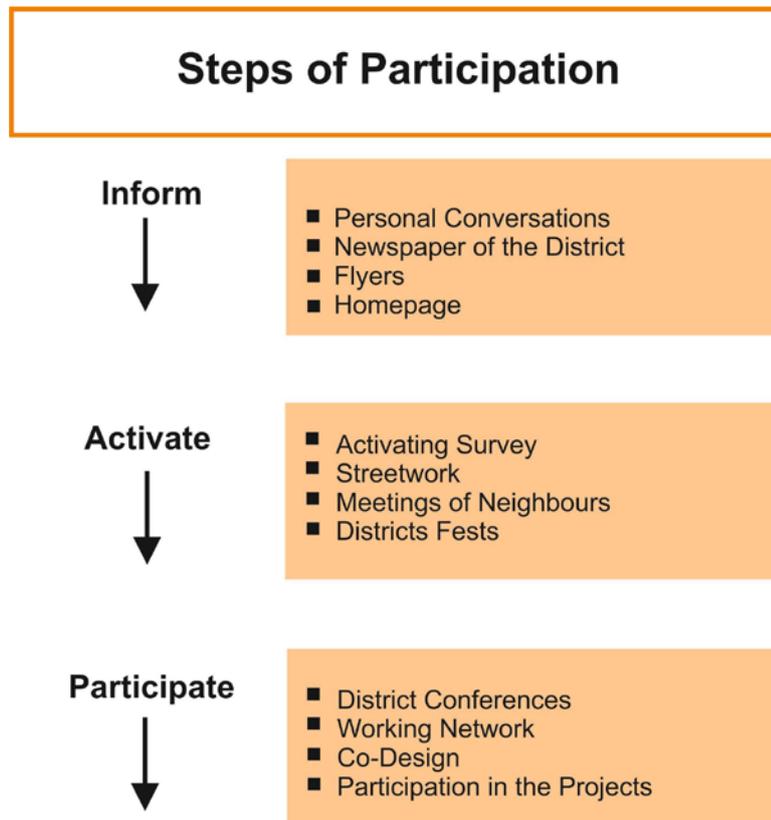


Figure 6. Levels of participation in neighbourhood management (Source: Malko A.)

The Quartiersmanagement supports new and existing citizen initiatives (unions, organizations, etc.) and coordinates the activities of departments within the city administration. Tasks and goals of the neighborhood management are:

- Upgrading, improving or stabilizing the living conditions in the disadvantaged neighborhoods
- Creation of stable social structures
- Activation of the residents to participate and contribute to the development process of the area
- Networking of the different interest groups and local actors
- Establishing cooperation between institutions, initiatives, companies, housing associations, etc.
- Initiating, setting up and supporting the development of (citizens') projects in a wide variety of social, cultural and economic fields of activity
- Activation of the district's life
- Public relations and image improvement both internally and externally
- Providing a contact person on site

The neighborhood management has a coordinating and organizing function and builds on the diverse networks and activities of the institutions and initiatives located in the area (Quartiersmanagement Prohllis, n.d.).

There are several German examples that show the effectiveness of the Quartiersmanagement in the Praxis. For example, in the Dresdner Prohllis district, there could be noticed a positive development that began with the work of the Quartiersmanagement. The "Prohllis Citizens' Initiative" was founded in 2002 on the initiative of the Prohllis neighborhood manager. The work of the initiative began with six citizens. In this the residents are committed to improve the quality of life in their district. Today, the "Prohllis Citizens' Initiative" 25 members are active in upgrading

their district. The initiative has become a permanent fixture in Prohlis in a short time and has been successful for several years. It is impossible today to imagine the life of the district without it. In 2004, the initiative founded its own association and opened its office in Finsterwalder Str. 39, now Prohliser Allee 33, as a point of contact and a meeting place with various educational offerings. Since 2005, the initiative has been run as a project for the support of the long-term unemployed. The focus is on activating unemployed citizens, to join the various population groups and to get involved in the social community. This enables them to make new contacts and to use and develop their skills in a meaningful way. and develop their skills (STESAD, 2016).

Another example of the Quartiersmanagement work is the activity of Neustadt district (city of Halle). The International Association of Architects (IBA) design seminar in 2010, aimed at the intensive participation of residents in the use and creation of spaces, implemented projects that have contributed significantly to the cohesion of residents and the quality of life: a skate park, an open-air gallery and the design of the square on Tulpenbrunnen were organised (See Figure 7.). The active involvement of neighborhood residents in the design process allowed people to take a direct part in the improvement of public spaces, which transforms the awareness of space for all into a space for everyone (Kozlova, 2017).



Figure 7. Examples of the Quartiersmanagement work in the Neustadt district (Halle): 1. one of the handmade tiles on the Tulpenbrunnen square; 2. an open-air gallery; 3. skate park (Source: Kozlova L.)

## 5. Conclusion

There are three stages that can be distinguished in the history of the district development:

- 1950-1960s: the creation of the basic planning and social structures of the district;
- 1970-1980s: reconstruction aimed at continuing the integration of the area into the urban spatial structure;
- 1990-2020 - the consolidation of the area with new multi-storey buildings along the coastline and the acupuncture improvements within the framework of the federal program.

Planning projects at each stage of the district development propose the creation of wide pedestrian boulevards that form the connection of residential groups, both with the forest and with the shoreline, but their formation as strong perpendicular connections was not carried out. In reality, there is an acupuncture improvement and the formation of activity centers along the main transport axes.

Today Akademgorodok is a dynamically developing district. The housing stock is being actively consolidated, public spaces are being modernized, and temporary events are being organized. But the disorganization and the absence of a single

concept of the district development leads to disorderly initiatives. The use of the German tool for neighborhood management can allow not only to activate the local community, but also to form the internal impulse of a constantly district developing according to a single scenario, taking into account the opinions of all stakeholders and bringing them to a consensus.

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## Transformation of the Danube Recreational Areas

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### ABSTRACT

*In Slovakia, in the period of socialism and industrialization, the tourism also developed. The concepts of tourism development was linked to everyday, weekend or long-term recreation. In Slovakia, in the period of socialism, significant investments in tourism facilities were targeted mainly at regions of international importance (in the Tatra and Liptov regions), or with the nationwide importance of recreation (in the North part of Považie and Horehronie regions), or in spas of the international importance (the city of Piešťany, Trenčianske Teplice ...). In terms of the development of recreation and tourism in Slovakia, the Danube region was included in category no. 3. In Slovakia's tourism plan, the Danube region was to provide primarily a short-term form of recreation in relation to larger cities and industrial agglomerations. Simultaneously with the development of these thermal baths, other forms of recreation related to the Danube region and its special country also developed. The paper traces the transformation of small and medium-sized towns and rural areas, which often degrade many times, instead of becoming the site of dispersed activities, especially during the pandemic period.*

*The paper is linked to the Interreg-DANURB project and the ongoing DANURB + project.*

### KEYWORDS

*Danube region, recreation areas, thermal swimming pools, Patince, Šamorín*



Figure 1. Thermal baths in Patince 1973 (Source: <https://www.vtedy.sk>)

## 1. Context of thermal baths in the Danube region.

Thermal swimming pools in the Danube region in Slovakia we can compare with those European recreational facilities that had a local or regional character and thus met the requirements of weekend or short-term recreation. This stimulated their utilitarian equipment with basic sports and recreational functions and services. It is only in the last two decades that their more comprehensive development has begun, including their addition of temporary accommodation facilities. However, it is still not possible to talk about comprehensive and consistently planned development. Rather, it is a gradual, often ad hoc addition of existing equipment within the complex, or the urban structure in its contact.

The location of thermal baths in the south of Slovakia has great potential in terms of the development of short-term as well as long-term recreation on the principle of sustainable tourism. Thanks to its climate, the south of Slovakia is an ideal place for the development of summer tourism in particular. "In terms of climatic preconditions for the development of tourism, this is an area that is extremely attractive, especially in the summer season, as it is the warmest and driest area in Slovakia. There is also a high annual average of sunshine and clouds in the summer are lower than in the winter months" (Kučerová, Elexová, Gajdošík, et al., 2018).

In terms of location and development of thermal baths in the Danube region in Slovakia, it is appropriate to monitor their location in relation to the landscape and urban structure. The location of the monitored thermal baths is conditioned by the existence of thermal springs - thermal water. Thermal drilling was carried out in most of the examined places after 1960 and stimulated the emergence of significant recreational activity in the south of Slovakia, which has now become characteristic of this area. Most of these swimming pools are located in direct connection with both the urban structure, or with the natural environment, whether with cultural or natural landscape character.

From this point of view, it is essential to link these areas with the existing urban and landscape structure and focus to their mutual harmonization. The optimization of transport connections, the quality of public spaces, or the connection to the existing and planned equipment outside the thermal baths themselves are particularly important. For their development, the added value is other recreational and tourist activities (monuments, cultural events in the area), as well as a link to agritourism, experiential gastronomy, or other types of sports activities. The development of thermal swimming pools have affect to the accommodation and gastronomic establishments. In this context, a well-thought-out strategy and concept for the development of thermal baths can bring a synergistic effect to the urban areas themselves and the whole territory as well as for their inhabitants.

Most of the researched areas of thermal baths are located in the built-up area of the city. It is often even in contact with the city center or with the direct connection with the natural environment. Usually the areas are situated on outskirts of the cities (see Table 1.).

**Table 1. Location of the thermal pool area in relation to the town and its surroundings. (Lubicia VITKOVÁ)**

Thermal pool area /city	Location			Link to:			
	Inner city	The other city	Out of the city	City centre	Natural environment	Activities in surrounding area	Main public spaces
Štúrovo		•		•	•	•	•
Komárno	•			•			•
Patince			•		•	•	
Veľký Meder		•			•	•	•
Dunajská Streda		•			•		
Šamorín			•		•	•	

## 2. Thermal baths in Patince – since 1966

### 2.1. Location

The settlement of Patince belongs to the district of Komárno. The settlement lies in the southwestern tip of the Danubian Flat and in its area is the southernmost point of Slovakia. The settlement is set in an agricultural landscape, near the Danube. The eastern edge of the area is bordered by the Patina Canal. There is also a recreation center with a thermal swimming pools nearby. The thermal swimming pool as well as the village of Patince are connected by the Komárno - Štúrovo road, from which majority local roads emanate. In relation to the Patince, Komárno is 13 km west, Štúrovo 35 km east, Nové Zámky 40 km north and the regional town is also 75 km north (Szabó, Zábó, 2015).

### 2.2. Primary landscape structure

The recreational complex of the thermal baths is located in the northeastern part of the settlement. *The primary structure* (Supuka, Hreško, Končeková, 2009), (Vitková, Lemak, 2021), significantly influencing the character of the settlement, consists of a system of lakes in the north and the Danube delta with its biocentre of preserved vegetation in the southeast. The recreational complex borders the Patin Canal and Lake Virt in contact with the settlement of Virt, which creates a natural framework for the tourist area. The area opens to a watercourse.

### 2.3. Secondary landscape structure

The landscape structure around the recreation center has a predominantly agricultural character. However, the stabilizing aspect favorably influencing the ecological carrying capacity is the system of biocorridors separating the individual fields, and the watercourse (channel) passing through the whole territory of the settlement.

The green biocentre separating the Danube and agricultural land also includes a port for small and medium-sized ships, which is part of the tourist complex.

Watercourses and lakes in this part of the settlement are important elements of the country, which affects the character of the village and its infrastructure, which creates favorable conditions for recreational and tourist development. The tourist area in Patince includes several dozen hotels and swimming pools with thermal water, an artificial lake, a harbor and wellness. The thermal spring springing in the area has a water temperature of 27 ° C (Szabó, Zámbo, 2015).

The area was visually separated from the agricultural land by high vegetation. However, this does not apply to the southwestern part of the area, where the road leads. From and to the north, the area of the tourist center opens to nature and the visitor can watch the dynamic character of the landscape - the Patina Canal. The resort also includes an artificial lake with boats and canoes. Along the road Komárno - Štúrovo there is a steam pumping station, which is also a technological museum and a technical monument.

## 2.4. Transformation on the history

**Table 2. Location of the thermal pool area in relation to the town and its surroundings. (Olena LEMAK)**

<p><b>1869 – 1887:</b> A system of lakes in the northern part of the area, which was part of the Danube Delta. Source: Google Maps.</p>	<p><b>1954:</b> The wet area of the bank of Žitava is transformed into a system of lakes. Source: Source: Mapy.tuzovo.sk</p>	<p><b>Present day:</b> Significant changes in the confluence of the Danube and the Patin Canal, along with adjacent lakes. Source: Source: Mapy.tuzovo.sk</p>
		

**Table 3.: Transformation of the thermal baths in Patince (Olena LEMAK)**

<p>Thermal baths in Patince 1973 Source: <a href="https://www.vtedy.sk">https://www.vtedy.sk</a></p>	<p>Thermal baths in Patince today Source: Google Maps</p>
	

## 2.5. Functional and compositional solution of the area

The location for the recreational area was beneficial not only in terms of thermal resources, but also in terms of the diversity of the primary landscape structure, the Danube Delta, habitats and biocorridors in the area (see Table 2, present day).

The complex was founded on the 1st class road for international and domestic transport «Komárno - Štúrovo», from which the entrance to the complex from the south side was built.

The area and positional shape of the area are defined:

- Patina canal and system of lakes,
- Communication of local importance in the north,
- Agricultural land divided into individual fields

## 3. Vadaš – thermal baths in Štúrovo – since 1952

### 3.1. Location

The settlement of Štúrovo belongs to the Nové Zámky district of the Nitra region. The town is one of the important tourist hubs in Slovakia. Štúrovo is located on the left bank of the Danube on the Slovak-Hungarian border, and together with the town of Esztergom form the so-called "Twin cities" located on both sides of the Danube, through which the state border crosses. Štúrovo is the southernmost town in Slovakia. Distance from the district town - Nové Zámky is 48 km. Komárno is 45 km from Štúrovo and the regional town Nitra is 88 km away. (Szabó, Lengyel, Karakán, et. al., 2015)

### 3.2. Primary landscape structure

The dominant element to which the town of Štúrovo is connected is the river Danube. The diverse landscape structure around the town is also highlighted by the river Hron with a system of adjacent forest parks, flowing into the Danube in the northeast of the settlement.

The climatic character of the town is partly influenced by the mountains, which are located behind the confluence of the Danube and Hron - Burda or Kováčovské kopce, which include Liansky forest. These are important natural elements that shape the character of the landscape.

### 3.3. Secondary landscape structure

The area of the thermal baths is located on the northern edge of the town, thus representing a continuation of the urban structure of the settlement.

The area is separated from the urban structure by a strip of high vegetation from the west and east, thus creating a degree of privacy for visitors and a feeling of connection with nature. From the south, the complex is connected to the city center, through a system of public spaces, while a large part of the boarding zone is a public parking lot. Part of the tourist area is included in the urban space of the town. In particular, the northwestern part of the complex, which contains several apartments and accommodation facilities for visitors to the town, a fitness center, catering facilities and other amenities, thus connects to the settlement structure. From the east side, the swimming pools area is in direct contact with the undeveloped area. In the north, the area is adjacent to agricultural land.

Impressive is the visual connection of the swimming pools area with Estergom and its basilica, as well as the hills of the Pilis Mountains.



The area of the thermal baths in Štúrovo today contains 7 outdoor and 2 indoor pools. The thermal water supplying the pools flows from a depth of 130 meters, its temperature reaches 39 ° C. The lagoon has an area of 3800 m<sup>2</sup>, the whole area of the swimming pools area - approximately 35 ha (Szabó, Lengyel, Karakán, et. al., 2015). The distinctive character of the area of the thermal baths is brought by the artificially completed lake with the island. There is an amusement rope park on the island. The area includes beach zones, water recreation zones, swimming pools with different temperatures, children's pools, hotels, clubs, bars, cottages, apartments, wellness and restaurants.

### 3.4. Transformation on the history

Today's area has served since time immemorial as a refuge for wildlife. This was caused by the instability of the area - spring and autumn overflow of the Danube and Hron from their banks, until 1965, when a flood barrier was built. At that time, Vadaš was used by the youth of Štúrovo for their leisure activities: in winter, wet areas with continuous ice attracted hundreds of skaters, in the summer it was reserved for all games, especially football. "Vadaš was used by the smallest ones to release "dragons", to hide them, or to guard flocks of geese, who did not want to return home to their desolate yard in the early evening with a heavy neck" - the local resident writes about his memories on the main page of the settlement. He also mentions that in 1838 the level of the Danube reached a height of 730 cm (the highest in the last 5 centuries). "Together with the alpine glacier, it caused a continuous, unprecedented deep flood of water from the shrouded Hron" (Szabó, Lengyel, Karakán, et. al., 2015) (see Table 4.).

Until the very beginning of the last century, the former Vadaš extended into the very part of today's Main Street, whose northern side up to the former Calvary was still empty, without houses. Vadaš reached close to the municipal road, which was the route of the medieval trade route Via Bohemia. (Szabó, Lengyel, Karakán, et. al., 2015).

In 1949, a geological deep well was drilled to a depth of 97 meters. Splashing thermal water with a speed of 7 l / sec and a temperature of 40 ° C made it possible to build in 1950-1952 the first thermal swimming pool on the banks of the Danube, today the so-called old thermal pool. Accommodation capacity was also realized for about 120 people. It was a small swimming pool with one pool (with a capacity of up to 300 people). The beginning of the construction of today's Vadaš was a well from 1973 providing water 39.7 ° C with a capacity of 70 l / min. The originally planned area of the complex was 50 ha. To which also belonged a pond with an artificially built islet. During the first year (1974), 3,000 trees were planted in the supposed area and its surroundings, access roads for the engineering network, service and accommodation spaces for employees were built. From 1978-1983, hotel-type accommodation was provided and another 3 swimming pools were built.

The modern development of the swimming pool komplex took place in 1999, when an indoor a 25 m long swimming pool and a smaller pool for children was open. In 2001, the old unaesthetic buffets were removed, which were replaced in 2002 by new catering facilities with a seating capacity of 600 m. In the same year, a new sitting pool with a whirlpool massage was built (Szabó, Lengyel, Karakán, et. al., 2015).

In the following years, the area developed as follows:

- 2003 - completed the construction of the Thermal \*\*\* hotel;
- 2004 - built a swimming pool "Lagoon" with artificial waves with a water area of 3800 m<sup>2</sup>;
- 2008 - the 30th anniversary of the Vadaš thermal swimming pools was celebrated;

- 2009-2011- revitalization of the pool area was underway (Szabó, Lengyel, Karakán, et. al., 2015);
- 2017 - construction of a wellness center (see Table 5.).
- 

**Table 4. Settlement development and location of the thermal swimming pools (Olena LEMAK)**

<p><b>1869-1887:</b> Settlement Párkány (today Štúrovo) had a railway line and roads, they are preserved to this day. Source: Google Maps</p>	<p><b>1936:</b> Construction has been added along the road from the northwest. Part of this development is part of the tourist area. Source: Mapy.tuzovo.sk</p>	<p><b>Present day:</b> The flood plain of Vadaš has acquired a new importance of a recreational character. Active construction around the complex. Source: Mapy.tuzovo.sk</p>
		

**Table 5. Development and transformation of the Vadaš thermal swimming pools komplex in Štúrovo. (Olena LEMAK)**

	
<p>Recreational komplex Vadaš in Štúrovo – 1974. Source: sturovo.com</p>	<p>Preserved infrastructure and function – today. Source: Google Maps.</p>

### 3.5. Functional and compositional solution of the area

The area of the swimming pools has a rectangular shape. It is accessible by a system of roads: from the north, road no. 564 II. class, Nánska cesta I. class from the west side, while the main arrival is from the south and east side. From the western side, the area with its accommodation capacities and their form is connected to the urban structure of the town, which is formed by family buildings. Today, this built-up area provides visitors with a number of apartments for short-term stays. Part of this development dates back to 1936, later it gradually expanded from the north.

The current recreational function of the area resulted from its natural character of the area and its use. It was significantly affected by the activities of the Danube and Hron. The current natural elements of the area's vegetation, the lake, refer to its past and character, although the area is isolated from the Danube watercourse, although it is located in its vicinity.

## **4. Swimming pool X-bionic in Šamorín**

### **4.1. Location**

The area in Šamorín was built on a "green meadow" outside the built-up area, which was originally agricultural land in direct contact with the drainage channel of the Gabčíkovo dam. It is accessible via the Čilistovská road connecting Šamorín with Čilistov. The complex is located 20 kilometres from Bratislava, in good access to the R7 expressway.

### **4.2. Primary landscape structure**

The area on which the X-bionic sports and recreation complex is built today, which also includes a swimming pools area, was fundamentally marked and shaped by the Danube and its changing riverbed and the accompanying floodplain forests. This landscape was significantly disturbed by the construction of the Gabčíkovo waterworks with a left seepage channel and a left-bank protective dam. The regulation of the flow has significantly changed the character of the primary landscape structure - the flow of the Danube and the accompanying floodplain forests.

### **4.3. Secondary landscape structure**

The area is set in intensively cultivated agricultural land, which is currently in direct contact from its three sides. The complex itself has a well - thought - out landscaping, which is the most dominant in its central - line part.

### **4.4. Historical transformation**

Due to the fact, that the area was created on a green field as a comprehensive urban concept, its transformations will be possible to follow just in the future. The fundamental transformation is linked to the area itself, which was marked by the changing Danube riverbed and its many branches, floodplain forests and agricultural land, which was significantly changed by the construction of the Gabčíkovo waterworks, which was built since 1977 and their protective dikes. The contact between researched area and the new water channel is not sufficient visually, no physically. The surrounding water element is perceived especially from the higher floors of sports facilities (see table 6,7).

### **4.5. Functional-operational and compositional solution of the area**

X-bionic is a multifunctional area of sports and leisure. It provides facilities for relaxation, leisure activities, recreational and professional sports. The large part of sports venues meet the parameters for organizing world events. There are 28 sports grounds on an area of 100 hectares, those are intended for professional athletes have Olympic parameters. The area can be divided into several basic sports areas with indoor and outdoor sports areas. It is a fully equipped athletic complex, swimming complex with thermal pool, water park and swimming pool, equestrian centre, gym and other sports facilities. The complex is complemented by a hotel with 1150 beds, congress centre, restaurant facilities, other services and capacity parking. The area is based on a significant operational and compositional axis parallel to the flow of the Danube, which is terminated by a forest park in the west.

**Table 6. Development of the city (Lubicia VITKOVÁ)**

<p><b>19th century (1889):</b> The town of Štúrovo /Somorja was a compact agricultural town with a bourgeois stratum and culture. Source: staremapy.sk</p>	<p><b>1918-1950:</b> The intensification of development along the established network of roads Source: Mapy.tuzovo.sk.</p>	<p><b>1950 -present (2010):</b> Redevelopment of the large parts of the original fabric and the construction of prefabricated housing estates and industry. In 1977, the construction of the reservoir began. Source: Mapy.tuzovo.sk</p>
		
<p><b>1889</b></p>	<p><b>1950</b></p>	<p><b>2010</b></p>

## 5. Conclusion - analysis of the transformation of settlements and natural structures on the example of the development of recreational areas - thermal baths

The conditional factors for the development of thermal baths in the Danube region in Slovakia were the sources of thermal waters. Another key added value in this area is the Danube, which is currently underused, as is the surrounding cultural landscape. In the article, we focused mainly on those thermal baths that are located near the Danube.

The Danube and its floodplain forests, as well as the agricultural landscape cultivated for centuries, represent an essential natural framework in which the researched thermal baths are planted. The Danube landscape currently contributes mainly to the synergies of several activities in the Danube region, associated with cycling, hiking, water sports. At the same time, the Danube is a promising transport artery that will become increasingly important in promoting sustainable tourism. Strengths of the region in terms of its location and character:

- Largely preserved rural character of municipalities;
- Good conditions for agricultural production, very fertile land;
- The existence of protected natural areas and habitats of European and national importance;
- Valuable historical heritage;
- Thermal springs;
- Cultural traditions and events (fairs, festivals, sporting events);
- Gastronomy and viticulture.

Disadvantages of the territory:

- Weak local economy;
- Low environmental awareness of the population;

- The character of the country is greatly affected by large-scale agricultural production;
- Few job opportunities;
- Outflow of population to larger cities (especially Bratislava) (MAS, 2018) (see table 7).

**Table 7. Potential for the development of recreational areas with regard to conditioning factors (Olena LEMAK, Ľubica VITKOVÁ)**

The name of the recreation center	Transformation of the recreation center with regard to:		
	Ecological and environmental aspects	Economic aspects	Other aspects
<b>Thermal baths in Patince - since 1966</b>	<p>Thermal sources</p> <p>The landscape structure surrounding the recreation area represents the so-called «<i>cosmic landscape</i>» (Norberg Schulz, 2010) The complex is currently closed in relation to this landscape. The internal urban structure contains plenty of greenery and is rather «<i>romantic</i>».</p>	<p>The connection of the area to the I.class road and the exceptional character of the area contributes to the increase in the number of tourists, which in turn stimulates the development of tourist infrastructure.</p>	<p>The potential of the arm and the lake, as well as the surrounding cultural landscape and floodplain forests. Danube - is an important transport artery also for more fundamental access to the swimming pools area, thanks to the port of Patince.</p>
<b>Vadaš - thermal baths in Štúrovo - since 1952</b>	<ul style="list-style-type: none"> <li>- Thermal sources.</li> <li>- The recreational area developed on the outskirts of the town, in the wet area of the Danube Delta</li> <li>- The area is developing more inwards, where the secondary landscape structure and artificial infrastructure predominate. The impact of nature felt by the lake from an artificial island.</li> </ul>	<p>The individual pools of the complex were built gradually.</p> <p>An increasing number of visitors stimulates the expansion of the area .</p>	<p>Cultural and natural potential of Štúrovo and Estergom and the wider surroundings.</p>
<b>Swimming pool area in Šamorín</b>	<p>The thermal water resources.</p> <p>The area is surrounded by agricultural landscape and is in direct contact with the Danube.</p>	<p>The proximity of Bratislava and the multi-purpose equipment of the complex are a prerequisite for its evaluation. However, its maintenance requires considerable resources. Potential in better connection with the Danube.</p>	<p>Cultural and natural potential of Šamorín and the wider surroundings.</p>

The development potential of the area thus consists of natural and climatic conditions suitable for agricultural production, agrotourism and tourism development based on local traditions, cultural and historical monuments and human resources. It is the synergy of these factors, both natural and urban, cultural and social, that can significantly strengthen the importance of existing thermal baths. At present, they represent a generator - the focus of tourism in the Danube region. It is thermal sources

and existing thermal swimming pools that attract more and more visitors from Slovakia and abroad.

In our contribution, we monitored the development of the thermal areas themselves, as well as the development of the settlement and the country in which the thermal baths are located and examined the direct interaction with this environment. The disadvantage of areas of this nature is their demarcation (fencing), which has its practical aspect - operational function. Therefore, it is important to ensure an appropriate degree of interaction with the surrounding environment in the form:

- Their intersection with original landscape and the natural environment in the site itself;
- Visual contact with the surrounding nature;
- Suitable connection of the area with public areas of the city, and surroundings (boarding area, bicycle connection, connection by public transport);
- Harmonization with the urban structure and urban design of the complex itself (in case the complex is part of an urban area).

Another important aspect that can increase the attractiveness of the area is the other activities offer, whether in the immediate vicinity of the thermal baths, or in good accessibility. Most of the monitored areas have such potential. However, it is necessary to evaluate and implement them.

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# Rákospalota vs. Újpalota: Changing Centrality of District XV, Budapest

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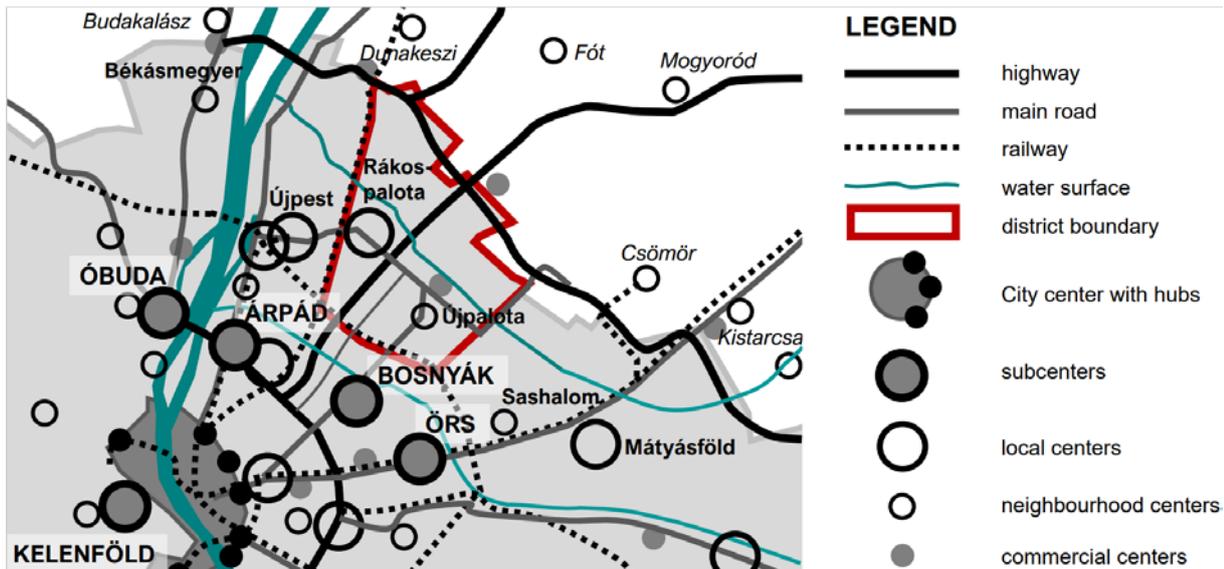
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## ABSTRACT

*The XVth District of Budapest struggles with a dramatic shrinkage and the abandonment of traditional and planned local centers. Due to fragmentation caused by history, the city management must struggle with the legacy of two very different problem areas. The traditional garden city and its center Rákospalota must face the degradation of building stock interconnected with social segregation, especially near the main traffic axes. Recently, due to the growing demand for prefab flats, the large housing estate Újpalota is prospering, but the lack of upper-level services can later cause problems as trends turn. Extensive industrial and commercial developments, including two malls, solved the supply problems only partially as they can only be approached by car. To stand competition with the settlements in the North-Eastern region, negotiation for public transport connections is crucial. Nevertheless, to face shrinkage, interdisciplinary strategies, cooperation, and the review of land use plans are also needed.*

## KEYWORDS

*Budapest outskirts, centrality, large prefab housing estate, shrinkage, metropolization*



Data sources: Budapest land use and structure plan (TSZT, 2021); Budapest Urban Development Concept (Budapest 2030, 2013)

Figure 1. Peripheral District XV of Budapest (Source: Author's own representation)

## 1. Derelict District XV

The District XV of Budapest outskirts struggles with a dramatic shrinkage that can be clearly seen in the population decrease from 112 000 (1980) to 78 000 (2011) (KSH, 2021). Other key indicators and statistics show ageing, increase in crime, vacancy, and segregation (Gáborné et al., 2009). The district was established in 1950 as the town Rákospalota and the village Pestújhely, along with several lower-class garden city areas, were amalgamated into the so-called Greater Budapest. During state socialism, following the example of most post-war European cities, the *large housing estates* of Budapest were realized on the periphery of the city (Sýkora & Stanilov, 2014). This is how Újpalota housing estate emerged, resulting in a fundamental change in the structure and centrality of the district – but since the promised upper-level institutions and metro lines were never built, population decrease already began in the 1980s (Losonczy et al., 2020).

The sudden leap into free market capitalism led to the profound sociospatial reorganization of the urban landscape all over the former Eastern Bloc, and the *postsocialist suburbanization* of Budapest (Sýkora & Stanilov, 2014) began soon after the change of regime in 1990. But since the settlements of the agglomeration could provide more territory for extensive developments, the outskirts were not the targeted area of metropolization (Kovács & Tosics, 2014). In this way, the abandonment continued, but the neighbouring settlements of the agglomeration (incl. Fót, Csömör, and Dunakeszi) faced an immense population growth. After the economic crisis in 2008, we can witness a slower regression in population, but the District XV also struggles with the vicious circle of degradation of the building stock and the impoverishment of people. Attempts to shape the process of shrinking all over Central and Eastern Europe (including the “Stadtumbau Ost” redevelopment in East Germany) were often inadequate because the conventional tools of city planning are only reactive, and unable to tackle the socio-political problems – in this way, interdisciplinary methods of analysis are required (Oswalt, 2005). The case study attempts to detect the causes of degradation not only through mapping and plan analysis, but also taking demographic data and social aspects into account.

## 2. Historical background of fragmentation

History is a key factor in regression and socio-spatial fragmentation of the District XV because the projects of different political regimes distorted urban morphology and centrality again and again. Therefore, the historical examination of the area of today's district is necessary. The study is complemented by an overview table (see *Table 1*) and a corresponding series of maps (see *Figures 2a-g*).

The series of maps (see *Figures 2a-g*) depicts the changes of centrality within the current area of the district, the interpretation of which is demonstrated by the depiction of the actual built-up area, and the indication of the main urban network elements: major roads, the railway transport network (incl. tram and suburban railway), and the two structural watercourses towards the Danube (Rákos stream and Szilas stream). In the table (see *Table 1*), the territorial division of the settlements follows the official delimitations of the neighbourhoods of the district.

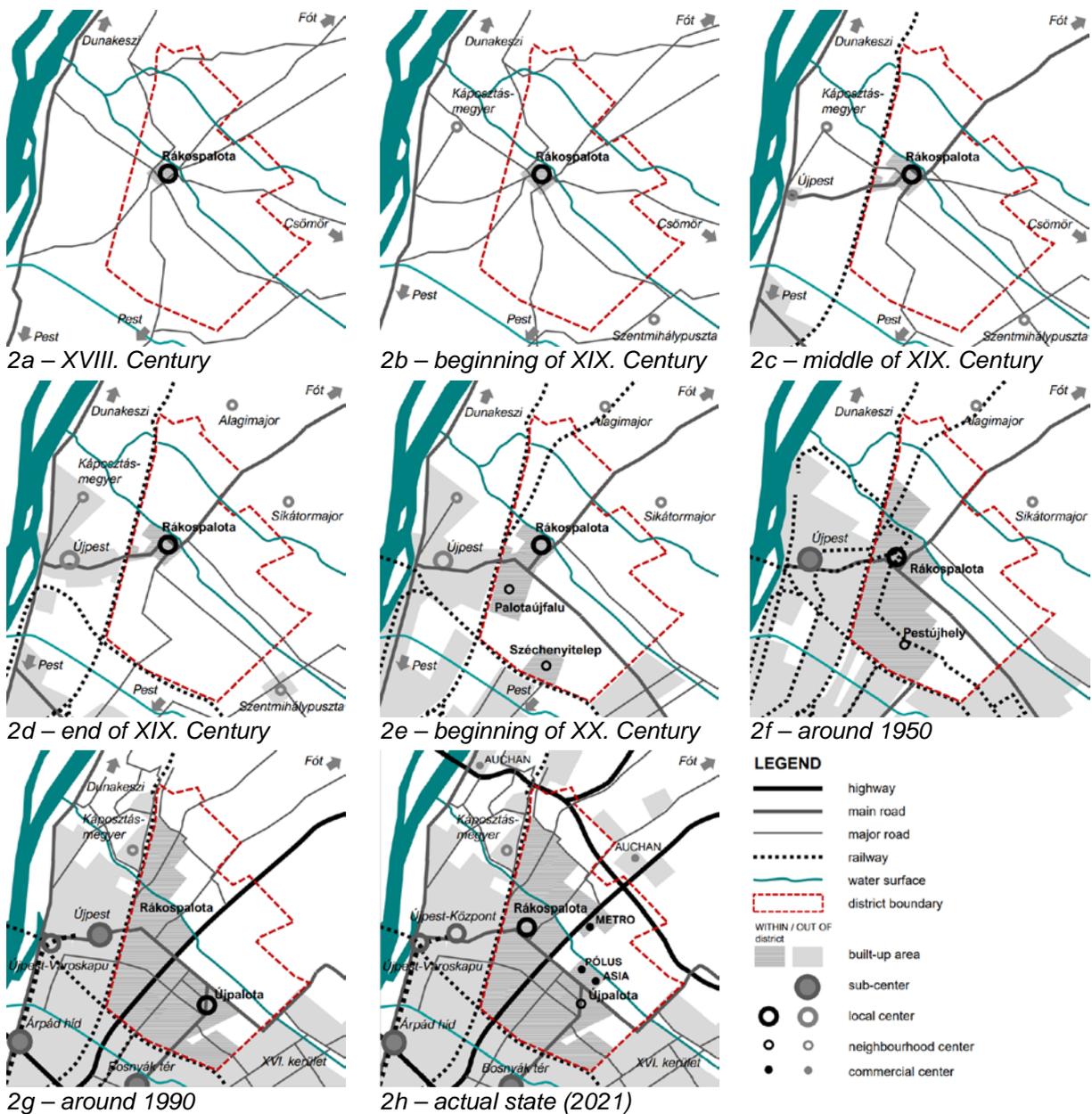


Figure 2a-h: Development of the central system of the district  
(Source: Author's own representation.)

The summarizing table shows the change in the centrality interpreted for the district parts, and it shows the role of the center, the institutions that can be found and established there and the actual population in the four developmental stages of the district: in the period before 1897 (when the construction of Pestújhely and other garden cities began), in the transitional period between 1897 and 1950, then in the state socialist period between 1950 and 1990, and finally in the period after the change of regime.

**Table 1. Changes in the central system of the District XV compared to the population and the central institutions. (Source: Author's own representation.)**

Chronology / aspects		Rákospalota		
before 1897	<i>status</i>	village		
	<i>institutions</i>	Catholic church ("smaller") open-air market		
	<i>population (1890)</i>	~ 5 500		
between 1897-1950		<b>Rákospalota</b>	<b>Pestújhely (1909-)</b>	
	<i>status</i>	town	village	
	<i>institutions</i>	+ Town Hall ("Vigadó") + Catholic church ("greater") + Calvinist church + Lutheran church + Synagogue	+ community centre + casino + Calvinist church + Lutheran church + hospital	
	<i>population (1949)</i>	~ 50 500	~ 6 000	
		sum ~ 56 500		
between 1950-1990 + highway M3		<b>Rákospalota</b>	<b>Újpalota (1971-)</b>	<b>Pestújhely</b>
	<i>status</i>	district center	local center	–
	<i>institutions</i>	+ football stadium + police station + high school + library	+ "Spiral House" + market hall + communist party HQ + health centre	– casino – community centre + hospital (expansion)
	<i>population (1980)</i>	~ 47 000	~ 60 000	~ 6 000
		sum ~ 113 000		
	<i>population (1990)</i>	~ 43 500	~ 45 000	~ 7 000
	sum ~ 95 500			
after 1990 + highway M0	<i>status</i>	local center on a higher level	local center on a lower level	–
	<i>institutions</i>	+ administration + Penny Market + ALDI Synagogue => OSF	communist party HQ => youth centre, library + Pólus Center + Asia Center + Catholic church + Calvinist church	– hospital + Spar + market + museum
	<i>population (2011)</i>	37 646	33 557	8 359
		sum 79 645		

Legend: + new institution; – discontinued institution. Data sources: Hungarian Central Statistical Office regional data (KSH, 2021); Integrated Urban Development Strategy of the District XV (ITS XV., 2016); historical maps (Arcanum, 2021)

## 2.1. Before 1897 – rural settlement

The area of the district is a mostly flat land, its geography is determined by the Rákos and Szilas streams flowing into the Danube in an east-west direction. The settlement on the bank of the Szilas stream, first called Nyír, later Nyír-Palota, and finally Palota, was depopulated several times, but since the first mention in 1281, the settlement stood at the same place. This part of the settlement, which is now called the “Old Village” (“*Öregfalú*”), has still a rural character, the oldest building being a baroque church built on medieval foundations.

The construction of the first Hungarian railway line in 1846 and the regulation of the riverbank gave an impelling force to the industrial expansion in the area North-East from Pest (Garay & Benkő, 2014). Already at the end of the 19th century, on the favorable transport conditions of the protected Danube branch port and the road to Vác (named Váci út) – with the first horse tramway line in Budapest since 1866 –, Újpest emerged rapidly due to industrial developments incl. leather, wood, and ship factories (Garay & Benkő, 2014). In contrast, Rákospalota basically retained its agricultural profile and could not stand competition with Újpest. (See *Figures 2a-c*).

## 2.2. Between 1897 and 1950 – expansion

At the turn of the 19th century, similarly to other settlements on the outskirts of the “small” Budapest established in 1873, the built-up area and population of Rákospalota also increased exponentially. In addition to the railway, several trams operated during this period, and the growth of the built-up area along these was more pronounced. As laws prevented immigrants from moving to Budapest, and property prices were high, the population of peripheral settlements multiplied, and a contiguous built-up area was created along the city limits (Kocsis, 2008). This is how the so-called “*commuter villages*” – garden cities inhabited by lower-income workers, lacking adequate physical and social infrastructure (Kovács & Tosics, 2014) – emerged, including Széchenyitelep, which was parceled out after 1897 and became independent in 1909 as Pestújhely. After 1903, the building complex of the Sanatorium (hospital) was built in several stages. In Rákospalota, several representative institutions were built at the end of the 19th century. Around these, on the former market square, an imposing main square was planned. As a result, the location of the center shifted southwest toward the train station (See *Figures 2d-f*).

## 2.3. Between 1950 and 1990 – state socialism

The town of Rákospalota and the village of Pestújhely were annexed to Budapest in 1950, creating today’s District XV. The state socialist regime promoted planned economy and applied a strict control over the allocation of human activities in space (Sýkora & Stanilov, 2014). Újpest, becoming the District IV, was the targeted area of urban intensification along the new, north-south development concept of the city along the Danube. In this way, instead of Rákospalota, the General Development Plans 1952, 1960 and 1970 designated Újpest Center as one of the future sub-centers (Preisich, 1998). In contrast, the neighbouring Rákospalota was a neglected area, and city-level development concepts only counted on it as a district center. The biggest development around Rákospalota Center was the construction of a football stadium on the site of the former market square, which to this day hinders the physical and visual connection between the four churches. The Rákospalota-Újpest overpass with a tramway was replaced with a car-only overpass which still prevents the restoration of the tram connection (Böröczi, 2021).



Figure 3. Újpalota housing estate in 1976 (Source: Fortepan / Horváth Péter)

In the 1970s, the housing shortage problem could only be solved by greenfield developments that were only available in the urban peripheries. Therefore, through the construction of thirteen large housing estates (Benkő, 2016), the focus of development gradually shifted to the 1950 extension area. The district had extensive undeveloped areas that were suitable for the construction of large housing estates according to the new urban planning concept (Benkő et al., 2017). In 1969, the construction of the housing estate with 15 400 housing units for 60 000 people began. The construction of the dwellings was completed by 1975, but the construction of the community buildings was delayed until 1978, and the planned cultural center (with a theatre and a cinema) on the site of today's Main Square was never realized, which is still a big deficit (Rátonyi, 2012). In the 1970s, the development method was car centric, so most tram lines were shut down throughout Budapest. In 1978, the first section of the M3 highway was built, which necessitated the demolition of several blocks along the road. The M3 metro was eventually built only up to Újpest-Központ, and the planned M4 metro was not completed at that time. As a result, Újpalota housing estate was in a peripheral position by the time of its construction (Losonczy et al., 2020), and its population had already declined by 15 000 before the change of regime (See Figure 2g).

### 3. After 1990 – actual tendencies

After the change of regime in 1990, Budapest went through a rapid metropolization that altered the core-periphery relations within the country (Egedy et al., 2017). In the peripheries of most Central and Eastern Europe metropolises, an increased supply of vacant land became available, aided by the flexible re-zoning adopted by most suburban municipalities (Sýkora & Stanilov, 2014). Instead, districts within the city could only provide development areas on a limited scale, therefore expensively. In this way, the *strong suburbanization period* towards the agglomeration began (Kovács & Tosics, 2014). As a result, Budapest lost 300 000 residents between 1990 and 2010, but since 2008, the city has been recording a migration surplus again (Egedy et al., 2017).

After the structural change in economy, the former industrial zones along the Danube became brownfield areas, but due to the high development potential provided by the new zoning and development concept of Budapest (Budapest 2030, 2013), Váci út became a linear investment area towards Újpest Center (Garay & Benkő, 2014). However, in the XVth District, this reconversion was not possible because – due to its residential character and distance from the Danube – the district was not rich in industrial zones. Therefore, contemporary brownfield area reconversion projects mostly avoided the district, but it was able to benefit from some of the infrastructure

investments, in particular the construction of the M3 and M0 (built in the 2000s) highways. As part of the economic growth pole towards Gödöllő, a large commercial and logistics center was created in the previously vacant agricultural area, partly belonging to the settlement Fót – in this way, *metropolization* was the most intense on the periphery (Dövényi & Kovács, 2006). (See Figure 2h).

One of the first plazas in Budapest, Pólus Center, took advantage of the proximity of the M3 highway, in an area lacking commercial services. The 56,000-square-foot mall, inaugurated in 1996, was unique in the country with about 350 stores. The Asia Center, which was finished in 2003, is an institution of national economic and social significance for the Hungarian Chinese minority. The area can only be approached by car, so these plazas have a rather local significance (Sikos T. & Hoffmann, 2004).

Already in the eighties, the decline of the population in the district was dramatic, and this trend continued until the late 2000s. But the latest 2011 national census showed stagnation (KSH, 2021): a possible explanation for this is that the *strong suburbanization period* (Kovács & Tosics, 2014) was over, and roughly 3,000 new households emerged in the district (Böröczi, 2021). However, if we look at the detailed population indicators, it becomes clear that the district is still in a dramatic situation. In Budapest, only the central V. and VII. districts have an older age structure. The unemployment rate is average compared to the suburbs, but the wages of those living in the district are lower in only a few districts than in the District XV., which is an indicator of low prestige (Gáborné et al., 2009).



Figure 4. The M3 highway within the district (Source: Author's photo, July 2021)

### 3.1. Rákospalota

The administrative center of the district and most of the institutions of symbolic significance are still located in Rákospalota. At the same time, despite the large-scale ideas of central development, no positive shift has been observed. Since the handover of the new M3 metro line, the fastest way to get to the city center for people living in Rákospalota is to use a bus service passing through the overpass. The railways are underused because even though they are fast, the schedule is unreliable, and the wagons are crowded in the peak hours. The area lacks small retail except for two supermarkets. The football stadium is neglected; therefore it cannot be used for professional matches, but no information is available about its renovation. Overall, the historical center thus gives the impression of a stagnant, fragmented area. In addition, the historic residential area Palotaújfalu, located south of Rákospalota center, seems to be an endangered area in terms of the condition of the buildings, the number of apartments without comfort, the public utility fee debt, the sinking real estate prices, and the lack of green surfaces (Gáborné et al., 2009.).



*Figure 5. The sports venue obstructing the connection of the symbolic buildings  
(Source: Author's photo, July 2021)*

### **3.2. Újpalota**

After 1990, the national housing stock, including prefabricated housing estate apartments, was immediately privatised. This happened in Újpalota as well, and the plots of the residential buildings were separated from the communal areas, creating so-called “floating plots”. The emigration that already started in the 1980s resulted in an ageing population, and it was often the case that new families replacing the old residents were in an even worse status. In addition, many got “stuck” in their flats because they can’t move into a better-quality property at this sale price (Gáborné et al., 2009.). The proportion of the elderly is outstandingly high in Újpalota, where the first residents have now all retired. Crime, drug problems and homelessness in the District XV can also be localized primarily in Újpalota (Böröczi, 2021). However, precisely due to the outstandingly bad situation, Újpalota became one of the few selected housing estates, where complex rehabilitation could take place during the 2014-2020 EU financial cycle. Building renovations (mainly façade isolations) were financed by the so-called “national panel program”, municipal interventions and an EU social regeneration project were initiated (Benkő et al., 2018). In this way, public space rehabilitation (including playground renovations, new community gardens, pedestrian-friendly developments) were relatively successful, and open spaces are in a good condition. As part of the project, the so-called “Spiral House” was renovated and extended with cultural functions, and the churches of two denominations also moved into the public areas surrounding high-rise buildings.

Due to the immense price increase since 2013 in Budapest – shown by the latest real estate market data (OTP, 2020) –, affordable housing estates became an acceptable compromise for many middle-class families. The real estate prices at Újpalota tripled, and the vacancy decreased. But the originally planned 5,000-square-meter house of culture is still missing; several subsequent plans were made for the building planned to replace today's Main Square, but in the end, only the public space (the empty area of the building) was rehabilitated. The operation of the already mentioned Pólus Center and Asia Center fundamentally increased the standard of supply at Újpalota, but at the same time has had fatal consequences for the few existing retail and service units (Benkő et al., 2018). The renovation of the market in 2014 was also only partial. As the promise of building Metro 4 to Újpalota has not been fulfilled in the 2000s, the slow tram 69 is still the only fixed-track line. Therefore, most people use accelerated bus services.



Figure 6. The renovated “Spiral House” in Újpalota (Source: Author’s photo, July 2021)

### 3.3. Pestújhely

Pestújhely is a separate neighbourhood, but its center has no significance on the level of the district, it is only important for the locals. However, the identity and patriotism of Pestújhely are still strong today, and after the neglect during state socialism, the development and exchange of real estate started slowly (Böröczi, 2021). A supermarket and a smaller market at Kolozsvár street were built, but since Újpalota and the Pólus-Asia malls are within walking distance, there is no point in creating an independent shopping center.

## 4. Possible ways out – actual strategies and plans

After 1990, by the new double-level governance system, every district became independent within the capital, having the right to make their own decisions about land policy and urban developments – but this weakened the power of the municipality to coordinate on a city-wide scale (Kovács & Tosics, 2014). After the system change, the urban planning system of Budapest became multi-level in both strategic and regulatory fields. The preparation of the land use and structure plan remained within the competence of the capital as the most important regulatory tool, but (as mentioned before) the power of the city diminished, and the decentralization of power and the imperative to create opportunities for development turned local authorities into promoters of growth (Sýkora & Stanilov, 2014). Regulatory plans are prepared on the level of the districts, in compliance with the restrictions of the Budapest land use and structure plan, but as a result of the lobbying power of district governments, huge extensive development areas are available in the actual structure plan of the city (TSZT, 2021).

In District XV, these are mainly industrial areas close to the M0 highway, but there are also two large residential development areas depicted on the plans. The incorporation of both areas – with the obligation to provide territory for the basic institutions needed in a new neighbourhood – comes up from time to time, but the complete lack of physical infrastructure hinders the developments. The expansion of Metro 3 and 4 is also planned, but as other developments are currently in focus, there is no chance of implementation even in the mid-term future.

The actual Urban Development Concept (Budapest 2030, 2013) that was submitted in 2013 applies a three-tier methodology: apart from sub-centers, the document distinguishes local centers by catchment area. Concerning the District XV, Rákospalota is designated as a local center on a higher level, and Újpalota as a local center on a lower level. (Losonczy et al., 2020).

The development of Rákospalota Center was a priority for the previous district management, so the former mayor with a degree in architecture commissioned several design tenders. No winner was announced in the design competition for Rákospalota (László & Musztafa, 2012), but most of the goals to be achieved are still valid, including the connection between the city center and Rákospalota-Újpest, the development of the railway station into an intermodal hub, and functional diversity. Along with the integration of the stadium, the creation of a sports and event center was proposed. But all in all, almost nothing was realized from the generous plans.



Figure 7. Empty land between Pólus Center and Asia Center, with Újpalota on the right side (Source: Author's photo, July 2021)

## 5. Conclusion

The inherited structure of the district is characterized by fragmentation due to historical development, which requires different neighbourhoods (that are, at the same time, on three different levels of centrality) to be treated differently. For this reason, it would be important to clarify the size of the catchment areas and the base of the three centers of the district at different levels.

The situation of *Újpalota* a decade ago was dramatic by all social indicators. However, the EU major project led to several positive changes, especially in energy efficiency of the buildings and the condition of public spaces. In addition, the changes of real estate market resulted in an uprise for *Újpalota*. However, no one knows when this trend will end, and after that, *Újpalota* can go downhill again, as upper-level services are still lacking.

On the other hand, *Rákospalota* shows a much more fragmented, neglected overall picture where the existing conditions hinder comprehensive developments, and garden city areas are affected by segregation. Interrupted developments for Rákospalota Center show that there is a huge gap between plans and reality that cannot be bridged.

It is thought-provoking that according to the 2017 database and map of Geoindex Institute, *Újpalota* housing estate can be considered to have an average status, however, there are segregated, poor areas along the M3 motorway and the railway (Geoindex, 2017). From this prospective, lower-class garden city areas built before WW2 seem more problematic.

As the district management failed to assert its interests, not only Metro 3 in the 1980s but also Metro 4 in the 2000s were not built so far. Thus, only buses play a role in the public transport of the district. Currently, significant routes through the district are internal barriers rather than development axes.

As the transport supply of the district XV is poor, it does not stand the competition against the agglomeration where the commuting time to the city center is the same, the quality of life is better, but the average price of real estate is cheaper than in Budapest. Therefore, the development of public transport is crucial, but this can only be solved with horizontal and vertical cooperation.

In the present situation, the XV. district cannot even compete with neighboring districts, of which the IV. district chose the strategy of intensification of brownfield areas along the Danube and Váci út development axis, and the XVI. district shifted specifically in the direction of a wealthy garden city character. The question arises as to what the District XV's own image is.

Shrinkage is a phenomenon that has no physical projection; therefore, instead of the classic mode of development through construction, "weak planning" methods must be taken into action (Oswalt, 2005). Taking interdisciplinary aspects into account, not only problems, and risks, but also untapped values can be named. National, regional, and local authorities must recognize that sustainable development requires a thorough revision of the policies and practices pursued after 1990 (Sýkora & Stanilov, 2014). Instead of forcing extensive developments, the porous urban fabric – the hidden potential of shrinkage – should be rediscovered.



Figure 8. Újpalota market, with the Water Tower house in the background  
(Source: Author's photo, July 2021)

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# With or Without You: The Local Significance of Rail Baltic in Pärnu

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## ABSTRACT

*Secondary cities around the world face depopulation, stagnation and cut-throat competition for resources. The effects of neoliberal strategies which perpetuate urban hierarchies have been especially pronounced in Eastern Europe, where the spatio-economic transition from state socialism to market capitalism was rapid and fundamentally altered regional power geometries. This case study highlights aspects of the cumulative causation behind urban hierarchies and considers the local significance of megaproject mobility infrastructure in secondary cities. First, the article epistemologically traces the concept of secondary cities in regional studies. Second, it considers the role of mobility infrastructures in establishing economic geographies. Third, the paper focuses on Pärnu, a secondary city in South Estonia, and the potential social and spatial implications of infrastructural renewal offered by Rail Baltic. In the final section, I argue for a more flexible and democratic planning process, which prioritises the well-being of current inhabitants over external markers of competitiveness and attractiveness to investors.*

## KEYWORDS

*Secondary cities, infrastructure, mobility, planning*



Figure 1. A vision of future regional unity enabled by Rail Baltic (Source: *Eiropas Dzelzceļa līnijas*)

## 1. Introduction

Planners worldwide are obsessed with urban growth (see Prada-Trigo, 2014). The need for growth seems to be confirmed by the over-cited and ever-increasing percentile of the global population living in cities, which the UN projects at 68% by 2050. Whereas in Europe more than 70% of people already live in urban areas, it is also true that for some time already more than half of the urban regions in Europe have been shrinking instead (Wiechmann and Pallagst, 2012). As a result of the rapid political, economic and social shifts since the early 1990s, cities in post-socialist Eastern Europe are particularly struggling with depopulation and stagnation (Rink et al., 2014).

It is now clear, that cities grow not only at the expense of the so-called “rural” but also at the expense of other, less competitive cities. To complicate matters, the underlying reasons for the unequal power dynamics within urban hierarchies are mostly beyond the grasp of municipal planning offices and belong in the realm of regional policy, (inter-)national economies, and their infrastructural underpinnings. With the aim to name and critique some of these spatio-political processes in context, this article will consider the case of Pärnu, a secondary city in the south of Estonia. More precisely, the analysis will focus on the effect the Rail Baltic international mobility megaproject will have on its development and by extension regional cohesion in the Baltics (fig. 1).

## 2. Some cities are more equal than others

*“If everything occurred at the same time, there would be no development. If everything existed in the same place there could be no particularity. Only space makes possible the particular, which then unfolds in time. [...] To let this space-conditioned particularity grow, without letting the whole run wild, that is political art.”*

(Lösch, 1958, as cited in Martin, 2015, p. 236)

Despite August Lösch’s definition of the challenge of regional studies dating back to the 1950s, the past three or four decades have seen “a very particular form of economic growth [...] allowed to ‘run wild’”(Martin, 2015, p. 236). Based on deregulation, privatisation and cheap credit, the neoliberal model has been both enabled and driven by a rapid expansion of finance, banking and household debt. In Eastern Europe, neoliberalism arrived about a decade later than in “the West”, but made up ground quickly in a process of “cowboy capitalism” (see Kooskora, 2004) where anything not directly forbidden by the law, was allowed. The resulting boom of the 1990s and early 2000s benefitted most developed economies, leading policy-makers to believe growth in economic centres would trickle down and reduce spatial disparity on the whole. However, it soon became clear some regions benefitted more than others, and in some cases, regional inequalities increased instead.

This tendency culminated in the late 2000s with the worst economic and social crisis since the early 1930s. And whereas crises of capital and uneven geographical development are not limited to neoliberalism, its ideology of market freedom over social responsibility does have an identifiable legacy of increased spatial segregation. While centres of capital accumulation flourished, those unwilling or unable to catch up, found themselves marginalised to what David Harvey has dubbed “the waiting room of history” (Harvey, 2005). Rather than implying that nothing happens in this “waiting room”, the analogy is useful for considering the potential agency and aspirations of regions and cities powerless at the periphery (see Kühn et al., 2017). Before going forward, it is this notion of periphery and powerlessness that I want to briefly elaborate on.

The traditional hierarchical classification of cities is based on population size, whereby a primary city is “the leading city in its country or region, disproportionately larger than any others in the urban hierarchy”(Goodall, 1987). Tallinn, for example, where about half the population of the nation lives, is the singular primary city of Estonia. In other contexts, a conurbation of primary cities might exist as in the case of the Randstad in the Netherlands. Conversely, the traditional definition of secondary cities is less clear and highly contextual. When the discourse was first popularised in the 1970s, secondary cities were defined as urban settlements with at least 100,000 inhabitants (Rondinelli as cited in Roberts, 2014) and the UN-Habitat currently sets the upper limit at 500,000. Nevertheless, in China secondary cities now exist with populations over five million. A contemporary definition of secondary cities based on population size sets the range between 10-50% of the country’s largest city (Roberts and Hohmann, 2014). However, this simplistic differentiation of urban hierarchies based on population size has been challenged by the emergence of global urbanisation (Sassen, 2001) and the growing speed of circulating capital, goods and people (Adams, 2019).

As “cities are replacing nation-states as the primary economic governance and driver mechanisms for trade and investment” (Roberts, 2014), urban hierarchies are increasingly defined by economic geography, rather than sheer population. The status of cities is now mainly established by connectivity to and function within national,



regional and global networks of exchange. Those peripheral to these networks of exchange and unable to “catch up” with the dynamics of capital, “are thereby presumed to be incapable of shaping their own history let alone influencing developments elsewhere”(Harvey, 2005). This is the “waiting room”, which urban developers fear the most and the reason for the perpetuation of the growth myth. It is why the aim of the urban policy of most cities, but especially secondary cities and cities under the conditions of post-socialism which already face depopulation and stagnation, is to strive for an identifiable function within the global marketplace of cities as well as to possess the infrastructure to capitalise on it. It is crucial to understand that the pattern of uneven geographical development which results from these urban hierarchies is a process of cumulative causation, not only of economic growth but political-institutional evolution (see Loewen, 2018, on regional policy in Central and Eastern Europe). Neither natural nor inevitable, it is a feature of the global spaces of economic geography and subject to regional policy.

### 3. Mobility as the great equaliser?

In terms of economic geography, Estonian secondary cities are located in a so-called “double periphery”: liminal in relation to the European core since re-independence (see fig. 3), but also distant from and in comparative decline to primary cities in the region (see fig.4). When combined with the rapid changes since re-independence and the “spatially blind” (see ECA, 2020) approach to regional policy along neoliberal lines of prioritising competitiveness, regional inequality is abundant. For the Estonian state as well as the EU, the main tool for tackling the spatial effects of the “double periphery” is the Rail Baltic (RB) mobility megaproject. Portrayed as the “project of the century” (RB, 2021), it aims to better connect the geographically liminal Estonia, Latvia and Lithuania to the European Core by constructing a European standard gauge fast rail network. Whereas at different times a functional passenger rail connection has existed between the Baltic States and Central Europe, the countries currently operate a Russian standard gauge network, which is incompatible with the core countries. Furthermore, the majority of the existing lines date back to the first wave of constructing rail infrastructure, when Russia was still ruled by an emperor.

A fast rail connection to Europe has been a strategic goal for the Baltics since gaining their re-independence in the 1990s (see Andžans, 2016; Veebel et al., 2018). When the region joined the EU in 2004, RB was defined as one of the main regional challenges in the Baltics transport sector (see BCM, 2005). In part, this is a recognition of the symbolic geopolitical value that shared physical infrastructures present: a way to cast in concrete the overall political, social and economical westward shift of the region. However, it is also—very practically—tasked with countering decades of constructing east-facing infrastructure under the Soviet Union, which resulted in the Baltics becoming a “transport peninsula” (Andžans, 2016). RB is seen as a “tool for development” (Telička, 2006), which would not only fuel growth on the national level but also in the cities it passes through. In this sense, RB fits neatly into the growing body of literature which narrates urban development through its material infrastructure and circulation.

The historical significance of mobility infrastructures in fostering urbanisation is clear and well documented (see Schievelbusch, 1977; Latour, 1996; Sassen, 2001; Graham and McFarlane, 2014; Amin and Thrift, 2017; Adams, 2019). Their ability to “annihilate space

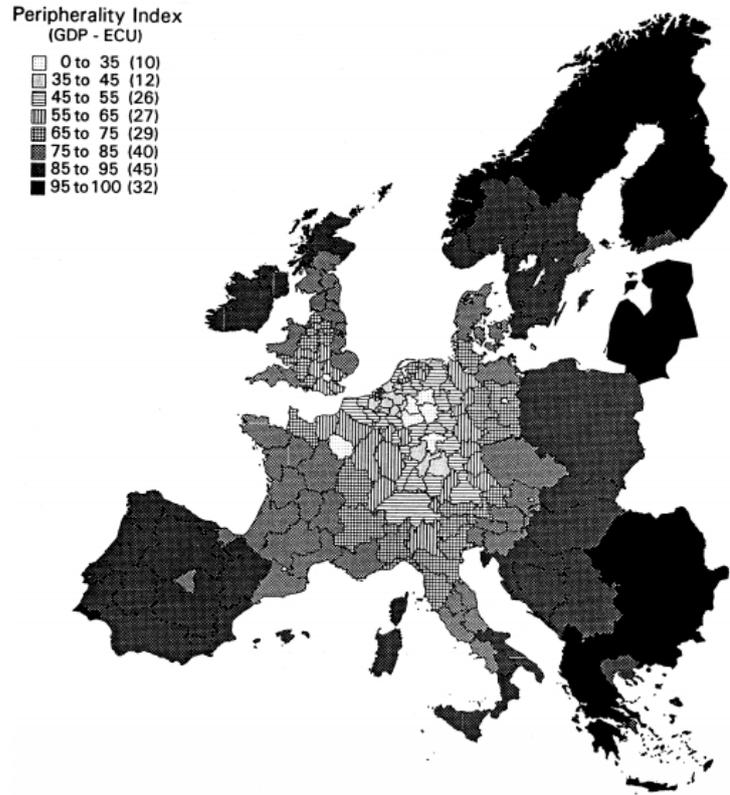


Figure 2. Peripherality European index, 1994. (Source: Schürmann and Talaat, 2000)

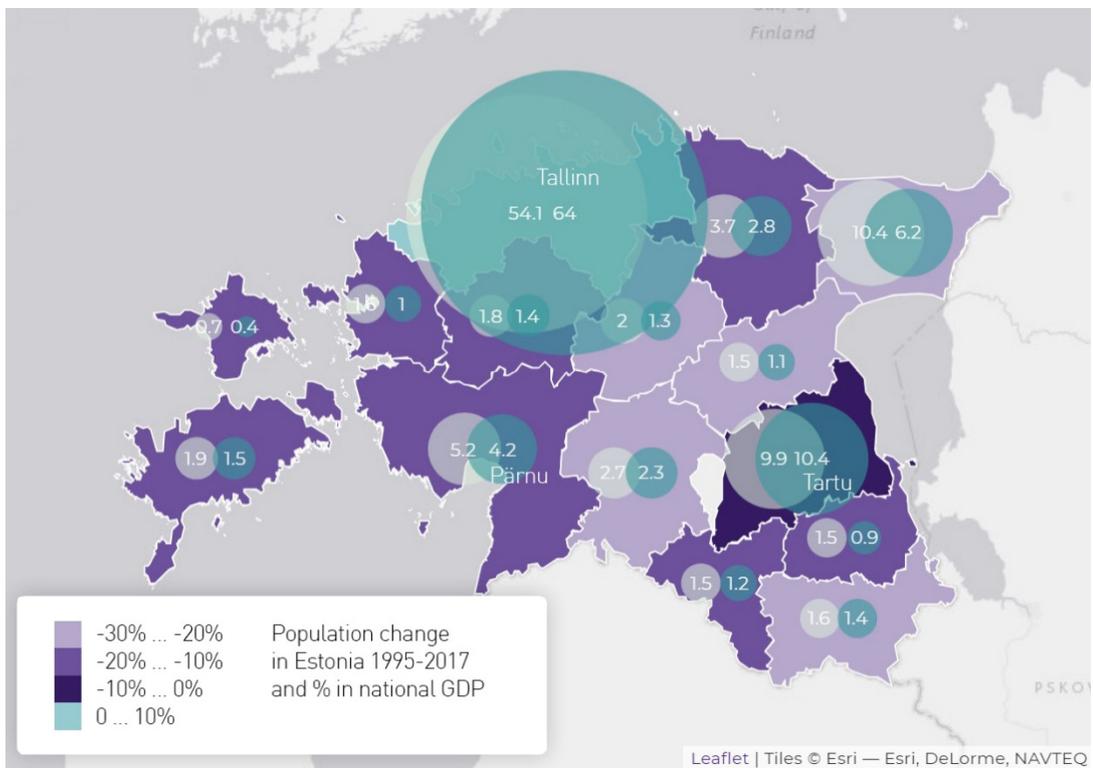


Figure 3. Population change and significance in the national GDP regionally in Estonia, 1995-2017 (Source : ECA, 2020)



by time” by performing “time-space compression” (Harvey, 1990) has been the foundation of growing urbanisation since the industrial revolution. Since then it has become clear that “time-space compression” is neither linear nor uniform: distances between some places are compressed more than others. It is clear that as the world becomes more urbanised, the social, economic, political and environmental significance of infrastructures will only grow (Graham, 2010). And in the contemporary context of globalising urbanity, “power, wealth and status increasingly belong to those who know how to shrink space, or know how to benefit from space being shrunk” (Flyvbjerg et al., 2003, p. 2; see also Castells, 2001; Sassen, 2005; Easterling, 2014).

Therefore decisions regarding what to connect, how, when and where, are singularly significant opportunities for (re-)shaping cities and the lives of citizens. The next section focuses on the city and region of Pärnu from this perspective. It is my aim to highlight some of the actors set to gain from the development of RB and question their motives in respect to the spatial challenges facing the city. Throughout the section, I will pose a series of questions, which will be collectively addressed in the later analysis.

#### 4. Questioning the answer

Pärnu is a secondary city in both the traditional and contemporary sense. As the fourth largest city in Estonia, it has about 10% of the population of Tallinn. In terms of its particularity within economic geography, the city is popularly known as the “summer capital” because of its coastal location and numerous resorts. Among locals, Pärnu is also dubbed the “Florida of Finland”, due to the many seasonal tourists as well as landowning visitors from the neighbouring country. Nevertheless, the majority of the workforce of Pärnu is employed in agriculture, forestry, fisheries and construction. Whereas the GDP of Pärnu has been steadily increasing, its significance in the total GDP of Estonia has been in constant decline (fig 2.). While Pärnu does possess a few nationally relevant cultural institutions, it lacks a significant function as a centre for public administration or higher education. In Estonia, these roles are reserved for Tallinn and Tartu. In terms of key infrastructures, Pärnu is placed along the main north-south motorway in the Baltics and has a small passenger and industrial harbour. The regional airport is currently out of service, as is the railway.

Until February 1992, it was possible to travel from Tallinn to Riga and onward to Central Europe via Pärnu by train. The service was discontinued as part of the post-independence restructuring of the rail providers. The last passenger service to Pärnu arrived from Tallinn in December 2018, after which the current infrastructure was deemed uneconomical to repair. The current relationship between Pärnu and rail traffic is on hold until 2026 when Rail Baltic is slated to become operational.

Former mayor and current member of the city council, Toomas Kivimägi is one of the most outspoken local proponents of the project, describing its opening as “a day when the world will change: for us, the people of Pärnu, when the first train departs” (Kivimägi, 2021). He goes on to employ developers’ lingo when describing RB as a “paradigm shift affecting the “availability” [quotation marks in original], competitiveness, attractiveness and safety” of Pärnu. This leads me to my first question: is this “paradigm shift” in line with the spatial challenges outlined in strategy documents and to what extent can it be expected to benefit the existing population?

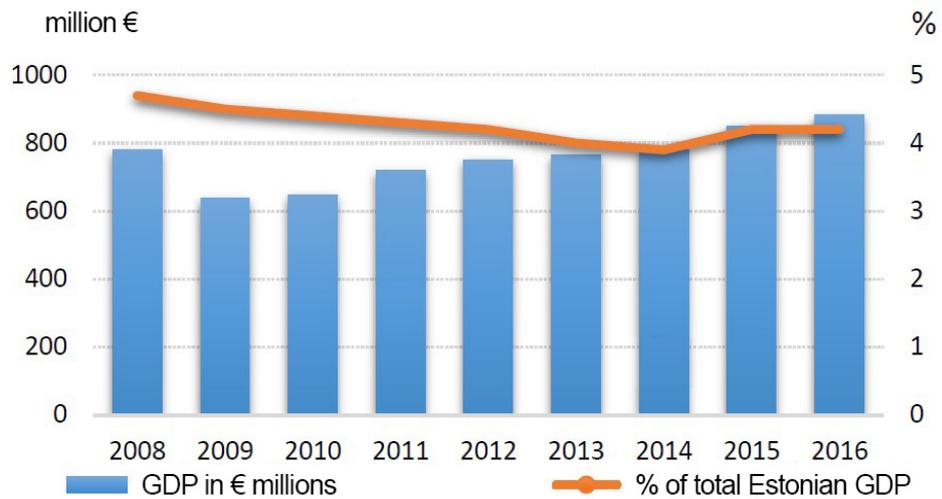


Figure 4. Pärnu GDP and % in total Estonian GDP (Source PCC, 2018)



Figure 5. Pärnu and its two centres (Source: Author and OpenStreetMap)

Pärnu's regional development strategy clearly displays the desire to above all exit “the waiting room of history” and reclaim a sense of power and centrality. In other words, to unbecome a secondary city. As a result, success is increasingly measured

with comparative external metrics, rather than qualitative internal ones. For example, the city defines its desired position in 2035 as “creating a living environment which is competitively distinctive”(PCC, 2018: 3). To unpack this goal, I will highlight a few of the primary challenges the city has defined for itself. First, population decline by suburbanisation and relocation to Tallinn. Second, the somewhat balancing immigration from other parts of the country or from abroad which results in a stagnating population. Third, the socio-spatial effects of suburbanisation and the need to combat these by “planning according to the needs of the populace” and with “more emphasis on [the] integrated development of the city” (ibid.: 6-12). In practice, this is to be achieved by strengthening the position of the city centre, which has now gravitated from the historical to the central business district. This is however complicated by the “second centre” of the city (fig. 3) in Papiniidu, a peripheral district of shopping malls, manufacturing enterprises and automotive infrastructure, which enables suburbanisation, instead of countering it. This is also where the future Rail Baltic terminal will be constructed, adding to the significance of the area and further fuelling development. Recognising this, the regional development strategy clearly outlines the need to support the spatial integration of the area around the terminal and its connection to the rest of the city. However, will Pärnu have the resources for developing both of its “centres” (see fig 4.)?



*Figure 6. The current situation in Papiniidu, the location of the new terminal, and the master plan (Source Pluss Architects, in Koppel, 2017)*



Figure 7. The future Pärnu Rail Baltic terminal (Source: Pluss Architects in Koppel, 2017)

My next question comes from a linguistic curiosity employed by the architects of the Pärnu RB terminal. Echoing the vocabulary of the start-ups which are part of the promotional self-image of e-Estonia, they describe the terminal area as “a unicorn on the Pärnu riverside, between two airports (Miller and Jagomägi, 2021). The use of the term seems to suggest latent potential, waiting to be discovered or unlocked by the addition of mobility infrastructure. However, “unicorn” start-ups are primarily defined by rapid growth above all other considerations. The so-called “get big fast” strategy, also known as Blitzscaling, is primarily centred around rapidly increasing market share and steamrolling competition in the process (Sterman et al., 2007), rather than sustainability and quality. Although admittedly exciting, this approach is remarkably shortsighted and destructive for the region and the city. Furthermore, if the ultimate goal of a “unicorn” is to be flipped for fast profit after which serial entrepreneurs move on to the next project, why would a city want to be defined as such?

Despite significant enthusiasm on the part of the architects and the municipality as the developers, connecting Pärnu with RB is not without inconsistencies on the local level. First of all, Pärnu desires to be more competitive within established regional urban hierarchies. As such it can not afford to pass on the connectivity RB offers. Nevertheless, it is unclear whether the city can literally afford the spatial shift the peripherally placed infrastructure presents, as it would undoubtedly rival the existing city centre and channel away resources which could have been used for densification instead (fig. 4). This suggests prioritising a potential desirable future population over the existing inhabitants. Perhaps clues about the true beneficiaries of RB in Pärnu lay in the architecture of the shining titanium-clad suspended futurist oblong of the terminal building (fig. 5). The final question in this section is borrowed from architecture critic Rowan Moore’s 2012 book “Why We Build”:



*[The] question is whose desires are we witnessing? Whatever thrill might be had from large and unusual objects is experienced above all by the developers and architects who design them and get them built. Everyone else is a spectator, a passive gawper. Extravagant skylines leave the spaces in which most people spend their time untouched. There is little interplay of their lives with the frozen computer games above their heads.*

In the book, Moore is discussing the outlandish skyscrapers and manmade islands of Dubai, but the sentiment also applies to the future RB terminal hovering over peripheral Pärnu and the effect the new mobility infrastructure will have on the region. With growth and competition still the driving forces behind regional development strategies, the benefits from Pärnu's future "paradigm shift" to "unicorn" status is likely to be contained to those with the ability to directly monetise on it.

## **5. Analysis and conclusion**

On the whole, RB is unlikely to counteract rising regional inequality. In fact, it might add to it. In the case of Pärnu, the peripherally located terminal will complicate the municipal aim of densification. As much as RB is hoped to bring in new jobs and investment to the region, it can in fact accelerate the flight of labour. The most likely short-term scenario is an acceleration of the existing fluctuations in population, where suburbanisation and relocation to Tallinn and potentially to Riga is roughly balanced by migration from other parts of Estonia and from abroad. However, this policy of competitive attractiveness, is far from sustainable, as each secondary city can only succeed at the expense of others in the same situation (see Sousa & Pinho, 2013).

The city and region of Pärnu are well aware of the socio-spatial challenges they face and share with other secondary cities in post-socialist Eastern Europe. However, many of these are beyond the scope of the municipality and belong to the realm of regional policy, of which RB is an integral part of in Estonia, the Baltic States and the EU. Therefore the unwavering optimism of the city council regarding the potential economic and political benefits ushering in a paradigmatic shift in the role of Pärnu is understandable. The true paradigm shift, however, would be to prioritise social responsibility to the existing population and reject the notion of urban hierarchies perpetuated by neoliberal market strategies. Instead of expecting for a literal train to arrive in order to leave "the waiting room of history", it would redefine the aim of urban development beyond competition and growth toward well-being and quality of life, which has long been called for by planners and theorists alike (see Tintëra, 2019).

My argument here is not against infrastructural development. Instead, it is against the simplistic assumption that any kind of mobility upgrade is necessarily beneficial for the majority. While bottom lines have ballooned for primary cities across Europe, so has regional inequality and for numerous decades the whole has been let run wild. In Estonian and other European post-socialist secondary cities, these spatio-economical transformations and the rise in regional inequality have been especially rapid, leaving gaps in civil society and legislature, which enable continued exploitation by opportunists. In order to maximise the positive and minimise the negative effects of RB for Pärnu locally, its planning needs to be dynamic and continually adjusted to best fit the actual needs of the region and its population. For this, both planners and politicians must continuously engage local stakeholders, including the wider populace, facilitating meaningful input over projects impacting the socio-economic conditions and the infrastructural underpinnings of their lived environment.

Instead of looking to Tallinn or Riga as aspirational benchmarks, Pärnu can learn from the success of other secondary cities such as Valga in the south of Estonia, or

Rapla in the centre. It must prioritise its existing spatial heritage and social capital and begin dismantling the persisting path dependence on growth in urban planning. In doing so, Pärnu might find itself reframing major infrastructural renewal to benefit the majority, rather than the already economically empowered minority.

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# Learning From the Past: How to Create Sustainable Mass Produced Buildings Today?

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## ABSTRACT

*Mass produced buildings form a significant part of the post-socialist urban heritage as they have proven to be an efficient answer to the housing crisis after WWII. However, many of these buildings and neighbourhoods became obsolete quickly, causing a negative perception of industrialised housing. In contrast, today, in countries like the UK, the popularity of off-site manufactured and even modular buildings is rising, as their construction is quick, predictable, and clean compared to other solutions. This paper examines how the lessons learnt from historical examples could help ensure the sustainability of contemporary mass manufactured buildings. The study is supported by architectural examples and results from an online survey focusing on the required uniqueness of homes. Findings include that while people are negative about seeing completely identical buildings to theirs regularly, their attitude becomes neutral if materials and colours of the façade differ, and they are generally positive about the similarity of interiors. Such findings imply that significant changes can be achieved in the perceived value of mass produced buildings even with low-cost, retrofitted solutions. Therefore, this study helps to understand both the ways to create sustainable mass manufactured buildings and the possibilities to preserve and renew the existing building stock.*

## KEYWORDS

*sustainability, standardisation, mass production, residential buildings*



*Figure 1. Prototype for a new mass-manufactured apartment building series at Laing O'Rourke's Expl'ore Manufacturing (Source: Réka Mándoki, 2019)*

## **1. Introduction**

The mass housing projects of the 1970s fundamentally reshaped the urban texture of cities and industrial centres in the East Block and are influential on urban development to this day (Engel, 2019). A critical examination of standardised buildings is essential to draw appropriate conclusions about their applicability, to provide adequate solutions for rehabilitation, and to use these lessons to create more sustainable mass housing solutions in the future.

The relevance of this topic stems from the fact that as a response to current economic and environmental issues, mass manufacturing residential buildings seem again financially and ethically viable in many countries, for example, in the UK. On the one hand, there is an increasing need to put the construction industry on a more sustainable track to achieve international sustainability goals by reducing construction waste and embodied carbon (Orr et al., 2018). On the other hand, most developed countries face further problems, including the shortage of skilled labour, low productivity rates (McKinsey Global Institute, 2017), extreme urbanisation (Ritchie & Roser, 2019), and housing crises. The causes of the housing crises include social problems such as large-scale property investments (Farha, 2017), poor construction productivity (McKinsey Global Institute, 2017), and harmful consumer attitudes (Habraken, 1972).

Unfortunately, individual actors in the construction sector have minimal impact on these phenomena and trends. Still, many stakeholders believe that factory-made housing could be part of the solution for these challenges.

In this paper, lessons learnt from mass produced and standardised residential buildings will be reviewed to inform design strategies and criteria for contemporary

mass manufactured buildings and strategies to deal with the relevant urban heritage. As part of this review, historical examples will be presented along with some results from the Sustainability of Standardisation (SUSOSTA) research project about the required diversity of residential buildings.

## 2. Background

### 2.1 History of standardised mass housing projects

Prefabrication has proven to be an efficient method of providing housing over the past centuries, and it is considered *'the oldest new idea'* in the construction industry (Blanchet & Zhuravlyova, 2018). Since the 19<sup>th</sup> century, with increasingly advanced industrial technology, numerous off-site manufactured and standardised buildings have been produced, primarily to handle situations where custom solutions would have been too slow or expensive. Still, most people associate mass produced and prefabricated buildings with the ones built after World War II, as these buildings have fundamentally changed urban landscapes.

The housing crisis after World War II created a suitable socio-economic environment to the rapid spread of mass produced buildings with the shortage of skilled labour, the wish to keep factories working despite the decline of the military industry, and the vast need for affordable housing (Blanchet & Zhuravlyova, 2018). These new buildings include quick temporary homes, cheap permanent buildings, and even examples of high-quality architecture, like Le Havre City centre, which is a UNESCO World Heritage Site.

Nevertheless, the term 'standardised building' evokes images of the soviet type large prefabricates for most people. In the Soviet Union, the first attempts at creating standardised buildings go back to the 1930s. Still, it was 1958, when, by combining the knowledge from past local attempts and the imported Camus system large-panel production reached a mass scale, and the first generation of mass housing systems was born (Meuser and Zadorin, 2015). As the main aim was to create the most housing in the shortest time, ornaments and unique design solutions were omitted from the plans to make buildings cheaper (Panteleyeva, 2016). By the end of the '70s, all countries in the Soviet Union adopted the technology and started production. The imported solutions were developed further, so each factory manufactured individual designs. As a result, both the quality and the maximal height of the produced buildings evolved over time. There is no doubt about the success of the programme: to this day, 170 million people live in these buildings worldwide (Meuser and Zadorin, 2015).

Soon, however, quite a few problems came to light. The uniformity and rootlessness of the buildings proved to be alienating in the long run (Kronenburg, 2013). Moreover, the mass housing model could not ensure the proper maintenance of the buildings, and it turned out that major renovations were impossible without external help (Engel, 2019). Finally, the collapse of the Soviet Union and the closure of the factories sealed the fate of these buildings.

In contrast, in the West, industrialised housing has been continuously part of the housing mix, and many of the contemporary examples (like the ones in Figures 1 and 2) are considered fashionable and progressive. As a result, many people believe that with mass manufacturing, and especially with mass customisation, new paths can be opened up to address not only environmental and efficiency issues but even the traditional problems of mass production (New London Architecture, 2018).



*Figure 2. Prototype for a new mass-manufactured detached house series at Laing O'Rourke's Explore Manufacturing (Source: Réka Mándoki, 2019)*

## **2.2 Lessons from the socialist urban heritage**

Standardised and off-site manufactured buildings can provide housing quickly and meet a predictable, fairly high standard (New London Architecture, 2018). However, existing examples also demonstrate the risks related to these building types. Four key aspects of standardised construction were identified where lessons learnt from the mass housing projects of the Soviet era could help to make future constructions more sustainable. These are optimisation, adaptability, end-of-life use, and diversity.

As we have seen, originally, optimisation in the Soviet examples focused mainly on cost-optimisation. But today, optimisation processes could also involve aspects related to sustainability and user experience, which is a rather attractive option.

However, successful optimisation requires that what is designed gets built without significant modifications in the construction phase. Today, when the industrial practice expects designers to make quick decisions, it is almost impossible to find the best solutions. Therefore, to enable the potential in optimisation either the optimisation process should be accelerated, or design processes should be simplified, for example, by creating standards or type catalogues. This latter would also make another, more gradual type of optimisation possible. With enough time and large quantities, the issues related to the prototype nature of custom constructions could be mitigated. As time passed, even the mass housing units of the 1970s started getting better, for example, from the perspective of their thermal properties and constructability.

However, despite the gradual improvements, in many projects, the applied large-panel technology prevented significant changes in layouts e.g., the reconfiguration of floor plans and the creation of larger flats. Many buildings were hardly adaptable: the structure did not provide enough opportunities for residents to renew their living space and most mechanical systems ran in small, inaccessible shafts, so their replacement was almost impossible while the building is in operation.

Contemporary architects in the 1970s have already identified these issues with adaptability. In the Western world, for example, Habraken (1972) and his colleagues made considerable efforts to raise awareness of the unsustainability of the mass housing projects. They introduced and implemented the famous support + infill model,

experimented with collective housing concepts and participatory design, and initiated the Open Building Movement.

In their projects, summarised by Kendall and Teicher (2000), those parts of the buildings that were planned to last were optimised and standardised, and all other elements were subject to customisation. They considered load-bearing structures to be the most durable and least movable elements in buildings. These were designed to support as many internal configurations as possible and not be too specific, but also not oversized. Mostly beam and column structures were used to provide the greatest freedom for the design of both interiors and facades. Facades, electrical and mechanical installations were fully separated from the structure and designed to be accessible to make it easier to replace them. Today, when, in line with the European waste strategy, the main aim of the sector should be to extend the existing assets lifetime and reuse them without down-cycling, the works of the Open Building Movement seem extremely relevant.

Thinking of potential end-of-life scenarios may be almost as important as designing for adaptability and flexibility. The story of the High-rise of Pécs demonstrates this rather well. This 25-storey high residential tower was constructed in the 1970s and was designed to be more adaptable than the other prefabs created at that time. Columns were used as load-bearing structures, so it was possible to create open layouts and incorporate non-residential functions. The shafts were located next to the corridor, so it would have been possible to repair or change the mechanical installations. Residents also loved the building's unique atmosphere (Papp, 2014). However, soon after the erection, due to a construction error, the joints of the structure corroded severely (Molnár & Rabb, 2016), and residents had to be evacuated. It was the tallest empty residential tower in Central Europe until it got demolished in 2016, after decades of decay.

Although the underlying cause was a construction issue and the demolition of the building was a symbolic act with political motivations, this example shows what can happen to most large prefabs at the end of their lives. These buildings are huge assets, requiring lots of money to refurbish them. This is financially not viable in many cases as it also costs a lot to remove these buildings so they may remain in their places in a potentially dangerous state for a very long time. If at least the structural elements were reusable without down-cycling to create new buildings, the outdated buildings would keep much of their values even if they were no longer needed in their original place.

In sum, it seems to be essential to create only such buildings in the future that are optimised, adaptable, last as long as possible, and remain useful even at the end of their life cycles. But what criteria can be defined about the required uniqueness and customisability of these buildings?

### **3. Diversity requirements of standardised residential buildings**

As part of the SUSOSTA research project, we conducted multiple online surveys to investigate the required uniqueness of homes and the prejudices people may have toward mass produced buildings (Mándoki & Orr, 2021). These investigations included an exploration of diversity requirements, which seemed particularly relevant for determining how the industry could build on past attempts of standardised mass housing solutions. One of our main aims was to explore the required uniqueness of homes within the owners' reference group. Hence, it was hypothesised that people would not mind living in a standardised home, but the majority would not want to have it similar to the ones they frequently see.

### 3.1 Methodology

To verify this hypothesis, an online survey was created, where participants had to imagine and evaluate how they would feel if they had to see another home similar to theirs at a given frequency both from outside and inside. The described similarity levels were the following in the exterior block:

- Completely identical buildings (CIB), where all main features of the buildings were the same, including massing, openings, ornaments, materials, and colours.
- Almost identical buildings (AIB), where massing, openings, ornaments were the same, but materials and colours differed.
- Quite similar buildings (QSB), where proportions, colours, and materials were the same, but massing, openings, and ornaments differed.



*Figure 3: Two examples for Completely Identical Buildings (Source: Left: FORTEPAN / Lechner Nonprofit Kft. Dokumentációs Központ - VÁTI, 'Ősz utca a Szekfű Gyula utca felől nézve', 1971, licence: CC BY-SA 3.0, Right: Réka Mándoki, 2019)*

In the interior block similarity levels were:

- Almost identical flats (AIF), where only movable furniture was different, and all permanent features of the flats were the same, including built-in furniture, coverings, places of walls and openings.
- Flats with the same room arrangement (SRA), where coverings and furniture were different, but all walls and openings were the same.
- Similar flats (SIM), where furniture, coverings, and interior walls and openings were different, but shafts, and exterior walls and openings remained the same.

Images helped respondents imagine the described similarity levels. In the exterior block, for each level, four pictures of different building types (e.g., blocks of flats, detached and semi-detached houses) were shown. In the interior block, pictures taken of a rendered 3D model were used. Figures 3 and 4 present exemplar visuals used in the two blocks.



Figure 4. Two flats with the same room arrangement (SRA) – image taken of a rendered 3D model

Participants had to imagine how they would feel seeing the other building daily (DLY), regularly (REG), a few times (FEW), or if they just knew that it existed without seeing it (NEV). The daily option was omitted in the interior block, considering that most people do not visit other homes daily. Respondents evaluated scenarios on a 7-point Likert scale, ranging from -3: extremely negative to 3: extremely positive. It was assumed that visiting a random flat or seeing another building is a neutral experience. All possible combinations of frequencies and similarity levels were shown to all participants, but the order of the questions was randomised to mitigate the effect of fatigue or getting practised (Holt and Walker, 2009).

Prior to the data collection, the survey underwent an ethical review and received approval from the host department's Research Ethics Committee.

Responses were collected for three consecutive weeks with opportunity sampling due to its simplicity and cost-efficiency. During this time, the survey was advertised on multiple online platforms, including the project's webpage and targeted advertisements on social media sites. As an incentive, respondents could enter a prize draw to win a £50 Amazon voucher. Respondents could terminate the survey between the exterior and the interior block, and those who indicated that they didn't understand fully the definition of the similarity levels were excluded from further analysis. All questions were optional, and responses got fully anonymised before analysis.

### 3.2. Results and Analysis

In total, 228 participants completed the interior block, and 189 people finished the exterior block. Approximately 70% were from Hungary, 22% from the UK, and 8% from other countries. 54% were young adults between 18 and 30, 25% were between 30 and 60, 19% were above 60, and 2% didn't answer. 48% of the respondents were males, 51% female, and 1% preferred not to answer. The demographic data differed only slightly ( $\pm 3\%$ ) between respondents of the two blocks.

The results were evaluated by Jamovi, a free statistical software. For analysis, 2-tailed Wilcoxon Signed Rank tests were used, a non-parametric test suitable for ordinal data. In these tests, the null hypotheses were that the sample median equalled zero. The results and test statistics are summarised in Table 1.

**Table 1: Required uniqueness of homes  
2-tailed one-sample Wilcoxon Signed rank test results**

Variable	n	M	Mdn	W	Z	p	r	Effect
<i>CIB<sub>DLY</sub></i>	186	-0.83	-1.0	1744	-7.01	.000	-.51	moderate
<i>CIB<sub>REG</sub></i>	186	-0.38	0.0	2914	-3.57	.000	-.26	low
<i>CIB<sub>FEW</sub></i>	186	0.16	0.0	3423	1.73	.083	.13	-
<i>CIB<sub>NEV</sub></i>	186	-0.10	0.0	528	-1.72	.086	-.13	-
<i>AIB<sub>DLY</sub></i>	186	-0.10	0.0	3159	-1.13	.260	-.08	-
<i>AIB<sub>REG</sub></i>	186	0.15	0.0	3571	1.60	.110	.12	-
<i>AIB<sub>FEW</sub></i>	186	0.51	0.0	4073	5.47	.000	.40	moderate
<i>AIB<sub>NEV</sub></i>	185	0.12	0.0	953	1.57	.116	.12	-
<i>QSB<sub>DLY</sub></i>	183	0.00	0.0	3599	0.20	.843	.01	-
<i>QSB<sub>REG</sub></i>	183	0.22	0.0	3402	2.46	.014	.18	-
<i>QSB<sub>FEW</sub></i>	183	0.56	0.0	4003	6.32	.000	.47	moderate
<i>QSB<sub>NEV</sub></i>	183	0.14	0.0	817	2.30	.021	.17	-
<i>AIF<sub>REG</sub></i>	223	-0.20	0.0	4575	-2.09	.037	-.14	-
<i>AIF<sub>FEW</sub></i>	223	0.22	0.0	5043	-2.42	.015	-.16	-
<i>AIF<sub>NEV</sub></i>	223	0.02	0.0	1136	0.42	.673	.02	-
<i>SRA<sub>REG</sub></i>	223	0.03	0.0	4477	0.69	.493	.05	-
<i>SRA<sub>FEW</sub></i>	223	0.44	0.0	6494	5.11	.000	.34	low
<i>SRA<sub>NEV</sub></i>	223	0.11	0.0	947	2.09	.037	.14	-
<i>SIM<sub>REG</sub></i>	228	0.41	0.0	5409	5.26	.000	.34	low
<i>SIM<sub>FEW</sub></i>	228	0.62	0.0	6524	7.26	.000	.48	moderate
<i>SIM<sub>NEV</sub></i>	228	0.21	0.0	898	3.98	.000	.26	low

These results show that the participants were negative only about seeing completely identical buildings to theirs daily and regularly, and their attitude became neutral when the materials and colours of the façade were different. Moreover, more than 70% of the participants, was completely neutral about the theoretical possibility of the existence of similar dwellings, provided that they did not have to see them. In addition, less than 6% of the respondents had a strong negative opinion about these scenarios, even in cases of *CIB<sub>NEV</sub>* and *AIF<sub>NEV</sub>*. In addition, many of those tests, including *AIB<sub>FEW</sub>*, *QSB<sub>FEW</sub>*, *SRA<sub>FEW</sub>*, and *SIM<sub>FEW</sub>*, became positive where respondents saw the other similar dwelling only a few times.

### 3.3 Discussion

Results showed that the original hypothesis that people would not mind living in a standardised home, but the majority would not want to have it similar to ones they frequently see, was only partially correct. People would not mind standardisation if they didn't have to face it frequently, but their uniformity tolerance seems much larger than previously expected. The results indicate that quite extensive structural standardisation would not cause any disturbance, provided that the facades remain unique, and people can personalise the finish materials and furniture in the interior.

Moreover, results indicate that people prefer the similarity of buildings they rarely see to their homes. Considering the relatively low number of apartments one sees regularly, this result suggests that even with only a few different layouts, it would be possible to cover the needs of many from this aspect.

These findings imply that even with low-cost, retrofitted solutions, significant changes can be achieved in the perceived value of existing mass produced buildings, and with custom facades, otherwise completely standardised buildings can be made socially acceptable.

#### 4. Conclusions

This paper investigated how lessons learnt from existing mass produced buildings could ensure the sustainability of future, potentially mass manufactured, mass housing projects.

Historical examples showed that adaptability is essential to extend the lifetime of any buildings, and a few practical design strategies (e.g., providing accessible shafts and reconfigurable spaces) were listed. It was argued that standardisation and mass production could help enable the optimisation potential in buildings, and it could even focus on aspects like sustainability and resident experience. Reusable structural elements could also grant proper end-of-life use for these buildings.

The required diversity of standardised homes was examined in detail with an online survey focusing on the diversity requirements within the respondents' reference groups. Results showed that standardised buildings could be socially sustainable from this aspect, provided that they are not entirely unified externally. However, future work could further nuance the image of the required diversity of these buildings by examining streetscapes created of standardised buildings.

In conclusion, this paper listed four aspects of the heritage of socialist mass housing projects that are still relevant today. The findings underpin that past examples of standardised buildings, which are frequently neglected in the architectural discourse, can indeed serve both as an important source of knowledge and inspiration for future projects.

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# 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/](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 21<sup>st</sup> 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).

## ACKNOWLEDGEMENT

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# Urban Resilience in Post-socialist Cities: a Descriptive Comparative Study between Courtyard Block and Panel Housing

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## ABSTRACT

*In the past decade, urban resilience gained prominent interest in the research field; due to adverse events posing new challenges on communities and societies in cities around the world. Resilience is a dynamic concept that depends on various aspects, but it mainly deals with continuous adjustments and flexibility rather than returning to normality. Cities are a consequence of a complex and long-time spanning process resulting in a mixture of urban patterns that have diverse characteristics that affect the quality of life within the neighbourhood. The research aims to address the impact of urban block characteristics versus panel housing estates in Budapest on the city's social resilience; by conducting a comparative descriptive study adopting qualitative methods that focuses on analysing the traditional European courtyard block and socialist panel housing concerning their environment, accessibility, and physical characteristics and their relation to social resilience and liveability. The results do not favour an urban pattern but suggest development measures in both cases to achieve better urban resilience and liveability.*

## KEYWORDS

*Social resilience, courtyard block, housing estate, post-socialist, liveability.*

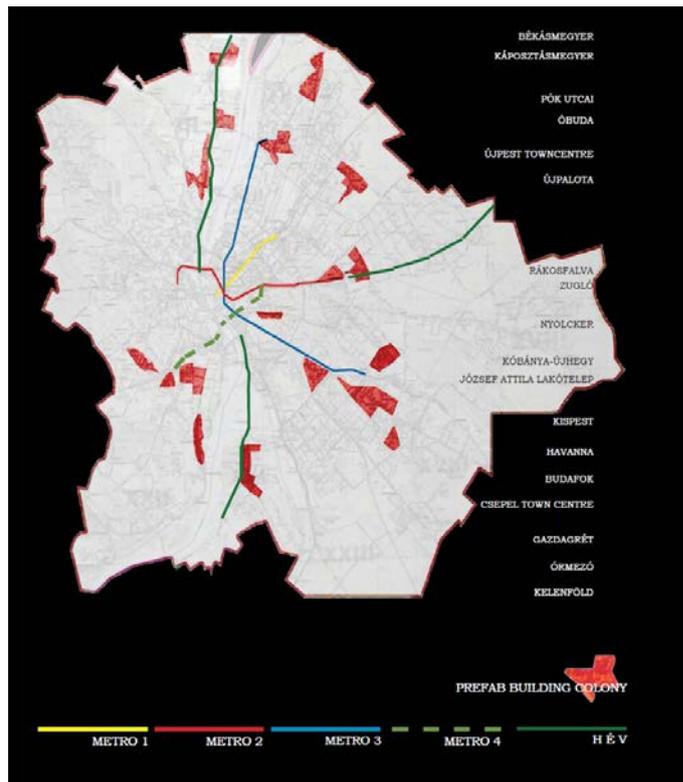


Figure 1. Location of a large estate area in Budapest. (Source: (Csaba, 2006))

## 1. Introduction

Calamitous events are posing new challenges on communities and societies in cities around the world, especially in the high occurrence of natural disasters and hazards such as floods, earthquakes, and tsunamis (Jessica Weinkle, et al., 2018). In response to disaster uncertainties, and to reduce the risks of disasters and natural hazards, researchers have developed several assessment methods and tools of resilience. And in recent years, city resilience turned into a prime part of urban planning and management strategies (Shamsuddin, 2020). Resilience is defined as the amount of disturbance an urban system can absorb and remain within the same state or domain of attraction. Or the degree to which the system can build and increase its capacity for learning and adaptation (Folke, et al., 2004). The unpredictability of an urban crisis drives a reactive measure rather than a responsive one. Therefore, a meticulous approach to urban resilience is needed, and it starts from scrutinising all the city's systems and their role in resilience. The unpredictability of an urban crisis drives a reactive measure rather than a responsive one. Therefore, a meticulous approach to urban resilience is needed, and it starts from scrutinising all the city's systems and their role in resilience. A question emerges regarding the resilience of our built environment, especially residential buildings; how they can accommodate future changes and provide a more satisfying quality of life for inhabitants, and how do the built environment affects liveability and social resilience within residential buildings.

Liveability is “the degree to which a place supports quality of life, health and well-being” (Lowe, et al., 2015), which indicates that a liveable neighbourhood should be safe, socially cohesive, high in amenity, environmentally friendly, and accessible. A healthy neighbourhood that provides quality of life, health, and well-being acquire merits such as a diverse range of housing, well-connected mobility systems from footpaths to public transportation, public open spaces, and social services.

This paper intends to study the social and urban resilience of Budapest city within two dominant urban patterns the panel housing and courtyard housing; by applying a comparative descriptive analysis that studies built-environment conditions and physical characteristics of both urban paradigms. And give recommendations for alterations and corrections of the built environment to enhance urban resilience.

### **1.1 Relation between the built environment and social urban resilience**

The development of urban planning theories and concepts was mainly associated with improving living conditions. The built environment contributes considerably to social resilience and urban liveability through several physical and space characteristics. However, physical, and spatial specifications are disconnected from the functional design requirements, producing non-resilience-built environments. (Tarcisio, Saurin, & Formoso, 2020). Although the concept of resilience is currently dealing with managing disasters, it is generally based on dealing with a poorly managed unexpected situation and has been discussed in many fields prior to urban design and planning; it was first applied in mechanics and following in psychology, and broadly in ecology (Alexander, 2013).

As the concept of resilience gained more attention in the past decade and has been used in many scientific fields, the complexity of investigating resilience across disciplines can be frustrating. Therefore, human-based resilience is analysed in combination with different modifiers such as climate, sociology, disaster, and ecology. (Wang, Hulse, Meding, Brown, & Dedenbach, 2020). Perceiving cities as complex adaptive systems means that attaining social resilience relies on improving the performance of city systems as for the environmental and built environment qualities, which designate the relation between urban system performance and resilience. Disconnecting urban systems in the urban planning process may increase the deleterious effects the urban environment has on its inhabitants that threaten people's health and wellbeing. (Estevez-Mauriz, Fonseca, Forgaci, & Bjorling, 2016).

## **2. Methodology**

### **2.1 Methodology and materials**

The research methodology is based on a descriptive comparative analysis of urban patterns in Budapest city; the research is built to assess social and urban resilience subject to post-socialist cities and neighbourhoods. The paper focuses on analysing the physical characteristics of the built environment, where it compares two urban patterns in similar settings; to provide future recommendations in both panel housing and block courtyard housing to promote urban resilience.

The methodology is based on three main phases; The first is to classify urban patterns in Budapest, the second is to define study cases within Budapest that share comparable settings, finally defining the built environment physical characteristics that affect social and urban resilience and liveability.

### **2.2 The historical residential block**

Throughout history urbanism of cities are often connected to their socio-cultural context. "Urban is the social meaning assigned to a particular spatial form by a historically defined society" (Castells, 1984), a concept that expresses the interrelation between the city elements, which can be found in the residential block as a dimension that creates a relationship between the built environment and the user. The courtyard



blocks or so-called the European block connects European cities urban pattern with their special historical defined characteristics, the distinguished residential block is culturally related to the mutual European identity, due to the common urban development of the region which is translated into the urban morphology and social characteristics, despite the diversity of European cities.

Courtyard residential block in Budapest dates back to the 18th century, building regulation in Budapest at the time established the main zones of court-yard buildings ,in addition, it controlled the pattern and the use of those buildings, as a result of this regulation, such as restrictions on building height, courtyard specification, and an 85% built area, the shape of the residential buildings was formed, therefore, developing the urban context of the city, this urban development led to a well-organized city with an orthogonal layout influenced by the Haussmann planning method (Sonne, 2009).

### **2.3 Panel housing history and characteristics**

Similar to most, the majority of mass housing properties were built during the communist period of the Soviet Union, influenced by the communist ideology. The "Socialist residential complex" a planning paradigm developed by the German academic Hans Schmidt has set the standards for mass housing. Mass housing solved the increasing shortage of housing in communist countries, also represented the ideology of communism as a notion. Planning was developed qualitatively based on a functional unit designed according to the number of inhabitants. Mass housing was famous for its large-scale buildings and plot homogeneity (Balla, Benkő, & Durosaiye, 2017).

In socialist times, housing estates in Central and East Europe were efficient in resolving the housing crisis, providing good conditions at a reasonable cost. But following the collapse of communism, panel housing units faced various consequences caused by the mass production of construction elements, where the prefabricated elements lacked repairability and building maintenance was neglected for long periods, ample degrading of the physical condition of building elements continued during the post-socialist period, which had a substantial influence on the housing overall living conditions. In recent years, the development of large housing estates in the former state-socialist countries has broadened the conventional perspective towards panel buildings. Following the political changes around 1990, these estates took very different pathways, ranging from decline to upswing, from ageing of districts to studentification of districts, from being popular to being stigmatized (Grossmann, Kabisch, & Kabisch, 2015). Budapest had 18 large estate projects (see Figure 1).

According to the Hungarian Central Statistical Office (Population census 2011, 2011), 71% of the panel housing projects in Hungary are built before the 80s, and after 40-years of construction, panel-buildings are still dominating the housing stock in Hungary with a share of 31% in Budapest, 39% in Debrecen, 52% in Miskolc, 38% in Szeged, 42% in Pécs, 41% in Győr, 50% in Székesfehérvár and 60% in Dunaújváros, within the overall dwellings. Based on the population census in 2011, 777,263 inhabitants and 51,914 tenantless people are living in panel housing. of whom 66% living in large panel system buildings (LPS), and 34% living in precast concrete (PC) buildings. (PC buildings -originally plastered and painted, while the LPS is not plastered). The average floor area of a flat in the large panel system building is 54 m<sup>2</sup>, while it is 69 m<sup>2</sup> in the precast concrete building.

### 3. Comparative Analysis

The case studies cover two urban patterns of Budapest's six urban neighbourhoods (see Figure 2). The first three are Havanna, Kobanya Újhegy, and Kelenföld housing states representing the post-socialist housing pattern and a selected neighbourhood in District V, District VII, and District IX in Budapest representing the block (courtyard housing).

The panel housing estates are in the tenth, eleventh and eighteenth districts of Budapest. Havanna housing state Kobanya Újhegy is located to the east side of the Danube (Pest side) bank while Kelenföld is on the west side (Buda side); they were built between (1966-1986) using prefabricated elements. Table 1 demonstrates the location, area, and density based on the population of selected cases.

The fifth, seventh, and ninth districts of Budapest are considered the heart of the city called Belváros-Lipótváros (English: Inner City – Leopold Town), the inner city referring to the two historical neighbourhoods in Budapest, the neighbourhoods were built nearly in the 19th century. The three districts are located on the Pest (east) side of the Danube bank and include various cultural landmarks.

**Table 1. Case study general information. (Source: The authors)**

Project Name	Location	Area	Population	Density
Panel- housing neighbourhood				
Havanna	Transitional area-XVIII	0.49 km <sup>2</sup>	17,000	34,693 person/km <sup>2</sup>
Kelenföld	Transitional area-XI	0.96 km <sup>2</sup>	20,000	21,052 person/km <sup>2</sup>
Köbánya-Újhegy	Transitional area- X	0.52 km <sup>2</sup>	16,000	30,973 person/km <sup>2</sup>
Courtyard block neighbourhood				
Neighbourhood in District V	Historical centre city	0.54 km <sup>2</sup>	26,013	10,043 person/km <sup>2</sup>
Neighbourhood in District VII	Historical centre city	0.63 km <sup>2</sup>	52,362	25,053 person/km <sup>2</sup>
Neighbourhood in District IX	Historical centre city	0.48 km <sup>2</sup>	59,720	4,766 person/km <sup>2</sup>

#### 3.1 Building characteristics

Table (2) demonstrates a comparison between the courtyard residential block urban pattern and the housing estate through four indicators: accessibility, plots, building, and open spaces.

First, urban accessibility, public transportation, and street network topology. It was noticed that the panel housing states are surrounded by local streets with low traffic circulation which provides safer conditions for pedestrian movement. In the case of Havanna, the development was divided by an arterial road providing heavier traffic, in addition to public transportation with easy access; a similar situation is occurring in both Kobanya Újhegy and Kelenföld housing estates. The developments include common services and shopping stores within the development, which eliminates the need to move longer distances. However, the courtyard street pattern is regular and based on a gridiron collector street network creating convenient access to all building blocks. Public transportation is much more frequent in the case of courtyard blocks because of the centralized locations within the city and the symmetrical urban grid that offer equal access to public transportation. Therefore, it's observed that the panel

housing estates is well connected in a cell-like form organization as each development works as a small town, so the connection is closed inward-looking and poorly connected to the city and surrounding, on the other hand, the courtyard building blocks are more cities connect and outwards looking because they share the same mixed-used functions and street network.

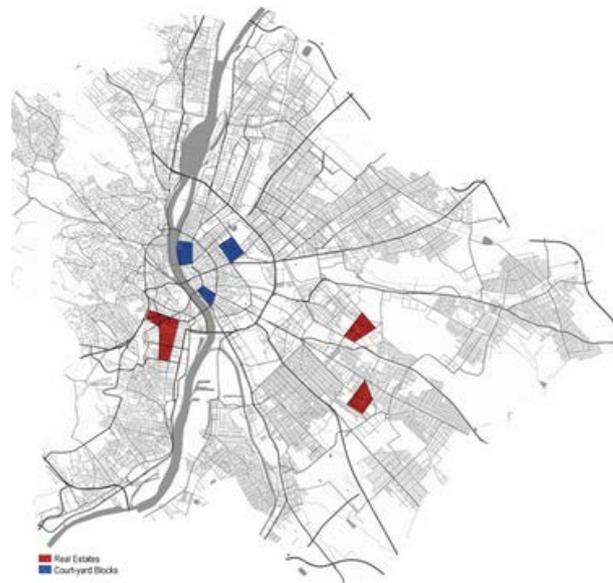


Figure 2. Case studies location. (Source: The authors)

Second, plots including layout, orientation, and building ratio. Plot size and layout affect the size of the building within the neighbourhood and the spacing between buildings (setbacks) according to the World Health Organization (WHO) healthy housing requirements report inadequate building spacing can have indirect health effects associated with poor access to sunlight and unpleasant and blocked views causing mental health risks on users. The inconvenient building heights and orientation in housing states result in overshadowing. The spacing distance varies according to the layout and the concern of inhabitants' privacy (Regional Office for Europe of the World Health Organization, 1988).

Plot size in panel housing states is nearly double or tripled compared to the courtyard plot sizes, creating massive street blocks and poor street network connections and increasing the walking distances between services.

The orientation in the 5 cases is similarly aligning the longer edge of the plot facing the southwest or northeast axis except for the Kobanya Újhegy housing development the building and the building plots were aligned in the opposite direction of the other cases, orientation affects the heat gain and accessibility to sunlight, on a macro level, it can help improve the wind flow in the neighbourhood. In the case of Kobanya Újhegy, the plots alternate along the axis to form enclosures that create windbreakers.

Third, building according to WHO housing and health guidelines living in flats can increase the probability of illness twice compared to living in houses. The morbidity of inhabitants living in flats was 57% greater in flat buildings and more significantly in respiratory infections in young women; these results can be associated with the small living space in flats buildings and the poor air ventilation. The report indicates degradation of mothers' mental and physical health the higher floor they live, living

satisfaction decreases in floors higher than the fourth. The risk of getting trapped in lifts and children falling from windows increases with the higher floor.

The building materials for both urban patterns vary based on the technology of construction. Panel housing estates were built using prefabricated concrete elements that faced many environmental, aesthetic problems, causing insulation deficiency and material deterioration. The brick and stone construction technology used in the courtyard block gives an aesthetic appearance to the building facades and provides durable, sustainable, low-maintenance structures. The choice of material has a direct effect on the inhabitant's well-being and quality of life.

Fourth, open spaces, both cases provide open spaces; housing estates provide larger open spaces with no less than 85 percent of the total development area. However, accessibility of open space differs in the two urban patterns, courtyard block provides access to private open space which can only be used by the inhabitants of the courtyard block residence while housing estate provides only common publicly-used open spaces, even though housing estates provide vast areas of open spaces it is poorly maintained, unfurnished and unorganized for inhabitants use, due to the fact that these areas belong to the district municipalities, on the other hand, maintenance and usability of a court-yard block rely on the inhabitants. the contrast in usability and accessibility between the two cases is an indicator of the social resilience of such patterns, privacy, and quality of open spaces in the courtyard block provides a convenient social setting in case of emergencies such as a lockdown.

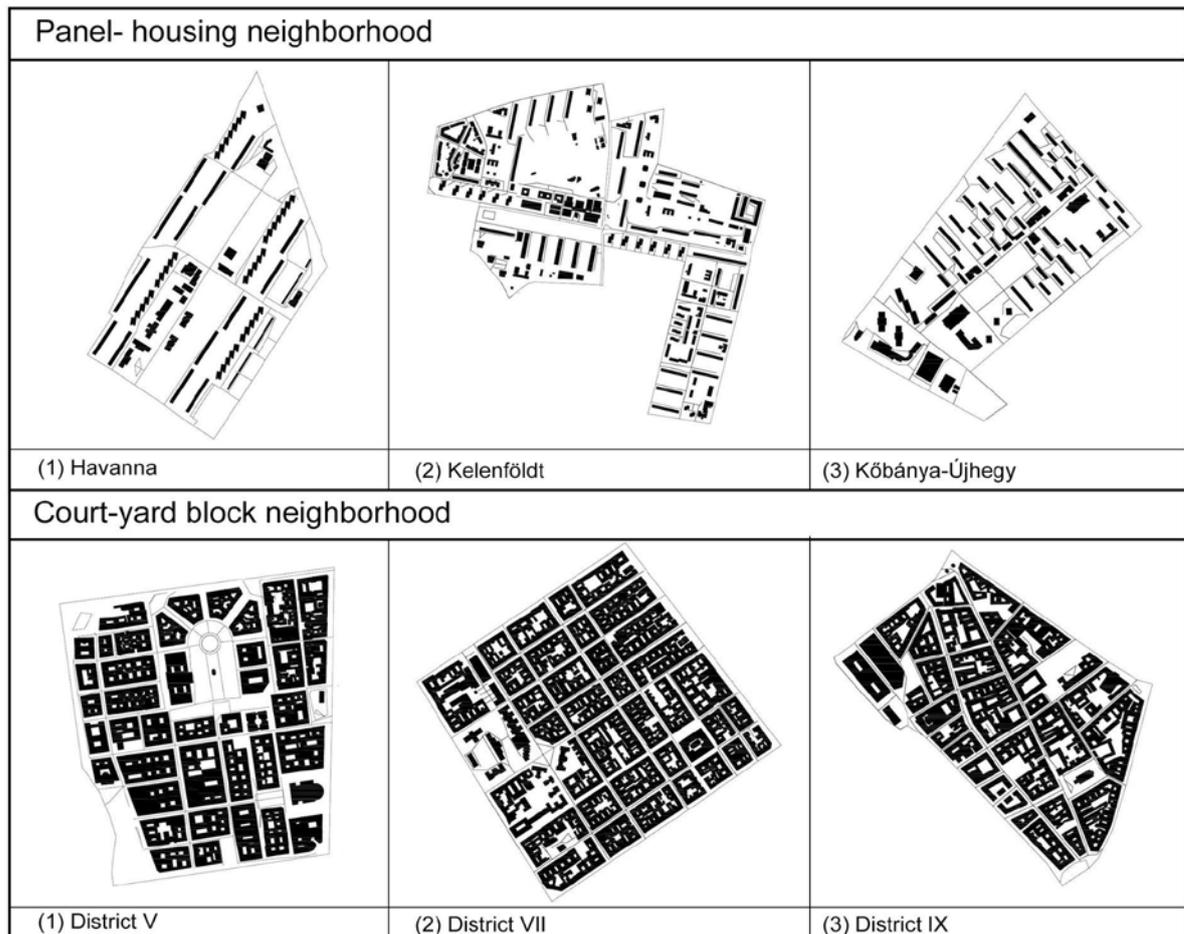


Figure 3. Case studies layout. Figure 4. Case studies layout. (Source: The authors)

**Table 2. Comparison between the courtyard residential block and the housing estate through four indicators. (Source (Authors))**

Indicator	sub-Indicator	Havanna	Kobanya Újhegy	Kelenföld	District V Zone	District VII Zone	District IX Zone
Accessibility	Streets	Bounded by 4 local streets (Barcsay/Vörösmarty Mihály, Kolozsvár, Baross, Margó Tivadar)	Bounded by 2 local and 2 collector streets (Sibrik Miklós út, Mádi u., Tavas u., Gyömrői út)	Bounded by 4 collector streets and 3 local streets (Bártfai u., Fehérvári út, Andor u., Tétényi út, Bikszádi u., Hadak útja, Etele út, Somogyi út)	Bounded by 3 collector streets and an arterial street (József Attila u., Bajcsy-Zsilinszky út, Báthory utca, Széchenyi rkp)	Bounded by 2 collector streets and 2 local streets (Damjanich u, Dózsa György út, Thököly út, Rottenbiller u.)	Bounded by 3 arterial streets and one collector street (Vámház krt., Üllői út, Ferenc krt., Közraktár u.)
	Public transportation	accessed by four bus lanes and one tram lane - approximately 45 from the city center	accessed by five bus lanes and one tram lane - approximately 25 from the city center	accessed by ten bus lanes and two tram lanes and M4 metro lane - approximately 15 from the city center	accessed by seven bus lane and tram lanes and M1,2,3 metro lanes	accessed by thirteen bus lanes and M2 metro lane	accessed by two bus lanes and two tram lanes and M3,4 metro lanes-
	Street network pattern	Gridiron	Loops and lollipops	Fragmented Parallel (irregular grid)	Gridiron	Gridiron	Gridiron
	Development layout	Perpendicular Trapezoid	Trapezoid	Approximately L-Shaped	rectangular	rectangular	rectangular
Plots	Layout	rectangular plots with setbacks	rectangular plots (irregular plot size)	rectangular plots with setbacks	rectangular plots without setbacks	rectangular plots without setbacks	rectangular plots without setbacks
	Orientation	long façade of the plot aligned along the southeast	long façade of the plot aligned along the northwest	long façade of the plot aligned along the southeast	long façade of the plot aligned along the southeast	long façade of the plot aligned along the southeast	long façade of the plot aligned along the southeast
	Average Area (m <sup>2</sup> )	13,175	1,100-11,660	8,700-17,000	1,000-5,000	1,000-2,500	1,000-2,000

Building	Typology	liner and tilted panel flats building	Liner panel flats	Liner Panel flats	Courtyard	Courtyard	Courtyard
	stories	10-11	10-12	10-11	4-6	4-5	4-6
	Material	prefabricated panels-reinforced concrete	prefabricated panels-reinforced concrete	prefabricated panels-reinforced concrete	Bricks, stone and wood	Bricks, stone and wood	Bricks, stone and wood
	Orientation	Southeast or East	Southwest	Southeast or East	Aligned with northwest-southeast axis	Aligned with northwest-southeast axis	Aligned with northwest-southeast axis
	Layout	Liner	Liner	Liner	courtyard centralized	courtyard centralized	courtyard centralized
Open space	Area Ratio	88%	85%	85%	48%	43%	45%
	Building area (m <sup>2</sup> )	56847	76833	142711	285942	357750	265440
	Open area (m <sup>2</sup> )	433153	446250	816796	262660	273063	216697
	Total area (m <sup>2</sup> )	490000	523083	959507	548602	630813	482137
	Open Space Accessibility	Public	Public	Public	Private	Private	Private

#### 4. Conclusion

This paper presents a general assessment of two urban housing patterns, the court-yard block and panel housing neighbourhood, through the result of the comparative study measures can be taken to improve urban resilience through achieving a better quality of life, well-being and healthier environment which leads to a better and more liveable space.

Although the panel housing states provide services within the housing estate, the quality of these services would remain undetermined and needs more investigation to decide if it would provide the required services for a resilient neighbourhood, while in the case of court-yard blocks due to their location in the city centre it grants access to multiple services within relatively close distance. Panel housing neighbourhoods are located further away from the city centre with limited public transportations varieties; which result in poor access to high-quality sociocultural services in the city centre. Plot size and orientation is a great indication in micro and macro levels of urban planning and design, that could be used as a reference in the future planning of housing states in Budapest. Air quality, airflow, and shadow analysis are the start point of improving

the resilience of plot planning. Story level of flats has a strong connection to physical and mental health problems, therefore levels higher than four must be upgraded to improve living conditions for families and improve air quality and sun accessibility. Due to the fast material deterioration used in panel housing; panel housing estates need frequent assessment and maintenance to obtain adequate living conditions for inhabitants. The large area of open space in panel housing neighbourhoods provides an ideal opportunity for the development of an integrated social space; which can be utilized for the benefit of the inhabitants, while in court-yard block neighbourhood it depends on ownership development of the private open space.

The results do not proclaim a neighbourhood urban pattern preference; it sheds light on the advantages and disadvantages of both categories and suggests improvements on four levels of analysis that could enhance the social resilience and liveability of the city. We recommend expanding and thoroughly searching other indicators and features in urban design to achieve a comprehensive assessment tool for social resilience neighbourhood design and future urban gentrification guidelines.

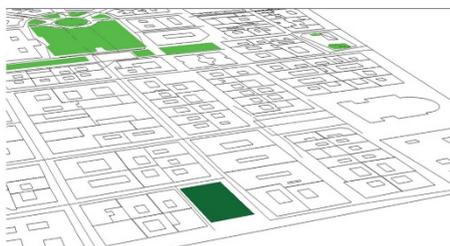
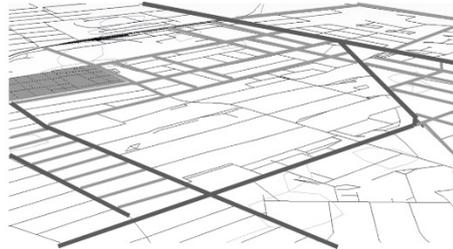
(a) Court-yard Residential Block



**Accessibility**

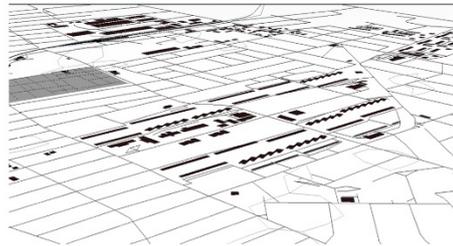
- Public transportation
  - (a) Well served
  - (b) Served
- Streets Connectivity
  - (a) Well connected
  - (b) Partially connected

(b) Housing Estate



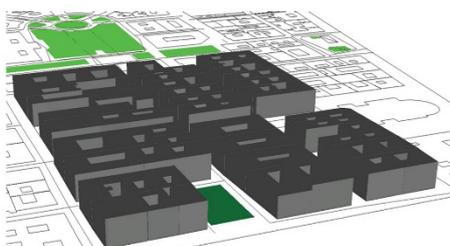
**Plots**

- Buildings ratio
  - (a) 85-90% built-up area
  - (b) 40% built-up area
- Plot dimension
  - (a) 50\*35m
  - (b) 600\*1000m



**Blocks**

- Materials
  - (a) Blocks and stone
  - (b) Prefabricated panels
- Physical conditions
  - (a) Well preserved
  - (b) Poor conditions



**Open spaces**

- Density
  - (a) 15% open space
  - (b) 60% open space
- Accessibility by residents
  - (a) Access to private open space
  - (b) Access to public open space

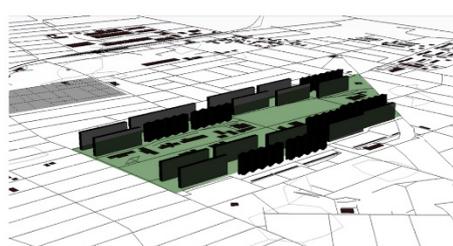


Figure 4. Comparison Conclusion Diagram. (Source: The authors)

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# Mapping Informal Changes: New Meanings and New Patterns of Usage of Mega Blocks: Case Study New Belgrade

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## ABSTRACT

*The focus of the research is informal change in the post-social mass housing. Informal change refers to usage of space or need, activity and movement of pedestrians, their intentions and walking targets. Walking becomes an important aspect of an individual's life as a mode of transportation or leisure activity. The study area is mega blocks on New Belgrade - block 23 and block 30. There is a question, is the movement of users limited to the intra-block or inter-block, or wider zones of this part of the city. This paper aims to define the edge of the neighborhood of opportunity and urban patterns in a post-socialist New Belgrade, by mapping informal changes focusing on walking routes and destinations and measuring walking distances. The presence of walking routes show that it is comfort space with elements of healthy urbanism, also new lifestyle and dynamics of using mega-blocks. To answer these questions, there will be used different methods: walking interview - experimental qualitative and quantitative method, online survey, unobtrusive observation and visual materials. The research reveals how informal changes as walking can be heritage in the community or because of a wide range of factors, absolute individual preference.*

## KEYWORDS

*mapping, informal change, new pattern, usage, walking distance*



Figure 1. Pedestrian walkway in mega block 30, New Belgrade  
(Author: N.Mitrović, June 2021)

## 1. Introduction

Given the growing dominance of motor vehicle use and declining physical activity, the non-motorized mode of transportation is becoming an important aspect of an individual's everyday life in terms of public health, economic, environmental and other benefits. (Hatamzadeh et al., 2014). Non-motorized mode of transport means walking and cycling. Walking is a form of physical activity that is available to individuals of all ages and social groups. Many studies suggest that the success of a public health strategy, also an individual's decision about walking, will be highly influenced by built environment design and a wide range of factors (Wasfi et al., 2017; Hatamzadeh et al., 2014).

Walking is a part of two bodies of literature - health/leisure versus transport / land-use. Relationships between walking activity, health, and the built environment are significant in the literature. In studies, walking behavior is assumed to be affected by permeability, usually within a radius of 1000m as much as *the neighborhood of opportunity* (Millward et al., 2013). (See Figure 1.)

A series of factors affect walking behavior, but important ones are age and gender, as individual characteristics, and significant one is walking distance, as a factor in the probability of choosing active transportation (Alfonzo, 2005).

Distances of 400m and 600m, are often used as an acceptable walking distance in many studies, but also has suggested that walking trips longer than 400m may not be uncommon (Millward et al., 2013). However, in this paper, a distance of 500m will be used as an urban indicator and these trips longer than 500m will be the subject of research. As in some of the studies, the meaning of walking behavior is decisive fact, and it will treat as the probability of choosing walking in a trip for a single purpose with a single destination (Hatamzadeh and Hosseinzadeh, 2020).

Kevin Lynch defines the urban edge, perceptual dimension of urban design, as a physical element of environmental space that is a linear element that is either not used or considered as a path and often form the boundary between areas or linear breaks in continuity (Carmona et al., 2003). In this paper, the urban edge will be considered as a zone between two areas.

Post-socialist cities in transformation characterize some crucial changes in urban patterns and urban impacts. The most important change of urban pattern is diversification of mono-functional areas, while, of urban impacts are increase in individual standards and choices, shopping opportunities and personal mobility (Stanilov, 2007a). Bearing in mind these increases in individuality, especially personal mobility and dominance of car usage, walking in post-socialist city has become important activity and tool for its further development, as a measure of satisfied needs of residents in urban space.

The spatial arrangement of urban activities and spatial impacts on residential development patterns are conditioned by market forces, public policies, and the pre-existing spatial structure of the socialist city (Stanilov, 2007a).

Informal change, in this work, refers to usage of space or need, activity and movement of pedestrians, their intentions and walking targets. Walking destinations show the intention of the users to move, i.e. what goal of moving, what needs they are meeting. The presence of walking routes and their distances show that it is a space that is good for a walking experience and satisfy levels of walking needs – feasibility, accessibility, safety, comfort and pleasureability (Alfonzo, 2005).

In the socialist mass housing, the neighborhood units were called *mikrorayons*, each one of them centered on an elementary school and containing between 5,000 and 15,000 residents. Each component part of the housing estate was to be provided with services calculated on the basis of its size and place, including schools, playgrounds, libraries, hospitals, etc, but only a few of the planned facilities and services were provided. Most of the large cities in the former socialist countries in Central and Eastern Europe have between 40 and 50 percent of their residential stock in such dwellings, housing over half of their population (Stanilov, 2007b).

Bearing in mind *mikrorayons* in today's post-social city, in this paper, the *neighborhood of opportunity* will be considered as a imaginary territory which represent transformed that neighborhood unit where the user can satisfy all of his needs by walking.

Good example of mass housing where all these changes are present is New Belgrade, and its transformation of mega blocks. It is the specific area of Belgrade as post-socialist heritage, which was built during the socialist period. Ideologically, it has been planned as a block structure where all the needs of an individual should be met within one mega block. Having in mind economic, social and functional changes, the New Belgrade transformed from the open modernist mono-functional into a mixed-use settlement, but urban matrix of mega blocks has mostly remained untouched (Djukić, 2015). New Belgrade planned as a city for car, but now, it is changing to city for pedestrians. Today, in walking of inhabitants between blocks and crossing much greater distances by foot, it can be noticed informal changes in everyday life practice.

There is a question, what is the walking distance of residents in post-socialist mass housing neighborhoods. What about the neighborhood of opportunity, is it the same size as the area of the mega block?

In this paper, there will be considered two important topics: mapping informal changes focusing on walking routes and destinations in order to define urban patterns and the edge of the neighborhood of opportunity in a post-socialist New Belgrade.

## 2. Method and material

This paper explores individual's preferences for walking in a post-socialist neighborhood like mega blocks of New Belgrade. This paper aims to determine



whether the walking distance in the block structure is greater than 500m, as well as whether the movement of users is limited to the intra-block or inter-block, or wider zones of this part of the city. That is, the aim is to define the edge of the neighborhood of opportunity, by considering the opinions and preferences of users.

The methodological framework of the research is walking interviews, as an experimental method of collecting qualitative and quantitative data - routes and conversation, to mapping users behavior. Also, there is web-based survey tool – Google Forms.

## 2.1. Walking interview and Google Forms

A *walking interview* is a type of interview in capturing data relating to people's understanding of place. The focus of the interview is on the relationship between what people say and where they say it - qualitative and quantitative. Interviewees are prompted by meanings and connections to the surrounding environment and it provides richer data than a sedentary interview. Quantitative data concerning the routes taken, as well as qualitative data derived from the conversational exchange (Evans and Jones, 2011). *Google Forms* is a cloud-based data management tool used for designing and developing web-based questionnaires. As a web-based survey tool, it has an upper hand regarding response speed, costs, response rate and variable costs. (Vasantha Raju and Harinarayana, 2016). In this paper, the questions for the respondents are related to the measurement of preferences towards pedestrian movement.

The results of walking interview and Google Forms will be considered merged, given the similar structure of collecting data. It is based on responses from about 150 respondents – about 120 responses on Google Forms and about 30 face-to-face interviews. Demographic data such as gender and age are firstly collected, and then the data that this paper focuses on - the needs for which an individual move from the block, the three most distant specific destinations to walk (greater than 500m) and the assessment of distance, that show intent to move, and personal considerations of what contributes to the pedestrian movement for people their age - what factors of environment can affect them. On the end, respondents were asked to draw their walking route on a map (just in case of walking interview).

The age and gender structure of the respondents roughly corresponds to the age and gender structure of the residents in the block. It is assumed that the demographic structure of one block roughly corresponds to the demographic structure of New Belgrade. According to the Republic Bureau of Statistics of Serbia, the age structure of New Belgrade is such that about 25% of the population is under the age of 25, about 55% between the ages of 25-65, and about 20% older than 65. While the gender structure is such that 54% are female and 46% are male.

The limitations of the walking interview method are related to the results themselves, which represent the respondents' assessment. The answers of the respondents, as well as the drawing of their route on the map are subjective results. Also, Google Forms as a method, in addition to numerous advantages, it has disadvantage because based on user assessments. There are privacy and security issues, too. The lack of objective data on pedestrian movement can be compensated by some of the methods related to the analysis of the readability of open space or the intensity of use in open spaces, i.e. the relationship between the configuration of space, and socioeconomic relations, such as space syntax method (Djukić and Vukmirović, 2012).

## 2.2. Study area – mega blocks

The study area included two typical mega blocks of the central zone of New Belgrade. Mega blocks 30 and 23 are similar in size and density, but in different positions. Mega block 30 is located quite close to the quay (Zemun Quay) and large park areas along the river, contrary, mega block 23 is located next to the highway, and near two big constructions – office building and Belgrade bus station. (See Figure 2.)

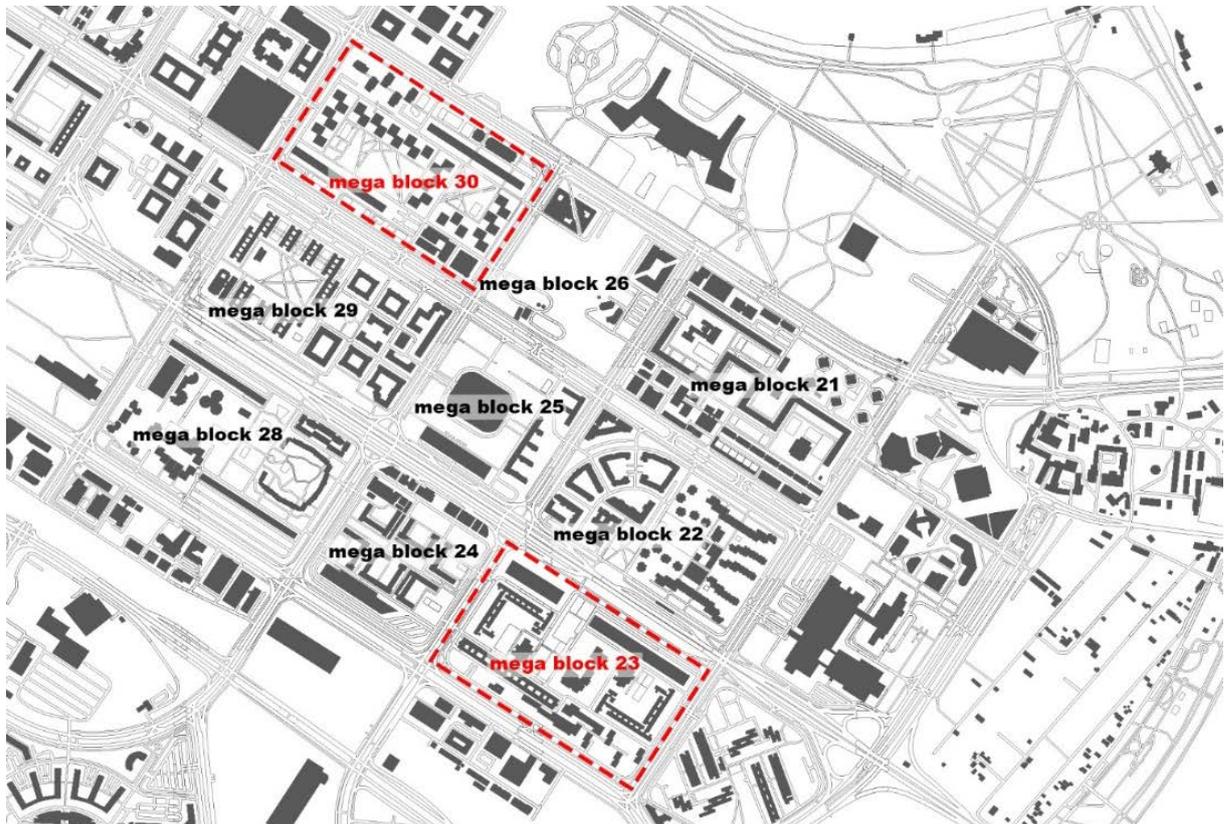


Figure 2. Map of New Belgrade – Study area include mega block 30 and mega block 23  
(Author: N.Mitrović, July 2021)

## 3. Results and discussion

Implementing the structure of research discussed above, results of research on study area of New Belgrade mega block 30 and 23 will be presented.

### 3.1. Results of walking interview and Google Forms – mega block 30

With regard to specific destination to which pedestrians walk more than 500m, in age under 25, the most respondents mentioned café, restaurant, raft or someone else's home (17%), while in age between 25-65 that is supermarket (Mercator, 20%) or café and rafts on Zemun Quay (17%), and in age older than 65 it's open marketplace (Old Mercator, 33%).

If we pay attention to the average distance and intention to move, it can be distinguished study, shopping, leisure, work or other home routes. Study routes are rare (1%) and often between 200m and 5km, because it's often activity in the mega block itself, but there are some routes to distant facilities.

Work routes are individually (about 1%) but vary from 500 to 1000m, while shopping routes are the most often (about 44%) and there are plenty routes to shopping mall (about 3km), supermarket (about 1000 m) or open marketplace (about 2.5km). Routes on foot to other homes are often in space of mega block or next door mega block (about 12%) and amount to about 1600m. Because the mega block is close to big green areas and quay, leisure and routes for recreation are really often (about 42%) and with the biggest distances that vary from 6km to 8km.

Some of the factors that respondents cited to influence the choice of pedestrian movement in age 25 are individual preferences - they prefer to go on foot, rather than by public transport, and cite as problem street signs and long waits at traffic lights when changing side streets when walking. In the age of 25-65 consider that people their age often do a lot of work on foot in New Belgrade, because in the 1990s, due to the bad economic situation and not good enough public transport, they commonly went everywhere on foot, while in age older than 65 state as the main advantage flat terrain.

It can be concluded that the inhabitants of mega block 30 crosses a distance of more than 500m during daily activities in the block itself, but also in the blocks next to it. However, for longer distances, an important factor is age. An interesting observation is that certain age groups see walking as part of a habit and heritage from a different time, regardless of factors that have changed today. (See Figure 3 and Figure 4.)

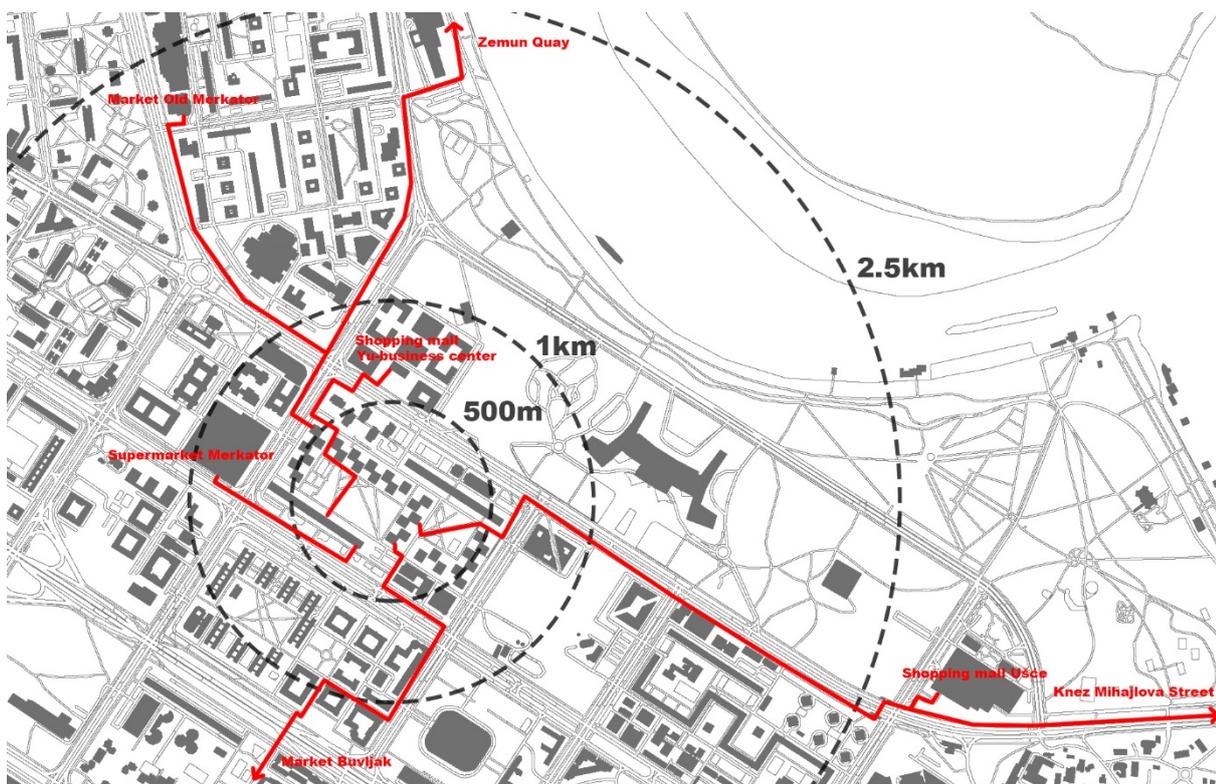
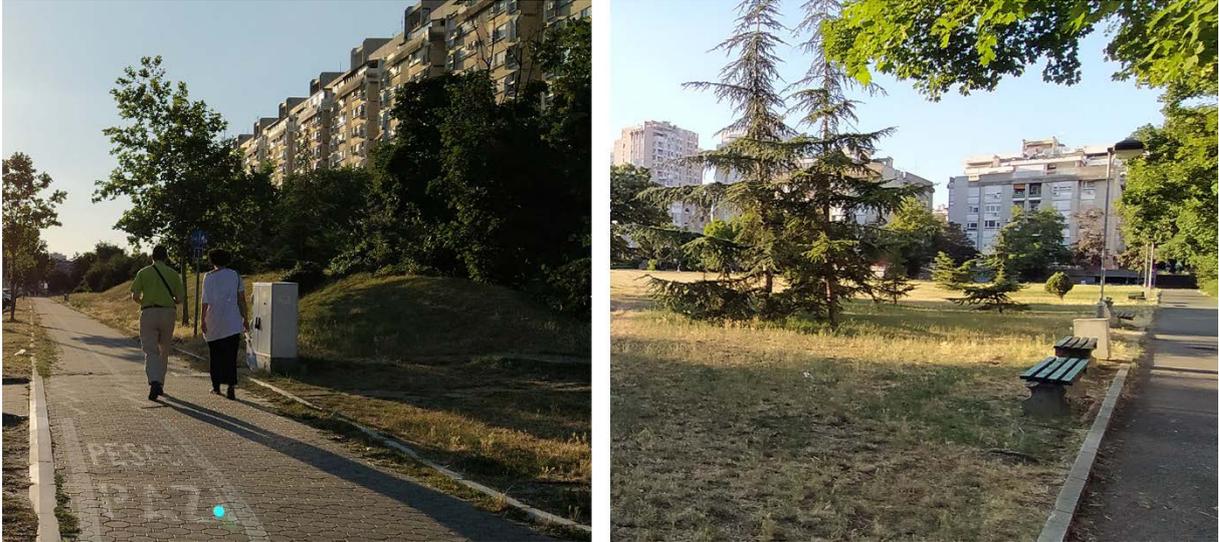


Figure 3. Walking routes from mega block 30 (Author: N.Mitrović, July 2021)



*Figure 4. Walking outside(left) and inside (right) of mega block 30  
(Author: N.Mitrović, June 2021)*

### 3.2. Results of walking interview and Google Forms – mega block 23

If we pay attention to the specific destination to which pedestrians are more than 500m, in age under 25, the most respondents mentioned bus station (Blok 23, 20%) or supermarket and just outdoors (17%), while in age between 25-65 that is also supermarket (Vero, Jumbo, 25%) and just outdoors (23%), and in age older than 65 it's just outdoors, often in the space of mega block or neighborhood (50%).

Concerning the average distance and intention to move, study routes are rare (<1%) as in mega block 30 and often vary from 200m to 2km. Work routes aren't uncommon (about 3%) amount to 1000m, often in next door block where is commercial area, while shopping routes are often again (about 36%), of course, which are also diverse – to shopping mall (about 2km), supermarket (about 500-800m) or open marketplace (about 1-3km). Routes on foot to other homes often are in next door mega blocks (about 7%) and amount to about 1-3km. Here are much less represented classic leisure and recreation routes (about 54%) with distances of about 4-8 km, but often with walking in the circle the blocks themselves are not to the park or quay.

Some of the factors that the respondents stated to influence the choice of pedestrian movement in age 25 are the lack of some lines of public transport and because they prefer to go on foot. At ages 25-65 they find it useful that there are passages, they are like a shortcut that contributes to faster movement in the block itself, but also outside it. However, they are extremely unsafe in the evening, because it is not well lit. Also, they mentioned that there is new construction of New Belgrade bus station and it's not very accessible. While in age older than 65 they cite as the main advantage plenty of greenery as a shade on the tracks in mega block 23, but also in the side blocks, which is important to them as a gathering place in public space, but also when moving to someone else's home and neighborhood.

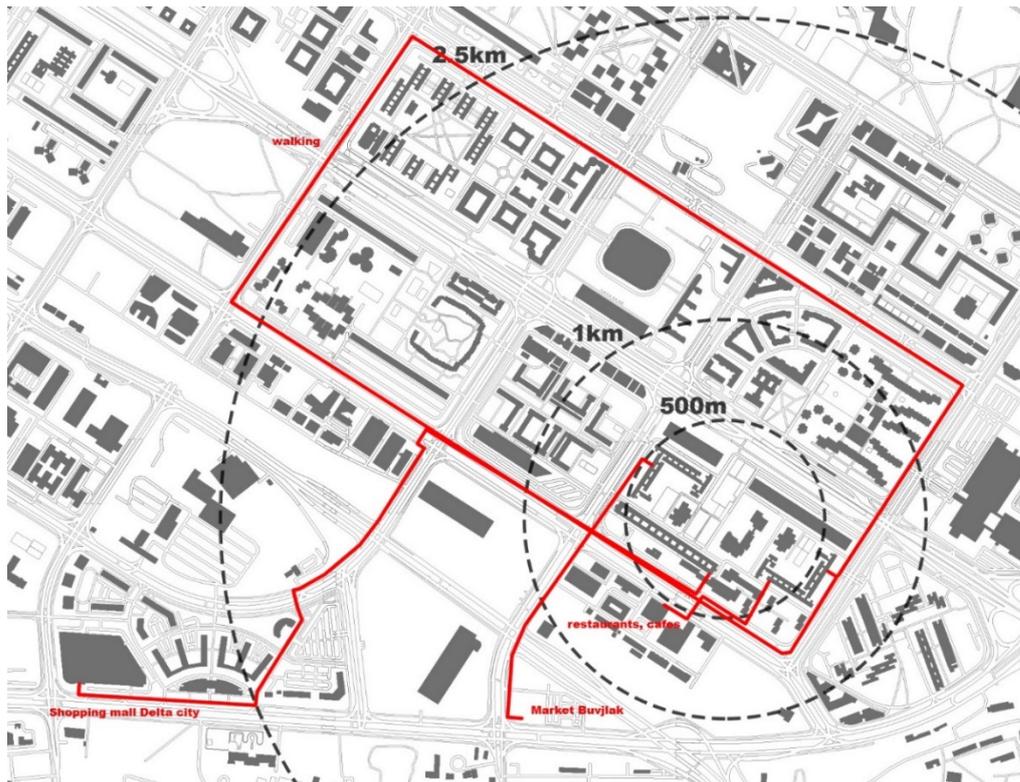


Figure 5. Walking routes from mega block 23 (Author: N.Mitrović, July 2021)



Figure 6. Walking through passage (left), inside (middle) and outside (right) of mega block 23 (Author: N.Mitrović, June 2021)

It can be concluded that the residents of mega block 23 have less preferences for pedestrian traffic due to external factors, i.e. negative influences in the environment of the block itself. However, they further emphasize the advantage of the passage in the pedestrian experience itself, which speaks to the potential that has not been sufficiently exploited and that could be improved from the aspect of safety. (See Figure 5 and Figure 6.)

### 3.3. Comparative analysis

By mutually comparing the data of a specific destination, it can be said that the facilities in New Belgrade, such as shopping malls or big open green areas, represent the needs of users that they cannot meet in the block itself and therefore reach those destinations as quickly as possible - on foot. At age under 25, café, restaurants and rafts, especially in space of quay, are the most important destinations. In age 25-65 it is a park or quay (often cafés) for mega block 30, but for mega block 23, it is an just outdoors, because of long distance to quay. At age 65, an open marketplace, just outdoors and other's homes in the neighborhood are important. (See Figure 7) Concerning the average distance and intention to move, in both blocks study routes are rare, but it can be big ones. Shopping routes are dominant and leisure or recreation routes are the biggest ones, but with a different type. One is walking in a park or quay, and another one just through mega blocks.

Bearing in mind leap from totalitarian to capitalism in a matter of only a few years, it is not surprising that the post-socialist city takes on many of the characteristics of the North American patterns of urban development, rather than settling in on the more balanced model of Western European urbanization (Stanilov, 2007a).

Therefore, for comparison walking data of specific destination, it will be taken North American city. Comparing results with another one not post-socialist and neighbourhood which is not mega-block structure, it can be said that there are big differences in using green areas and shopping malls. Halifax is medium-sized North American city in Canada where percentages of walking routes to shopping mall is 3,3% of all routes (versus 6-17% in all ages in New Belgrade mega blocks) and to park, quay or just outdoors are 1,1% or 2,7% (versus about 10% in all ages in New Belgrade, especially in mega block 30) (See Figure 8, Millward et al., 2013). It means that green areas and shopping malls contribute in change of everyday life practice and lifestyle of New Belgrade residents.

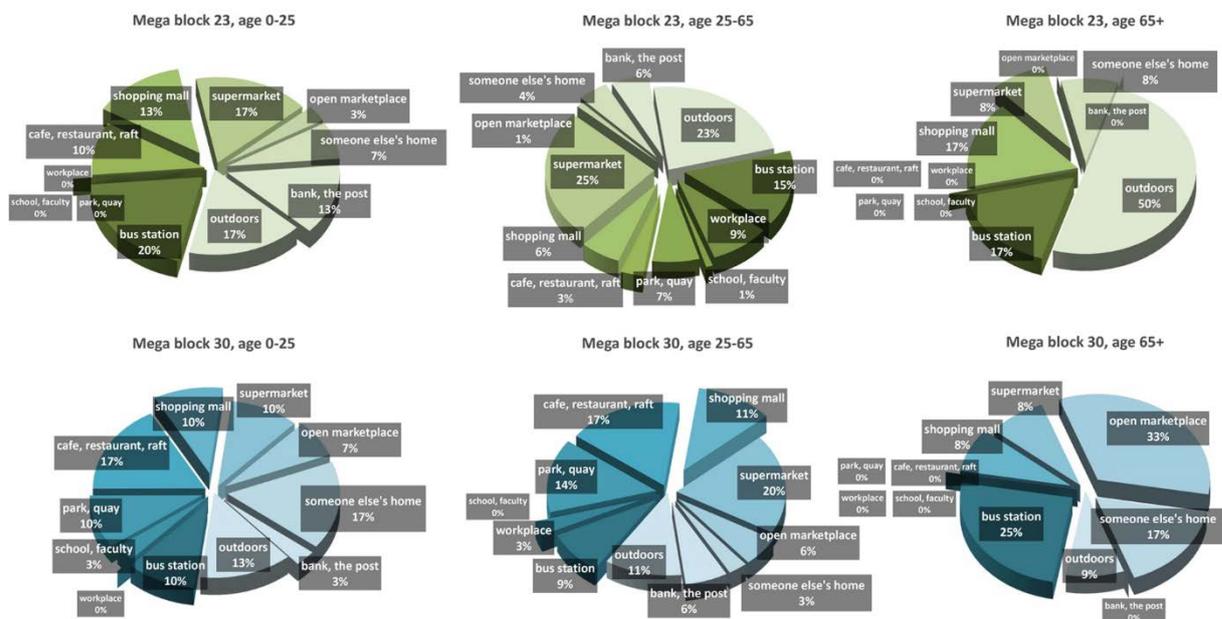


Figure 7. Comparison of data by age – specific destinations refer to mega block 23 (green ones) and 30 (blue ones) (Author: N.Mitrović, July 2021)

AT walking trips, by specific destinations (single-episode trips only).

SIC-based destinations	% of AT walking trips (n = 1790)
Total	100.0
Respondent's home	20.8
Workplace	17.0
Bus stop or ferry terminal	9.1
Restaurant or bar	7.8
Someone else's home	5.7
Grocery store	5.2
Other retail	3.7
Shopping center or mall	3.3
Outdoors away from home	2.7
Bank	2.7
School	2.4
Other services	2.3
College or university	1.6
Fast food	1.5
Drug store	1.5
Government Services	1.3
Park or Beach	1.1
Place of worship	0.9
Private Recreation Facility	0.9
Library	0.8
Retail Sports and Apparel	0.8
Motel or Hotel	0.7
Hospital	0.7
Department Store	0.6
Variety Store	0.6
Parking Lot or Structure	0.6
Gas Station	0.5
Barber or Salon	0.5
All Other	2.8

Figure 8. Specific destinations refer to medium-sized North American city – Halifax, Canada (Millward et al., 2013)

The results show that the position of the mega block is an important factor for an individual's decision about walking which makes a difference between mega blocks. Also, changes in urban tissue contribute in that decision. New structure which is implemented in a mega block structure, has elements of a denser matrix that looks more like the old part of the city and contributes to a better walking experience.

Mega block 30 is located in a good position, near the quay, large park areas along the river and shopping centre, but also on the route which is a good pedestrian connection with the old town (Branko's bridge), unlike another large bridge where pedestrian traffic is not allowed (Gazela bridge). This mega block has almost old urban structure which is initially formed. It can be one of the reasons why pedestrians leave the mega block, in order to find new content and structures that are denser.

Unlike mega block 30, mega block 23 is located next to the highway near two big constructions – office building and bus station. That mega block has a new structure, but in construction. Reason of inhabitants leaving mega block here it can be of avoiding construction sites and spaces unpleasant for walking experience.

#### 4. Conclusions and implications for further work

Summarizing walking interviews and online surveys of mega blocks 23 and 30, there are presence of elements which contribute to a greater walking distance that is greater than 500m when performing daily activities and movements in the block itself, but also its surroundings.

The presence of pedestrian movement and its further development depends on many factors such as the intention of pedestrian movement, age, or gender, but above all on personal preferences. Nevertheless, two groups of conclusions can be singled out as why mega blocks are a favourable environment for a walking experience. First,

what is somewhat obvious, the favourable morphology of the terrain (flat terrain) and the separate pedestrian paths within the boulevard and the block itself contributes to more walking. While another important position is that the pedestrian experience can be considered as a heritage of the transition and turbulent period of the 1990s, where the inhabitants of New Belgrade, due to underdeveloped public city transport, covered much greater distances exclusively on foot.

Having in mind the edge of *the neighborhood of opportunity* is ideologically changed, it can be concluded that neighborhood unit is much larger than the space of the mega block and that depending on the age structure of users, it includes the surrounding blocks, but also more distant zones of New Belgrade and the whole city area.

In research, participants not asked about their lifestyles, cultural beliefs, attitudes and other sociological factors that could affect someone's travel behaviour - marital status, educational level, income, household structure and household interactions, having a driving license and others. Future research should include neglected aspects in the interview and help planning practice define future directions and required improvements in space in aim more using of walking.

New Belgrade shows its adaptability and flexibility to change, where despite the economic influences of the market, it is persistent in providing quality to the end user and, in transformation, can contribute more walking and healthier lifestyle than regular neighbourhoods. The presence of big walking routes in this research shows that, in further work, it is necessary to determine the zones that are important to pedestrians, work on determining the factors and spatial elements that contribute to the walking experience and their protection in the further development of New Belgrade.

Wayfinding, information and signposting for pedestrians can be as one of the solutions. As a need for systematic information, wayfinding system for pedestrians is designed as a network of nodes, arranged so that even if one deviates from it at a certain point one can still rejoin it at the next important point along the route, while the signposting concept represent the signs which indicate attractive pedestrian walkways between the residential districts and the centre, to link up the various parts of town (Hoeven, et.al., 2008).

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# Bottom-up Transformations of Modernist Housing Estates

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## ABSTRACT

*This article focuses on bottom-up spatial transformations of housing estates in post-socialist and developing countries. Based on the findings collected in over thirty housing estates, it is evident that ordinary citizens in economically and institutionally weaker countries recognize the same shortcomings of housing estates and address them through interventions with spatial characteristics similar to those known from western countries. The article describes a typology of fourteen of these interventions and explains the benefits they bring to the city. The aim of the article is to propose greater involvement of residents to the physical transformation of housing estates arguing that such involvement may result in more efficient processes with the benefit of creating tighter social bonds and a sense of community. It however also mentions the limits bottom-up transformation processes may have and planners and architects should be aware of.*

## KEYWORDS

*Housing estates, transformation, regeneration, bottom-up*



*Figure 1. Informal housing built on vacant spaces in housing estate 23 de Enero, Caracas, Venezuela (Source: Jitka Molnárová)*

## 1. Introduction

The issue of housing estate regeneration has been intensively addressed in Western European countries since the late 1980s. Today, in countries such as France, the Netherlands and Germany, there are already examples of successful regeneration projects which serve as an inspiration and source of knowledge to other countries. In most cases, these projects are a result of very complex, lengthy and financially demanding processes (Kohout et al., 2021). Less complex, but all the more frequent changes in housing estates can be however observed also in less developed countries. While in Western Europe, interventions in housing estates have long been planned and implemented from the top with the involvement of experts and supported by government funds, in less developed countries, housing estate transformation happens in most cases from the bottom through spontaneous initiatives of the residents. Although both phenomena are procedurally different, both types of approaches show very similar characteristics in terms of spatial strategies used at a lower scale of the physical environment.

A comparison of examples of formal top-down spatial transformation of housing estates in France, the Netherlands and Germany with less formal bottom-up changes in housing estates in Eastern Europe, post-Soviet Asia, Latin America and Africa shows that ordinary people in different parts of the world as well as Western experts perceive the same shortcomings of modernist housing estates and respond to them with similar spatial interventions. In both cases, these interventions transform housing estates into more pleasant, diverse and habitable neighborhoods. The most significant difference between top-down and bottom-up transformations is their aesthetic quality and cost; bottom-up interventions being naturally those that are less economically

demanding and present lower aesthetic quality. Their frequency, however, proves that ordinary inhabitants are interested in transforming and enhancing their housing estates and that they are willing to participate in it with their work, creativity as well as with their financial resources.

The volume of housing estates, the complexity of their spatial structure and the cost of investments that will have to be invested in them in different countries in order to achieve a significant shift in their residential quality will heavily burden the budgets of many governments. In post-socialist countries, where more than a quarter of the housing stock is located precisely in modernist housing estates and where governments do not have the same financial resources as their Western counterparts, there is a need to find alternatives to adapt these financially and coordinately demanding processes known from Western Europe to the specific conditions of poorer and institutionally less developed countries in the East and in the South (e.g. post-socialist and developing countries). Due to higher share of housing estates from the overall housing stock, the goals for the regeneration projects in economically weaker countries should be their higher efficiency and lower costs. Another important aspect in post-totalitarian countries should also be the promotion of social cohesion and the creation of communities, which, especially in housing estates, nowadays rarely exist (Jacobs, 1961). A partial answer to seemingly incompatible requirements of higher efficiency, lower cost and greater social engagement could be the involvement of the population in the implementation of spatial change.

On a theoretical level, this hypothesis lies on the ideas promoted by the so called architects – supporters (Hamdi, 1995) such as Christopher Alexander, John N. Habraken, Lucien Kroll and John Turner. They all have been in favour of greater involvement of ordinary people in the process of building the city. Their arguments are based mainly on the believe that the built environment has always been the subject of a continuous transformation created from the bottom. This process of creating the so called „living configurations“ adds to the diversity and liveliness of the cities, allows the environment to adapt to the changing needs of society and persist over time (Habraken, 2000). Such deeply adapted environment activates our „sense of ownership, participation and belonging to the world“, which, according to Alexander (2002), is „the most important human issue in the built environment“. Turner (1972, 1976) also argues that personal involvement of the inhabitants in the construction of the physical environment brings social benefits in terms of personal fulfillment and community formation. Moreover, he mentions even the economic aspects it brings to cities. When people are not entrusted with control over their environment (according to Habraken, let's understand control as an opportunity to change elements of the environment that no longer serve), they lose the motivation to devote their energy, efforts and resources to it:

*"If residents have control and the opportunity to freely contribute to the process of design, construction and management of their homes, then both the process itself and the resulting built environment contribute to higher individual and social well-being. When people do not have control or responsibility for key decisions in the process, then the living environment can become a barrier to personal fulfillment and a burden on the economy." (Turner & Fichter, 1972)*

The research is based on the belief that that's precisely what housing estates have become in our societies – „a barrier to personal fulfillment and a burden on the economy“. The aim of this article is therefore to built an argument for greater involvement of residents in the physical transformation of housing estates using the

findings from bottom-up transformations as an evidence that such involvement is desirable and possible. Moreover, the evidence seeks to confirm the idea of the „supporters“, that such processes are profoundly natural and necessary for the sanity of us human beings and therefore should be aimed for by planners, architects and policy makers while deciding about the development of our urban environment. Specifically, the article presents the most frequent types of spatial interventions that in different parts of the world are being undertaken "from below" and explains the benefits that these interventions bring to cities.

The article is divided into three parts. The first part presents the state of current knowledge in the topic and the method of research. The second part presents the specific „bottom-up“ spatial interventions which occur in less formal regeneration processes and that resemble interventions known from formal processes in the West. The final part summarizes the general knowledge and recommendations for setting up the regeneration processes of housing estates in the environment of post-socialist and developing countries.

**Table 1. Analyzed case studies (Source: Jitka Molnárová)**

	CONTINENT	COUNTRY	CITY	ESTATE
BOTTOM - UP	Latin America	Argentina	Buenos Aires	Los Perales (Manuel Dorrego)
		Chile	Santiago de Chile	Diego Portales
		Cuba	Havana	Alamar
		México	México City	Tlatelolco
		México	México City	(CUPA)
		Peru	Lima	UV3
		Venezuela	Caracas	23 de Enero
	Africa	Morocco	Casablanca	Riviera
		Mozambique	Maputo	Coop (Av. Kenneth Kaunda with Av. Vladimir Lenine)
		Angola	Luanda	Prenda (or Conjunto de los Cubanos)
	Asia	China	Beijing	Dashanzi buds
		China	Beijing	Tian Tong Yuan
		Mongolia	Ulaan Baatar	1st 40 Thousand - Khoroo 4
		Mongolia	Ulaan Baatar	Khoroo 18
		Russia	Novosibirsk	Tsentralnyy Rayon
		Russia	Novosibirsk	Krasnoobsk
		Russia	Ulan Ude	Komushka - Ulitsa Boyevaya
	Europe	Czech Republic	Ostrava	Odborářská
		Estonia	Tallin	Haabersti Õismäe
		Bulgaria	Sofia	Mladost
		Hungary	Budapest	Újpest
		Hungary	Budapest	Romaifürdo
		Russia	Saint Petersburg	Lesnaya
		Russia	Saint Petersburg	Kupchino
		Russia	Moscow	Belayevo
		Russia	Moscow	Chertanovo
		Russia	Moscow	Novye Cheremushki
		Slovakia	Bratislava	Petržalka

## 2. Current knowledge and methods

The review of related scientific papers published in the past ten years reveals that the issue of bottom-up transformations in housing estates is a recognized and studied phenomena in several countries (Vasilevska et al., 2015; Kolcunova, 2015; Erman, 2016; Erman, 2019). It is notable to say that these findings come mainly from the regions of post-socialist countries. This suggests that it is a topic that is becoming ever more relevant in this region.

The research focuses on housing estates in post-socialist and developing countries that have been transformed in less formal ways. Most of the estates were visited and documented personally between 2013 – 2020. The complete list of analysed housing estates is summarized in Table 1.

During the analysis of each housing estate the attention was directed towards the transformations of the buildings and the public space. The observations were used to create a typology of bottom-up spatial interventions that were found with most frequency. The most observed types are the following:

1. New buildings, 2. Public space upgrading, 3. Interface modifications, 4. Private gardens, 5. Shared gardens, 6. Shared courtyards, 7. Garages (private or shared), 8. Open parking places, 9. Parking sheds, 10. Ground-floor extensions, 11. Upper-floor extensions, 12. Commercial parterre, 13. Individual entrances, 14. New balconies or loggias

Characteristics of these spatial interventions as well as the benefits they bring to the housing estates are explained with more details in the following part.

## 3. Top-down and bottom-up transformations

The following section explains the specific transformations that have been observed both in housing estates transformed from top-down as well as in those transformed from bottom-up.

### 3.1. New buildings

With the effort to maximize its efficiency, modernist housing estates were built as typologically homogenous and monofunctional neighborhoods. They are most often composed of few types of residential buildings (slabs and towers) and buildings of the most necessary amenities. As a result, these estates offer a very limited range of housing types; mainly one-, two- or three-bedroom apartments in a block of flats. The offer lacks any type of above-standard housing in a form of individual houses or larger or otherwise atypical apartments. However, as the examples from analyzed countries show, there is a great demand for a wider range of housing typologies and non-residential functions. This demand is often covered through the development of new buildings that are constructed on empty open spaces.

New construction offers additional types of housing such as family or row houses, apartments with gardens or terraces, ateliers, maisonettes, lofts, etc. and new spaces for other functions that bring in job opportunities and diversity of shops and services.

### 3.2. Public space upgrading

Large open spaces in housing estates were originally intended to serve the inhabitants as lively recreational parks. The dimensions of these spaces combined with

their monotonous design however doesn't encourage residents to use them frequently. Free open spaces serve mostly as transit area for pedestrians rather than as quality public space for spending time.

Modifications of public spaces most often aim at creating a variety of spaces, uses and atmospheres that allow residents to spend time outdoors and engage in a wide range of activities. Such modifications include places for sports, games, meeting up and relaxation.



*Figure 2. Adaptation of public space in housing estate Mladost, Sofia, Bulgaria  
(Source: Anna Kuryviálová)*

### **3.3. Interface modifications**

Housing estates offer spaces with only two degrees of privacy - private spaces indoors and public spaces outdoors. The interface between these spaces is sudden and monotonous. The main entrances to the buildings are indistinct and the space between the building and the sidewalk is most often formed by a strip of lawn without any use and identity. Semi-public and semi-private spaces typical for traditional city are missing in housing estates completely. Analyzed case studies suggest that inhabitants need these „in-between“ spaces as a transition between the public and the private. The interface between the street and the building therefore often becomes a place where frequent modifications happen. These include the enhancement of the main entrances with bigger roofs, additional walls or more pronounced stairs or ramps. The spaces in front of the building are turned into ornamental front gardens and places to sit and rest. Upgraded entrances help to distinguish the front facade facing the street from the more private back side of the building. At the same time, they help each building to have its own character and thus add identity and more diversity to the street.

Front gardens are either semi-public, in case they are minimally delimited and continuously connect to the street space, or semi-private, in case they have a clear demarcation in a form of a fence adjacent to the building. In both cases, they serve as

an important division between the public part of the street and the private space inside the building and bring the necessary hierarchy of privacy to the open space.



*Figure 3. Enhancement of the interface space between the building and the street in housing estate Kupchino, Saint Petersburg, Russia (Source: Jitka Molnárová)*

### 3.4. Private gardens

Transformed housing estates often include private gardens that provide open space with more intimacy. These gardens are typically adjacent to the back of buildings, face less frequented spaces and are delimited by a fence. This intervention is one of the most common ones across all studied cases.

Private gardens bring several qualities into the neighborhood. They enlarge the housing typology adding a new type of an apartment with a private garden, raise the value of otherwise unattractive apartments on the ground floor, bring a greater degree of diversity to outdoor spaces and reduce part of the oversized free spaces. Partial privatization of open spaces invites residents to take care of their surroundings and, as result, helps municipalities to lower their maintenance costs.



*Figure 4. Private gardens in housing estate Alta Mar, Havana, Cuba  
(Source: Jitka Molnárová)*

### **3.5. Shared gardens**

Shared gardens are another example of a semi-private or semi-public space which was lacking in the original concept of modernist housing estates. Shared gardens are often used by a limited group of residents, are mostly delimited by a fence, have a restricted access and offer their users a place for relaxation and gardening.

### **3.6. Shared courtyards**

In addition to shared and private gardens, the creation of shared courtyards is another frequent intervention that contributes to the hierarchization of outdoor space in housing estates. Shared courtyards are spaces between blocks of flats, which are clearly delimited by a fence and the regime of entry is usually regulated. They often serve only the inhabitants of the adjacent buildings and offer them places to meet. Shared courtyards are therefore important, especially from a social point of view, as they enable the creation of cohesive communities of inhabitants in otherwise anonymous neighborhoods.

### **3.7. Garages (private or shared)**

As the number of cars used today has multiplied compared to times when housing estates were built, lack of parking spaces as well as lack of different types of parking is one of the most pressing issues in most analysed cases. Both private and shared garages emerge in transformed housing estates as a strategy to provide a protected space for parking cars. Shared garages represent a less common solution. Private garages, however, were found in many bottom-up transformations such as in the case

of Ulanbaatar, Havana, St. Petersburg, Sofia or Lima. Those are either adjacent to the buildings or as standing-alone structures in between the buildings.



Figure 5. (Left) Privatized space turned into a shared courtyard in housing estate Dashanzi Buds, Beijing, China (Source: Jitka Molnárová)

Figure 6. (Right) Private garages adjacent to blocks of flats in housing estate Khoroo 18, Ulaanbaatar, Mongolia (Source: Jitka Molnárová). Figure 5. Privatized space turned into a shared courtyard in housing estate Dashanzi Buds, Beijing, China (Source: Jitka Molnárová)

### 3.8. Open parking places

The lack of parking spaces in housing estates is one of the most common problems. Since the days when housing estates were built, the number of cars per capita has increased considerably. Streets in housing estates are now often under siege by cars using every vacant space. As a result, spatial interventions include strategies that take up parts of public space for open parking by simply paving parts of the grassy area in front or behind the building.

### 3.9. Parking sheds

Originally, parking spaces in housing estates were concentrated in large parking lots, parking garages or individual garages on the outskirts of the neighborhood. At present, residents appreciate the proximity of parking spaces and at least partial protection of their cars from the climate.

Parking sheds are a suitable and less expensive alternative to garages. They are most often placed in courtyards behind the residential buildings. In contrast to individual garages with blind facades, transparent parking sheds are suitable also from the social control point of view.

### 3.10. Ground-floor extensions

Growing living standards are creating demand for greater living area in flats. One of the ways that residents in less formal countries, in particular, solve the need for larger flats is through building extensions on the ground floor. Through partial privatization of the adjacent land used for the extension residents often gain an extra room for their flat. Greater depth of the flat however brings in difficulties in terms of lighting. In Western countries, therefore, the extensions consist more of partially covered terraces, which do not prevent the lighting of the apartment. In less formal countries the problem with lightning doesn't seem to be an issue.

### 3.11. Upper-floor extensions

Another way in which flats in housing estates can be expanded are extensions on the upper floors or on the rooftops. Due to greater construction complexity, this strategy is more often used in Western countries in top-down processes. A common way is to add a self-supporting structure, thanks to which the apartment can be enlarged by tens of m<sup>2</sup>. Residents of less formal countries, however, are able to find other ways to expand the apartment on the upper floors, for example, through cantilevers.

### 3.12. Commercial parterre

One of the weaknesses of housing estates is the absence of an active ground floor, which originates in the concentration of services in commercial buildings and in the purely monofunctional design of the original apartment. The conversion of ground-floor flats into commercial or office space can be considered as the most common strategy used by residents of housing estates to provide facilities for the development of small businesses. The result is a more diverse range of small shops and services, new job opportunities in the area and livelier and safer streets.



Figure 7. Ground floor flat turned into commercial space in housing estate Kupchino, Saint Petersburg, Russia (Source: Jitka Molnárová)

### 3.13. Individual entrances

Housing estates were mostly conceived as enclaves of mass housing that didn't include any type of individual housing. As case studies show, however, residents of less formal countries are striving for a degree of individualisation of housing in their neighborhoods. A popular strategy to satisfy this need is to create separate individual entrances to ground-floor flats oriented directly to the street. Such modifications change the character of the street, increase the value of ground-floor flats and at the same time add a new typology of individual housing within a collective building.

### 3.14. New balconies or loggias

Significant changes of the exterior of the original buildings are achieved in the West by adding a self-supporting structure for new balconies or loggias. It is a widely used strategy to increase the overall standard of the original flats. There is great interest in loggias even in less formal countries. The transformation of balconies into loggias is one of the most common interventions found in nearly all case studies. Unlike in case of the self-supporting structure, it doesn't require coordination with other inhabitants of the building and is therefore quite feasible.

## 3. Conclusion

The article describes a typology of fourteen bottom-up interventions found in over thirty case studies of transformed housing estates in Easter Europe and developing countries. The analysis focuses only on the similarities of the spatial aspects of these interventions leaving out any analysis of the socio-economic status or the specific physical conditions of the examples studied.

Although the presented typology suggests that the involvement of residents in the process of physical transformation of the city is desired, feasible and brings many advantages to the city and its residents, it is necessary to mention that it is not omnipotent. Individual residents can actively transform their immediate surroundings (apartment, house, garden, interface between private and public space), however, they do not have the organizational, technical and financial capacity to transform higher components of the environment nor to coordinate themselves spontaneously to achieve greater aesthetic coherence between individual interventions. Residents can and should be able to participate in parts of the preparatory and planning processes that affect their surroundings, however, the responsibility for public spaces, public infrastructure, planning, setting up the rules and the overall coordination of the transformation will always lie on the shoulders of public administration. It is, however, all the more desirable to create conditions in which the lower components of the environment (buildings and their immediate surroundings) can be submitted and controlled by the citizens. By setting clear rules that guarantee the spatial and aesthetic coherence of the interventions, the implementation of bottom-up transformation could significantly ease the work and financial burdens of municipalities while offering residents the opportunity to participate in creating the environment, as has been common for humans for centuries. This can guarantee a partial relief for the public administration as well as provide benefits for the residents in a form of higher quality of the built environment, its greater diversity and usability as well as creating a greater sense of belonging and community through an active involvement in shaping the built environment.

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# Urban Regeneration of the Socialist Modernist Housing Neighborhoods in Lodz, Poland and Zagreb, Croatia

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## ABSTRACT

*The paper focuses on living conditions nowadays in post-war mass housing neighborhoods, in Poland and Croatia, primarily on examples of cities Lodz and Zagreb. Urban regeneration has become one of the main urban planning and urban development strategies in the 21st century, especially in the post-socialist countries. As all post-socialist countries reached the independence at the late 20th century, process of urban regeneration which had already affected the Western countries was delayed in countries with transition economy, such as Poland and Croatia. While contemporary urban regeneration practices are mainly applied to either historical city centers and post-industrial brownfield areas, modernist mass housing neighborhoods are left out, while all urban changes are spontaneous and coincidental. The urban regeneration is defined as groups of actions which are taken to solve variety of urban problems, economic, social, and environmental in the area where any sort of degradation occurs, which poses the question why these neighborhoods aren't subjected to change also, as they experience variety of the urban problems. Paper explores the possibility of improving the living conditions in the modernist neighborhoods, understanding that some of the objects should be protected and preserved as the part of architectural heritage.*

## KEYWORDS

*modernist mass-housing, urban regeneration, modernist architecture in socialist countries, revitalization in socialist countries, revitalization of satellite neighborhoods*



*Figure 1. Montwillia-Moreckiego Housing Estate, located in Lodz, Poland.  
(Source: fotoforum.gazeta.pl)*

## 1. Introduction

The term post-socialism (or an adjective post-socialist), is the term that broadly describes and brings together all the countries which have gone through political, economic (and in some cases geographical) transformation in the late 1980s and early 1990s, when the countries in question transferred to capitalist economy and democratizing system [Putova 2016], from “state-controlled ownership of the most important means of production and the political monopoly of the Communist Party” [Cervinkova 2012]. The term post-socialist is often in literature found also as “post-communist”. Rapid transition from totalitarian regime to democratic politics and transition from central planning rejecting market mechanism to neoliberal free market economics, brought for these countries many effects which they share in common and had a lasting effect on different aspects of life, not only economic or political, but also in all spheres of socio-urban life of people. Depending on the time when the country went through transition and the type of the system it was under, according to Putova [2016], post-socialist countries are Central, Eastern and Southeast Europe (Czechoslovakia, Hungary, Poland, Bulgaria, Romania, Slovenia, Croatia, Serbia, Kosovo, Montenegro, Bosnia-Herzegovina, Macedonia, Albania), Baltic states (Estonia, Latvia, Lithuania), the Commonwealth of Independent States (Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Uzbekistan) and Asia (Turkmenistan, Georgia, Mongolia, China, Cambodia, Laos, Vietnam) or Africa (Ethiopia, Mozambique). Furthermore, there is a specific situation with reunification of West and East Germany. This work is limited to and observes the urban regeneration process just of Central, Eastern and Southeast Europe on two case study cities, Lodz and Zagreb. This is not to claim that all of the cities in central, eastern and southern block experience the same urban problems and share all the connections when it comes to urban development, planning and socio-economic problems. Lodz and Zagreb even are widely different cities, with completely different history prior and during the socialist system, therefore even after their urban, socio-economic and

political problems differ. What is common in countries in the study is approach to planning and the process of privatization and re-privatization, which affected both planning and architecture practices. Both urban planning and architecture work during the socialist system was done as the state-led process, with most of investments being state investments, the same as the economy. Although architects and planners worked with certain degree of autonomy and freedom to create and design, there were no privately owned architecture and urban planning offices, everything what was done was done under the state. Enyedi [1998] claims that during the socialism the dichotomy between rural and urban areas grew, which slowed down the appearance of the middle-class known in the West, and that proletarianization was promoted. Szelenyi [1996], on the other hand, writes that during the extensive industrialization in the socialist era, socialist countries became “under-urbanized”, which he bases on the disproportional growth in the number of inhabitants in the city to the industrialization process, but primarily to disproportion in infrastructure development and industrial growth, which could be observed in the West. During the socialist era, in the Western European countries informal, but stable cooperation between public and private sectors could be observed, mainly in capability to govern the city, resulting in entrepreneurial city according to Franz [2000]. This is yet another concept which didn’t appear in the socialist countries until the fall of socialism, as during socialism there were no public-private partnerships, furthermore, civil rights were underdeveloped as well as civil society actors [Petrovic 2005]. This resulted in lack of capital, not only economic capital, but also cultural and social capital. The new goals for post-socialist city development and transformation according to Petrovic [2005] are economic globalization, westernization and Europeanization, leading to more entrepreneurial governance strategy. However, this strategy in its theory implies “greater spending on infrastructure development, required for attracting capital investment, than for social protection and looks to non-profit and civil society actors to replace the role of state in providing the social safety net within the city” [Petrovic 2005]. The entrepreneurial approach requires local governance with sufficient institutional capacity, knowledge and funds to apply the changes. This means complete shift from the socialist system, as complex city governance didn’t exist during the socialism, and it was just a unit subordinated to the state administration. Forming new local governing offices and implementing this approach in many cases came with high social costs and negative effects [Ascher 2000, Scott et al. 2002]. One of the examples is the privatization of the housing, which was the strategy implemented from the West, resulting in the opportunity to have apartment or house in full ownership, instead of it being owned by the state and “rented” to the residents. During the privatization process, not everyone was financially able to buy the housing unit, while others were able to buy multiple units. It resulted in the new market of poorly regulated private rental housing, still visible in post-socialist countries today. In some cases, nowadays, both examples of these urban planning concepts, as well as individual objects, are valuable reminders of history and are seen as architectural heritage. While placing whole urban ensembles, neighborhoods or individual objects under official legal protection is positive, it can however, also present an obstacle in their possible regeneration. All of these factors affect the possible urban regeneration process in the mass housing neighborhoods built during socialism

## 2. Case Studies Lodz, Poland and Zagreb, Croatia

### 2.1. Case Study – Lodz, Poland

Lodz is the city in central Poland, the capital city of Lodz Voivodeship and third city by number of inhabitants in the country, with around 680 thousand inhabitants. The city is known for being the textile industry capitals of the Central and East European market during the period of industrialization, often colloquially called “the Polish Manchester” in the late 19th and 20th century. However, this idiom is not unique for Lodz, as many other European cities, which had potent textile industry, had this title, such as Tampere in Finland or Lyon in France. The rise of the industry is, however, the main point in development of the city of Lodz, as before the industrialization city hadn't had wider importance even in the metropolitan area. Since the deindustrialization period and the final fall of the socialist system in 1989 the direction of development of Lodz changed drastically. With privatization processes, big manufacturing concerns controlled by the state disappeared and with them the scale of the production. However, after the transformation in 1989 and switch to capitalist economy, Polish market was opened to foreign investments and foreign capital. Lodz took different direction for further development, becoming one of the centers for private corporate businesses and technology centers for different international companies. However, this did not stop the continuous decline in the number of inhabitants, making Lodz part of the phenomenon of shrinking cities. Bontje [2005] list three main factors for the city shrinkage:

- Urban development model – where he claims that urbanization is cyclical process, and that decline will be followed by growth eventually
- Mono-structure model – if development is based on one particular industry it is at risk of rapid decline
- Shock-therapy model – particularly the case of East-European cities where state-owned businesses did not survive privatization

Shrinkage of Lodz can, according to this model, be prescribed to both mono-structurality as the development and economic growth were based on one particular industry, but even more process of political and economic transition, leading to privatization and re-privatization can be blamed for economic decline and shrinkage.

The effects of socialist modernist urban planning policies are visible in the cityscape still nowadays. Wesolowski [2005] writes that until the mid-1970s, the concepts of urban planners assumed a complete re-structuring of downtown areas according to modernist patterns. The attempts made to modernize the city center resulted in:

- the commencement and advancement of the construction of high-rise buildings in several "nest areas" (including the office and service forefront of the Fabryczna Station and the so-called "Manhattan" residential, service and office building in Lodz)
- demolition of building lines and most of the corners to widen streets and intersections (main investment - East-West Route)
- introduction of new buildings in the place of one-story houses - mainly in the area of Piotrkowska Street.

According to Wesolowski, most of these measures were carried out with the smallest possible measures, designed to meet only the basic requirements, disregarding the quality of the finish and the composition of the space. These activities were accompanied by the decapitalization of the preserved building structure, typical for a centrally controlled economy.



*Figure 2. Housing Estate called Manhattan, located in Lodz city center. On the photograph the “modernization” of the blocks is visible, block on the right side is just partially covered with layer of styro-foam as thermo-insulation, while blocks on the left side are completely “modernized”. With this action the original façade is demolished, and the tectonics of the elevation disrupted.*

*(Source: <https://commons.wikimedia.org/>)*

Socialist period also was the time of the rise of satellite neighborhoods. In the 1960s, the administrative division of Lodz into five districts was introduced: Baluty, Gorna, Polesie, Widzew and Srodmiescie. This division lasted until the 1993, creating a unified municipal commune, however, the existence of the districts remains, they are further divided into smaller neighborhoods. Many of these neighborhoods were developed during the socialist period, in order to solve the influx of the new residents and housing needs.

At the outskirts of the Baluty district neighborhoods Teofilow and Radogoszcz were built in the modernist spirit. Both were built during the 1960s and 1970s with predominantly prefabricated blocks of flat, supplementing the development of the city. Teofilow, for example, was designed according to the utopian concept of a linear city by Oskar Hansen, which is why the industrial, communication, residential and green areas are clearly marked. In the district Gorna, neighborhood Chojny, which was developed chaotically prior to socialist period was mostly also rebuilt during this time, similarly as previously mentioned neighborhoods, with prefabricated blocks of flats. In district of Polesie, also on the outskirts in the similar manner neighborhood Retkinia was built, somewhat later in the 1970s and 1980s. Same happened on the outskirts of district Widzew. With exception of some early modernist neighborhoods, such as for

example Montwillla-Mireckiego – modernist neighborhood from the early 1930s, which is under conservational protection as the whole urban layout today, almost all socialist neighborhoods from 1950s until 1990s weren't by any means exceptional or unique.



*Figure 3. Housing Estate Teofilow, located in Lodz, Poland.*

*Most of the satellite housing estates built during socialism in Lodz were built using prefabricated elements, and without much architectural or artistic value, as they had to be built fast to solve the growing housing needs. However, the urban composition of the elements followed the modernist trends, accommodating greenery, space and natural light.*

*(Source: <https://pl.wikipedia.org/> author: Wiesław Grochowski)*

They all followed Le Corbusier's general postulate of space, sun and greenery, where prefabricated blocks were placed in the empty areas without much differentiation or design. All of these areas, when built, were equipped with some basic services, with local department stores as free-standing objects in space, with a lot of green spaces, playgrounds etc. However, they were built with idea of efficiency foremost, to solve the problem of lack of housing, therefore even the architecture itself is far from ideas which can be seen in Le Corbusier's Unite d'Habitation for example. Furthermore, many of the residents often worked in the existing industry, still located closer to the city center, which turned these neighborhoods quickly into "bedrooms of the city", rather inactive and dependent of the development in the city center, also without any adjoining functions such as leisure, service and cultural objects. Urban changes in these neighborhoods were happening rather spontaneously than planned over time, often resulting in chaos in space nowadays. Many green areas, playgrounds and public spaces were transformed to car parking spots, due to constantly growing need for car parking in the city, local businesses were often replaced by larger corporations after 1989 and many leisure, service and cultural functions never even developed in these areas, making them still dependent on the city center. However, these satellite neighborhoods and outskirts are often not included in any urban regeneration plans, which is the case with urban regeneration in Lodz nowadays. This

is not to say that the urban problems in these neighborhoods don't exist, quite the opposite, but because of their lack of history, lack of historically important objects and location, these neighborhoods are often underestimated and not included in the regeneration.



*Figure 4. Montwillia-Morecki Housing Estate, view from air, Lodz, Poland. This is the one of few large housing estates from modernism which is declared cultural heritage and placed under protection, however the spontaneous urban changes in the space still happen.*

*(Source: <https://www.facebook.com/padronPL/>)*

## 2.2. Case Study – Zagreb, Croatia

Zagreb is the capital city of Croatia, where 19,9% of the whole country population live, according to statistics from 2019 [Zagreb u brojka 2020], with around 810 thousand inhabitants. The city also developed radically in the 20th century due to the rapid industrialization. However, due to delayed development and country not being independent, industrialization process in Zagreb was delayed when comparing to other industrial cities in the Europe [Nadilo and Regan 2015].

In the rapid city expansion and growing housing needs, socialist urban plans and large-scale projects developments can be observed all around the city. These were large-scale urban investments, excluding the small-scale urban changes which took place in the city center area, for example when historical objects were also being replaced with, what was then seen as contemporary architecture, or unbuilt plots and areas were developed with often uncontextualized architecture. Development of Trnsko neighborhood is used to describe the state of architecture and urban planning in Zagreb (and Croatia) during this period.

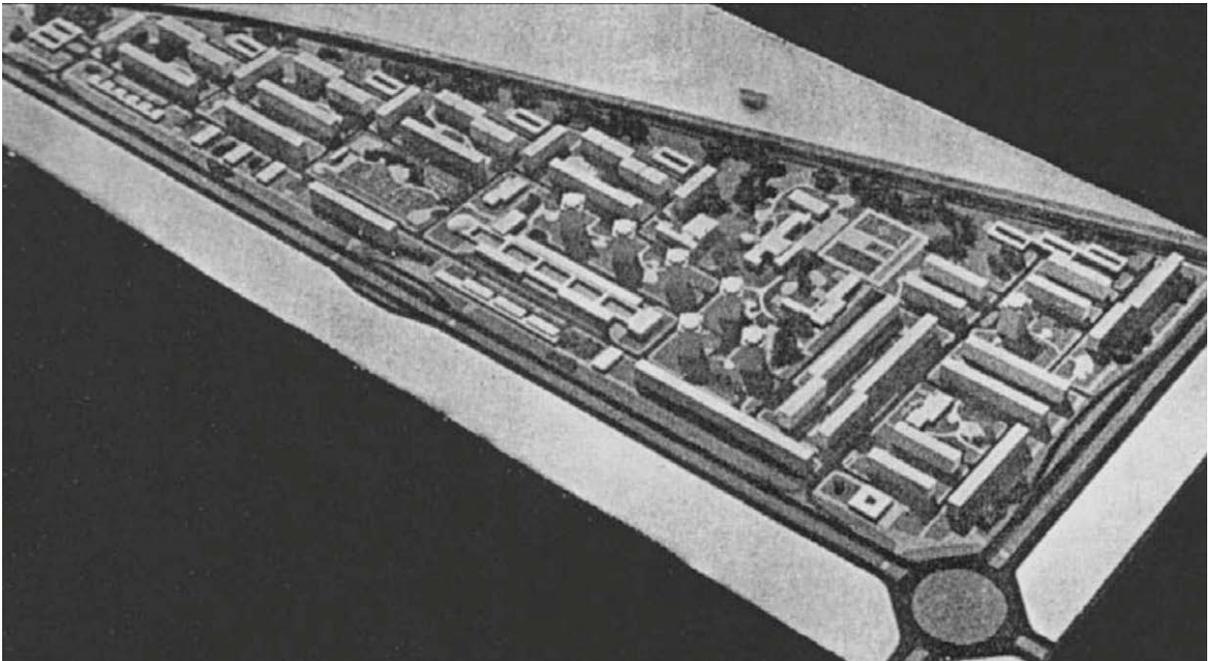


*Figure 5. Trnsko Housing Estate, historic photograph, unknown year. Located in Zagreb, Croatia.*

*(Source: City Archive Zagreb)*

Urban plan for Trnsko was developed by architects Maretic, Kolacio and Uhlik, and represent one of the examples, amongst many similar ones, which portraits the socialist urban planning practices in Zagreb. After rejection of the city urban plan in 1953, architects gained almost full autonomy in process making decision regarding urban space and architecture. It was already decided that the city needed expansion on the other bank of Sava river, where it was mostly agricultural land, with low built density, of mostly small objects and houses, except buildings of Ship Building Institute and Zagreb Fair area with numerous pavilions. Realization of these two projects instigated illegal building in the area (building objects without building permission from local authorities – this phenomenon will be more closely described later on in the study), which prompted professionals to react [Barisic-Marencic 2013]. Southwest of the Zagreb Fair, along today's Dubrovnik Avenue, the original housing construction in South Zagreb (now New Zagreb) began in the northern part of Savski gaj in 1957, but Trnsko, which construction started in 1960, is the first fully planned, designed and constructed large-scale New Zagreb settlement. Trnsko plan was the precursor for drafting the Preliminary Urban Design of South Zagreb in 1962. Cvetnic and Klemencic [2008] state that the author, Maretic, stated that urban conception of the whole of South Zagreb was based on the results of the evolution of urbanism in the developed countries of the world. In terms of the distribution of volumes in space, and the volumes are buildings, Le Corbusier's principle was closely followed, according to which as much air and greenery should be provided. The main concept was basic, regular disposition of the economic type housing objects, for 10 000 inhabitants, that rhythmically elude the park spaces. In the spirit of the time, the design solution is elaborated to the level of interior and furniture design in particular objects. However, the gap between urban norms (modeled on Western standards) and the economic possibilities of Zagreb then meant that sometimes (or more precisely - often) the design ideas aren't fully realized. In this project, for example, many public typology objects such as cafes, the restaurant, as well as a culture center, were never built. This reduced the social quality of the settlement. Furthermore, the lack of planning process dedicated to the surrounding and infrastructure was even bigger problem. Trnsko was completely separated and disconnected from its surrounding, both from eastern and the western neighboring zones, as it was "clamped" in between the railway

embankment and the Newlyweds Park, not having possibility to develop necessary infrastructure [Barisic-Marenic 2013].



*Figure 6. Trnsko housing estate in Zagreb, photograph of the mock-up (model)  
(source: City Archive Zagreb)*

Nevertheless, despite the shortcomings, Trnsko was seen as success, prompting the development of the whole South Zagreb area, south of the Sava riverbank, in both west and east direction. The South Zagreb area was planned for about 250 000 inhabitants on a total area of 2350 hectares [Barisic-Marenic 2013]. It is structured according to the spatial urban plan from 1962, where Maretic was also one of the authors. It was divided in four residential areas, based on the cardo - decumanus system, which is the main traffic concept. The area was planned mainly as the housing area, which in time turned it to the “city bedroom”, completely dependent on the other city areas, mostly city center. This example provides to view on the autonomy and importance of architect as the figure in society, as architects (also working as planners) had almost complete autonomy and freedom in terms of expression, both in artistic as well as technical way, as well as in decision making process. The importance which architects gained in society during the socialist period overcame the transition to new system and is visible nowadays as well. What is important is that the quality level of architecture objects individually is not the problem, as modernism during the socialist period produced some exemplary works of architecture. Furthermore, individual housing objects were designed with highest attention to detail, with good apartment floorplan layouts, which are popular on the real-estate market still nowadays, therefore proving their quality. Architectural and artistic freedom gave possibility to architects to follow the trends from the west and create good living conditions, with low-cost buildings, thanks to the new technological and material opportunities being available. The era of socialism in Croatia is in this regard different to the same period in Poland, where in many cases visible on examples from Lodz, architecture also lacks quality and where satellite neighborhoods were often built quickly, from prefabricated elements, not providing any revolutionary architectural insight or interesting space developments in residential units as Croatian modernism often does. However, similarly as in Lodz, treatment of general urban tissue and space

is proving to be problematic nowadays, with many spaces requiring urban interventions. From urban planning point of view, with changes happening in the city these neighborhoods often suffer infrastructural problems, lack of public space, devastation of existing public space, lack of parking etc. Therefore, satellite neighborhoods in Zagreb pose even bigger challenge for urban regeneration, as aside of improvement of general urban conditions, they in some cases offer admirable architecture objects, which should be preserved during the process of revitalization.

### 3. Conclusion



*Figure 7. Transformation (modernization) of housing blocks in Bordeaux, France, according to the Lacaton Vassal architecture office design. Instead of fulfilling contemporary thermo-insulation needs by just adding the Styrofoam to façade, Lacaton and Vassal added “new skin” to the building, which also provided residents with additional living space.*

*(source: miesarch.com, author: Philip Rault)*

Since the independence of post-socialist countries, there are no as large housing estates built as were built during socialism. Urban regeneration therefore becomes the one of the largest urban planning policies affecting the city. Urban regeneration, in both Poland and Croatia, is more commonly known as the term “revitalization”. With the success of what is in general public presented as revitalization projects, the term revitalization became popular in mainstream media and general politics. It is often overused, with any sort of renovation being presented as revitalization. It is important to note that not all work being presented as revitalization, is actually the interdisciplinary process of repairing degraded areas. Modernization of street elevations, including the thermo-modernization, often focused on adding layers of Styrofoam to building facades, with new layer of paint, although it can slightly improve the living conditions, shouldn't be presented as revitalization. Furthermore, it often leads to devastation of the architectural objects from modernism era. The modernist housing estates, often outside of the border of wider city center area anyways are not included in the existing revitalization plans, therefore urban changes in these areas are still largely unregulated. Furthermore, privatization of housing units leads to owners have deciding role on possible urban changes in future, which is often carried out without professional consultations, if the building or the area isn't under official conservational protection. However, official protection can lead to stagnation of the

area, which can further lead to its continuous degradation. Modernist mass neighborhoods still suffer from lack of infrastructure and connectivity to the city, degraded public spaces which are often transformed to car parks. Furthermore, although greenery was an important aspect in the original planning concepts, absurdly these neighborhoods nowadays often lack the greenery which was during time often transformed to other functions or simply became degraded due to lack of care and investments. Furthermore, individual buildings are often “modernized” in bad manner, with no regulation on the changes to objects appearance. The change in architectural discourse, particularly regarding mass housing modernist architecture, is already visible in the western countries, with examples of conservational protection placed on many exemplary objects from modernism period, but also in terms of carefully considered adaptation as is for example case with tenant objects renovated by Lacaton and Vassal architecture office in Bordeaux. These examples should be interpreted to local needs and used to form the official regulation concerning urban regeneration of the mass housing neighborhoods in the central and east European post-socialist countries. In direct comparison of the two analyzed cities, Lodz and Zagreb, both of them suffer from similar urban problems in the modernist neighborhoods, such as lack of functions, as these neighborhoods were often planned as satellite neighborhoods, depending on the city center, with which in recent years connectivity is getting worse due to poor investment in public transport infrastructure and rising number of cars. Rising car ownership also often affects the state and condition of public spaces in neighborhoods, which when designed were planned as green and recreational areas, now often barbarically turned into parking plots. However, it needs to be said that these neighborhoods still are popular places to live, as the design and orientation of the apartment units is often well designed and built with good quality, which is particularly the case in Montwillla Mireckiego neighborhood in Lodz and Trnsko in Zagreb. While it can be argued that wide area conservation protection for these neighborhoods also has negative impacts, as it presents barrier in carrying out often necessary urban changes, it proves effective in terms of protecting the authenticity of the historical architecture and urban planning. In case of Montwillla Mireckiego in Lodz, legal protection requires that any change is approved by professionals, primarily the conservators, and afterwards carried out by planners and architects. This is something which would be beneficial also for Trnsko in Zagreb, if not for the whole area, then at least for particular objects and their surroundings, which are exemplary works of modernist architecture, such as individual housing blocks, school or free-standing department stores, which have already suffered through numerous changes and poorly designed adaptations in the recent years.

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# Urban Resilience in Post-Soviet Built Environment Renewal: the Case Study of Yakutsk

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## ABSTRACT

*Russian Arctic cities experienced intense urbanization between 1950 and 1980s, as thousands of inhabitants moved to the North, resulting in new scenarios for former small villages and settlements. Yakutsk is a sub-Arctic post-Soviet city that demonstrated a high level of economic development, despite its extreme weather conditions, being the largest city worldwide built on continuous permafrost. This paper aims to understand how urban resilience is being tackled in Yakutsk through the needed renewal of the built environment. Shocks, climate change trends and stresses, alongside projections of abrupt temperature increase in future, combined with permafrost thawing, all pose urban fabric at significant risk. By building on existing grey literature and fieldwork regarding Yakutsk's current natural and built environment and climate crisis, the research concludes that it is actually in human actions and building procedures where a difference can be made to bring positive changes to the city in mid- and long term. Beyond climate change, technogenic pressure must be considered as the most severe risk to permafrost, and therefore several recommendations in terms of the quality of building techniques and eco-design measures are presented that can help the city become a reference in climate resilience, mitigation and adaptation.*

## KEYWORDS

*Urban resilience; arctic cities; permafrost; built environment; housing; risk reduction*



Figure 1. Yakutsk built environment. Source: Nikolaiev N., 2019.

## 1. Introduction

Yakutsk is known for being one of the coldest cities in the world, and the largest one built on permafrost. It was founded in the early 17th Century as a military, administrative, and trading center (Zueva et al. 2008) and is currently the capital of the Republic of Sakha (Yakutia). Once its military purposes ceased, its administrative character flourished significantly (Interview n<sup>o</sup>1). During the 1950's and 1980's, Yakutsk experienced a rapid urbanization process as a response to its economic and population growth. The region became extremely important to the post-Soviet extractive economic model, due to its vast natural resources.

Nowadays, the city presents a rich mix of urban and suburban spaces, composed of settlements, agricultural lands, forests and industries, among others (Lebedev, 2017). It is characterized by its administrative, political, cultural and economic activities that influence Russia's Far East region. While it is true that diamond mining, gold, gas, oil, precious metals, coal and timber are some of the resources that the republic depends on (Sukneva and Laruelle, 2019), Yakutsk is nowadays mainly recognized for being a cultural and educational center, due to the growing importance of the universities as the main drivers for immigration to the city (Interview n<sup>o</sup>1).

Therefore, Yakutsk is one of the Northern cities that has demonstrated a high level of urban economic resilience, -even after the national political situation in the 1990s- which has influenced a newly built housing stock, public spaces, and urban infrastructures. However, the urban population is exposed to recurrent environmental risks as forest fires, erosion, and floods caused by Lena River, as well as the permafrost degradation that affects infrastructures (e.g., impeded drainage), settlements, industrial and agricultural areas (Gadal et al., 2021). Despite Yakutsk's positive influence in the region and the national economy, still more than 23% of its population lives in dilapidated and/or unsafe shelters, 2/3 of the housing stock are severely depreciated and needs rehabilitations urgently, and the 35% of housing buildings have been labeled with an emergency status (UN Habitat, 2021).

The research, hence, elucidates on how urban resilience is being tackled in Yakutsk through the renewal of the built environment -more specifically, housing- by looking into how the techniques used in the built environment address climate change and permafrost protection. To fill this lacuna, the paper conducts archival research on existing grey literature, resilience reports built upon qualitative and quantitative data obtained either from the field (statistics, local data and interviews) or via satellite information and obtains direct empirical evidence from field visits and an in-depth semi-structured interview with a local specialist in urban planning.

## 2. Yakutsk: a city at risk

### 2.1 Current challenges

Some of Yakutsk' challenges are its remoteness, extreme climate conditions, climate change, and permafrost thawing (UN Habitat, 2021). With regards to climate change, the average annual temperature registered is  $-8.8^{\circ}\text{C}$ , its temperature amplitude is  $102.8^{\circ}\text{C}$  -as it variates between  $-60^{\circ}\text{C}$  in winter to  $40^{\circ}\text{C}$  in summer-, presents frost 169 days a year, and 195 days of ice (Lobelia, 2018). It already has consequences on the permafrost condition due to the presence of underground ice wedges in the area (Bosikov, 1991). Nowadays, almost half of the ice wedges remain in upper permafrost layer and can thaw (Desyatkin et al., 2021; Ivanov, 1984). Despite global warming, permafrost remains thermally stable due to snow accumulation in short-term variability (Varlamov et al., 2020), but threatens the foundations of the city as it causes subsidence in housing and urban infrastructures.

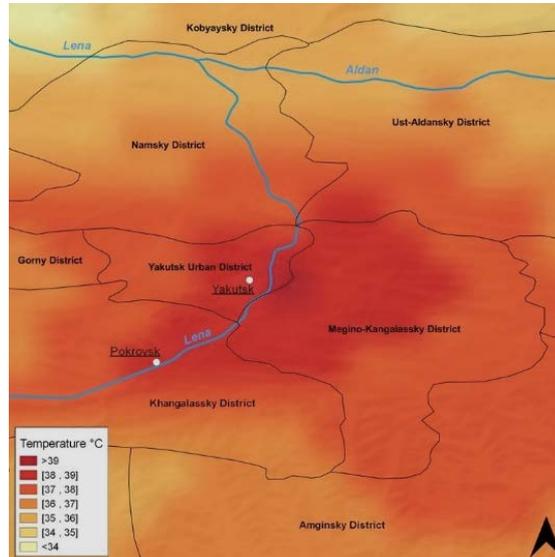


Figure 2. Maximum temperature in Yakutsk, Russia, in July. Source: Lobelia Earth, 2019.

There has been an increase in annual average temperature in the area, as a consequence of the rise of winter temperatures and shorter winters (Desyatkin et al., 2021). This issue is linked to global warming (Gorokhov and Fedorov, 2018) and some authors claim that it may cause irreversible changes in ice landscapes, despite being urbanized or not (Desyatkin et al., 2021). Moreover, this rapid thaw of permafrost can cause severe damage in the atmosphere as it releases methane, a greenhouse gas (Walter et al., 2006).

## 2.2. Shocks and stresses

Spring floods are the main recurrent shock in the city, since most of the urban developments are built on flooding plain and floods caused by ice breakup are extremely difficult to manage (Rollot et al., 2016). Summer wildfires have a high negative impact on the city. More than 80% of the region is covered by boreal forest known as taiga and droughts and extremely high temperatures, creating ideal conditions for them. The smoke damages urban air quality and increases levels of dangerous particles (The Moscow Times, 2021).

Besides the failure of supplies -due to its remoteness and climatic conditions- and the failure of infrastructures (dilapidated shelters, depreciation, and housing buildings labeled with an emergency status, among others), urban fires are also a critical shock to the city. Around 40% of them occur in the residential sector, affecting private traditional wooden houses (relying on traditional heating systems (i.e., stoves) (UN Habitat, 2021).

During the last decades, Yakutsk has also experienced territorial growth, embodying neighboring villages and towns. Its social structure is characterized by high migration rates -where 95% of the population lives in the urban area of Yakutsk (Lebedev, 2017)-, as a result of massive rural Yakut population moving into the city looking for better opportunities, creating a 'genuine indigenous regional capital' (Sukneva and Laruelle, 2019), where Sakha and Russians coexist. Numerous international migrants, -mainly from Central Asia- arrive to the city as seasonal workers or for permanent living. One of the principal stresses encountered within the urban population is defined as Socio-economic Deprivation. Due to the relatively low incomes compared to the cost of living in the region, the housing stock is unaffordable for those not covered by subsidies (UN Habitat, 2021).

The urban built fabric, infrastructures, and public spaces and facilities are under pressure by these shocks, stresses and challenges that trigger its critical environmental and social situation.

## 3. Building on permafrost

### 3.1 Yakutsk's permafrost: a shock to urban housing and infrastructures

Permafrost is defined as ground (soil or rock and included ice or organic material) that remains at or below 0°C for at least two consecutive years (International Permafrost Association, 2015). Permafrost is found underneath different layers: usually a surface layer, and an active layer of seasonally thawed bed of soil and lastly, permafrost. Depending on the area covered by permafrost, it is classified as 'continuous' when 90% of a surface is underlain by permafrost or 'discontinuous' or 'sporadic' when these percentages are below 90% (Streletskiy et al., 2019).

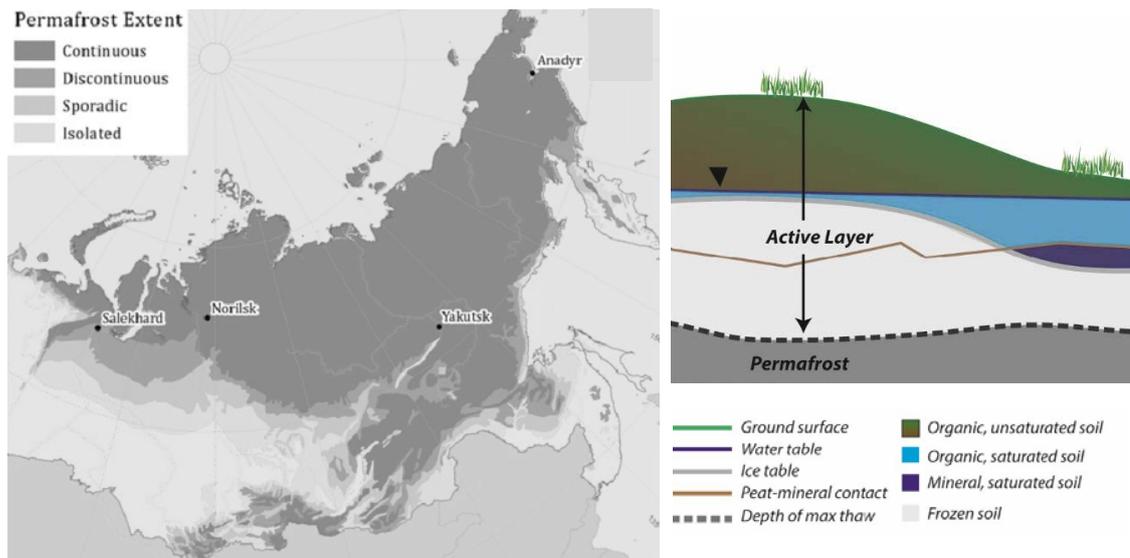


Figure 3. (Left) A permafrost distribution in Russia based on the Circum Arctic Map of permafrost. Source: Streletskiy et al., 2019. (Right) Active layer scheme. Source: Nicholaides, 2016.



Figure 4. Building damaged by permafrost melting. Source: Euromaidan Press, 2016.

As explained previously, as a ground ice-rich sediment, its thaw causes subsidence or termokarst. Uneven surface deformations may render the building and/or infrastructures fragile and cause structural problems, undermining the stability of such structures (Hong et al., 2014; Nelson et al., 2001;)

Summed to the aforementioned points, it must be highlighted that the weight and volume of urban buildings directly affect permafrost. Urban expansion in Yakutsk has been inefficient with high land consumption and scattered small wood housing in the surroundings and multi-storey buildings made of concrete at the city center. Contrary to other geographical locations that share similar climate characteristics (as North America or Scandinavia) where the residential buildings or industrial facilities are relatively small and lightweight, in the Russian Arctic, apartment buildings and structures create a built environment that is massive and heavy weight (Shiklomanov et al., 2017). At the same time, the loss of traditional architecture and the lack of eco-

design measures implemented in buildings can be observed in the city, negatively impacting the urban identity and the environmental sustainability of the urban fabric.

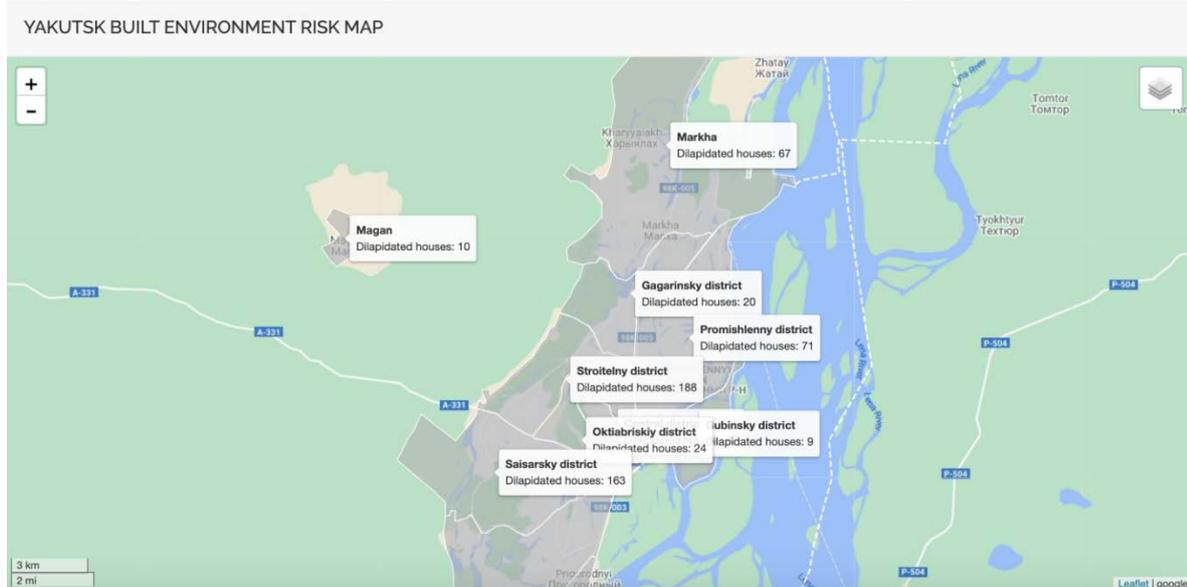


Figure 5. Dilapidated houses in Yakutsk. Yakutsk Resilience Dashboard. Source: Urban Resilience Hub, 2020.

All of this presents difficulties in the housing structural situation in Yakutsk for different reasons. On the one hand, even if only 5% of housing is located in risk-prone areas, 35% of housing buildings are identified under emergency status. 'Thawing bowls' have formed under most houses and high cost of construction and maintenance are critical for the urban built environment. On the other hand, the legal framework provides relatively high tenure security (71.90%) and provision of housing schemes, although adequate housing is generally considered unaffordable for exempted groups (UN Habitat, 2021).

### 3.2 Housing building's foundation techniques and permafrost protection

Engineering procedures to build on permafrost rely on a variety of safety factors for the construction's processes (Streletskiy and Shiklomanov, 2013) and further maintenance operations, in order to minimize potential uncertainties related to climate change and human activities that could affect the quality of the buildings and infrastructures.

In Russia, Principle I and II (known as 'passive' and 'active' methods in North America) are applied to build on permafrost: In 'Principle I', permafrost (used as the base for foundations) is protected from thawing during the structure's construction and maintenance phases. In 'Principle II' permafrost is thawed before and/or during the construction phase. Therefore, the ground is protected from permafrost degradation during the structure's maintenance. The increased thaw-unstability of permafrost under a climate warming scenario must be considered in the active method. In Russia's case, more than 75% of the buildings on permafrost were constructed using the first construction principle (Streletskiy et al. 2012).

As for the passive method, safety coefficients have been analyzed in North America (with a range from 2.5 to 3) and Russia (with around 1.56 as the highest encountered). This unveils that currently in Russia, foundations built on permafrost are especially vulnerable to climate change (Shur and Goering, 2009). Some authors (Khrustalev, 2000) even state that all foundations in Yakutsk can be prone

to deformation when considering a scenario where climate change and temperature increase 1.5°C.

Mainly under the passive method, permafrost geotechnics include different foundation designs for housing buildings as the traditional beam system, pad and post, slab-on-grade or piles (Sheshpari and Khalilzad, 2016). These are explained below.



Figure 6. A typical Yakutian Izba and a prefabricated panel block from the late 1980s. Source: Veryovkin, 2021.

1. Beam System: In Yakutsk, the traditional beam system has been applied. Since the structure is in direct contact with the ground, heat is transferred into the frozen ground, provoking ice melting and structural settlement and damage (Clarke, 2007).
2. Pad and post: this system includes a concrete or wood pad either on the ground or under the ground. Here, the structure is separated from the soil allowing air flow below it, protecting permafrost from the heat.
3. Slab-on-grade: The slab transfers the structure loads to the ground beneath. In areas as Yakutsk, where temperatures drop below freezing during winter, slab edges are not always surrounded by foam insulation and therefore it cannot be assured that all the construction protection layers are in place to prevent freeze-thaw damage. (Sheshpari and Khalilzad, 2016). Insulation below the floor slab and a heat removal system are recommended related technics (Wagner, 2014).
4. Piles: Piles are another common foundation type in permafrost areas and can be made of concrete, wood, steel and coated materials. The design applies a safety factor so as to keep settlements in acceptable range, despite potential different soil and permafrost conditions. Moreover, the friction resistance (and adfreeze in the case of permafrost) is taken into account. It is important to highlight that a significant reduction in adfreeze strength of the pile-soil interface (approximately 300%) has been found when the exposure temperature increased from  $-1.5\text{ }^{\circ}\text{C}$  to  $0\text{ }^{\circ}\text{C}$  (Aldaeef and Rayhani, 2018).

All these techniques are usually equipped with air ducts or thermosyphons to ensure permafrost protection and refrigeration (Sheshpari and Khalilzad, 2016). Initially thermosyphons -commonly used in Russian for buildings and structures since 1990- (Popov et al., 2010) were designed as passive, pressurized, sealed pipes. Afterwards, they were transformed into either active (linked to a heat pump) or hybrid refrigeration and protection systems. They can be installed vertically, horizontally, on a slope, as a flat loop, or completely buried (Wagner, 2014).



Figure 7. Aged Housing Units in Yakutsk.  
Source: Mokrushina,2017.

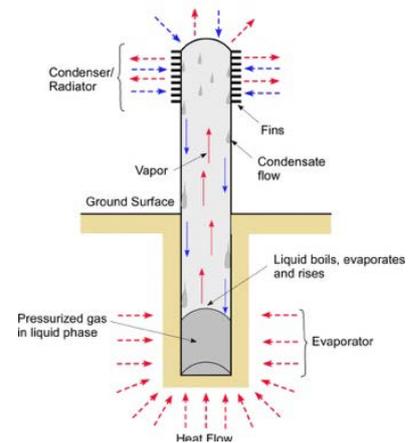


Figure 8. (Left) Hospital in Yakutsk and thermosyphons. Source: Time news, 2021. (Right) Passive thermosyphon - without external power, functioning when air temperatures are below freezing and lower than the ground temperatures-. Source: Wagner, 2014

### 3.3 Current urban dynamics and housing programme

In Yakutsk, the current urbanization processes are directly influenced by the federal law legislation. Even though the Russian Federation's transition to sustainable development was released in 1996, since the 2000s, the concept of 'sustainable' was left behind and even dropped from the urban planning discourses in Russia (Maximova D., 2018). Nowadays the focus shifted to develop and finalize as soon as possible several urban developments, as the 100 years anniversary of the Yakutia Republic will take place next year (Interview n<sup>01</sup>).

In terms of housing, the *Federal Programme for Relocation from Emergency Housing* provides funds to demolish old wood buildings and resettle population living in what is considered low quality and dangerous housing (UN Habitat, 2021). The condition of the existing houses is very critical, as they were built after the 2<sup>nd</sup> World War with a low budget and under the need to tackle the housing problem due to population inflection, resulting in very poor-quality buildings (Interview n<sup>01</sup>). The *Housing Urban Environment Programme* introduced an Urban Environment Quality Index for Russian Cities (By4Cities, 2018). However, the new investments focus on

multi-stories (12-16) lucrative concrete structures that do not introduce new building measures and safety coefficients but follow similar construction patterns used in the past (Interview n<sup>o</sup>1).

Along the same line, the *Strategy for Social and Economic Development of Yakutsk until 2032* proposes to improve the housing stock, public spaces and facilities, and the accessibility and quality of communal infrastructure and services (UN Habitat, 2021). Nevertheless, more innovative, resilient and eco-efficient ways of building are not being implemented yet in the city, even if the municipality has co-developed an urban resilience profile with UN- Habitat (Urban Resilience Hub, 2020). In fact, there is an actual problem related to the political and economic interest of monopolies from service providers that mainly prioritize profits over other matters, following a path dependency inherited from its past (Interview n<sup>o</sup>1).

Nonetheless, innovation in the urban sector has been proved to be possible (e.g., the case of Zhatay district) where a green house (Investment Development Agency of the Republic of Sakha, 2018) and several experimental multi-storey housing buildings have been developed, introducing the use of heat pumps (already demonstrated as successful) and solar panels (still under analysis due to the fog issues). The project has been gradually abandoned since not enough funding is available and it required specific expertise very limited in the area (Interview n<sup>o</sup>1).

#### 4. Discussions and conclusion

After analyzing the current challenges, shocks and stresses affecting the urban built environment, and the building techniques used in the city, it has been demonstrated that beyond climate change, technogenic pressure must be considered as the most severe risk to permafrost (Grebenets et al, 2012). Therefore, it is actually in human actions and building procedures where a difference can be made to bring positive changes in the medium and long term.

In this vein, several technical recommendations can be made. First, in order to achieve enduring buildings that can buffer the impacts of climate change in permafrost, piles foundations represent the optimal construction system as long as they are designed under the corresponding safety factors. Second, attention should be paid to implementing appropriate spaces between the building structure and the soil for unobstructed ventilation. In this way, soil cooling is enhanced, as buildings generate shadows, (e.g., a multi-storey apartment block needs more space below than a two-storey one). Also, water leakages and heat transferring should be avoided, ensuring energy efficiency and protecting the permafrost from heating. Third, constructions must refrain from building massive infrastructures and these should be designed as lighter structures such as steel pillars, and not heavy concrete infrastructures. Lightweight wood panels in outer building skins, for instance, not only provide efficient and effective quality construction standards (e.g., thermal insulation and energy-saving) but invite the city to revise and update its identity based on birch wood. To support the permafrost constant temperature highly sophisticated cooling technologies must be enhanced and implemented.

All in all, the building techniques should be of the highest quality, counting on accurate safety structure factors and eco-design measures (that could include environmental methodologies for design and construction as PassiveHouse, Minergie, LEED or BREAAM, among others) to minimize building impacts on energy, water, resource materials and waste, while also improving the environmental quality among the buildings and in the city itself. These environmental procedures should be applied to the refurbishment and rehabilitation of the current building stock.



Further research can be directed into comparing and/or looking into different building techniques used in similar contexts. There are already some good references to follow, such as the case of Norilsk, Russia, where existing foundations on permafrost are reused to support lighter buildings and structures engineered in accordance with the rapidly changing ground thermal regime (Shiklomanov et al 2017). Another innovative example to analyze could be the case of Longyearbyen, Norway, where steel piles are introduced 15 meters through permafrost (settled on the rock beneath it), and buildings are lifted thanks to modulated wood frames, and more separated from the ground than before (compared to existing buildings) to avoid heat transfers to the permafrost (Skanska, 2019). Other lighter metallic or wood structures and innovative materials such as carbon capture panels (why not imagine a methane capture façade in the future?) must be created and applied.

Along with the technical recommendations and addressing some of the stresses encountered in the current design and construction procedures and engineers' decision making, the City Resilience Global Programme recommends a new Permafrost Insurance Program (PIP) to transform the real estate and development industry. It would include better permafrost data gathering and new insurance schemes creating financial means to increase the developers' responsibility in permafrost protection above all for rehabilitation and significant projects – without affecting housing affordability for small developers - (UN Habitat, 2021).

While the research falls short in including a wider scope of stakeholders to be interviewed -so as to understand this issue from different angles-, it is clear that Yakutsk's socio-ecological and political background is one of the main obstacles the city faces to innovate in proper urban development that responds to its environmental situation. It presents multiple challenges and risks that render the city fragile, but the city has already demonstrated a high level of urban economic development, and a transition towards a more resilient and sustainable future for the next generations should still be possible.

Not only engineering techniques must be correctly developed to maintain permafrost's thermal stability during the construction process and lifespan of buildings and/or infrastructure (Streletskiy et al., 2019). Pioneering insurance schemes, innovative eco-design measures and visionary materials applications must be put in place. It will ensure and enhance the urban fabric quality regarding the environment and the identity of a city that can be a worldwide reference of climate change mitigation and adaptation.

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# Experimental Architecture: Examining Hungarian Campings through the Examples of Two Different Styles in the Socialist Era

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## ABSTRACT

*Camping became a mass movement and from the middle of the 20th century it started to play an increasingly important role in the European and thus the Hungarian tourism. In addition to hotels, motels and cottages, campings have also attracted more and more people near rivers, lakes and mountains. The camping — an ensemble of small-scale, scattered service buildings integrated into the natural landscape — has appeared as a new function in the Hungarian architecture. Due to its small volume and the lack of serious professional expectations, campings did not play a significant role in the architectural discourse, as a result of which it could become a field for designers' formal experimentation and search for individual styles. This study examines campsites of two different architectural characters, based on their formation, the density and quality of their built elements, focusing on the experimental architectural attitude. Some outstanding examples of the modern and the organic architecture can still be found as campings, giving an opportunity to research them based on today's perception. In addition to the original plans, photos and archive documentation, the sources of the work are site visits and photos of the current state.*

## KEYWORDS

*camping, experimental, modern, organic, landscape*



*Figure 1. The outdoor oven of the Balatonakali camping (Source: Lechner Tudásközpont/VÁTI)*

## **1. Introduction**

Camping is a function that has been strengthened during the years of socialism and has become one of the most important factors in tourism in Central Europe and which has begun to disappear with the change of regime. This is due, on the one hand, to the change in tourism and, on the other hand, to the fact that these buildings, even if they have architectural value, are not under local or national protection due to their small scale and function. This essay was written to present some notable examples of this feature that are still visible to this day and function as campings. Since Hungarian research on the topic has not been published yet, this dissertation is related to international texts and articles, most closely to Xavier Martín Tost's Architecture for Informal Tourism – Mild Occupation of Landscape through Campsites.

## 2. The architecture of campings

### 2.1. Historical background

Active recreation in nature, as a form of leisure life, has appeared in the end of the 19th century (Misley, 1985). This type of recreation has developed almost in parallel in Europe and North America. In the former, the Association of Cycle Campers (founded in 1901) and the Camping and Caravanning Club (founded in 1908) formed from it, in the latter, the spread of the Scout movement was a milestone. World wars interrupted the rapidly evolving process, yet camping grew into a mass movement, which was mainly due to the strong cohesive power of national and international hiking associations and trade unions. After World War II life has changed in economic, technical, social and psychological aspects as well: from the 1950s onwards, urbanization transformed the way of living (eight-hour working hours and one week holidays per year became common), which also led to a revolutionary change in tourism. In addition to hotels, motels and cottages, camping has attracted more and more vacationers close to natural attractions (rivers, lakes, mountains). It was possible to integrate seasonal tent camps into the tourism industry by building infrastructure, controlling area capacity and providing sanitary comfort.

In Hungary, for the first time in 1958, the National Tourist Board commissioned the Lake Balaton Management Committee to set up experimental campsites (Szauer, 1964). These were so successful in their first year of operation that in 1960 they ordered another ten campings, and by the '80s almost 50 operated nationwide. At that time, half of Hungarian tourism was tied to campsites (Petykó, 2010). The regulation and preparation plans were drawn by state-owned large companies, as well as the architectural plans. As in other socialist countries, the campsites in Hungary were also state-owned until the 1980s, when private investments started to appear.

### 2.2. The specific design of the campsites

In contrast to other buildings used for tourism, campsites are derived from the natural landscape around them and should be interpreted together. Attention to their surroundings is a basic condition for campsites, which determines their development, but as a result of longer-term, local use (more and more people are camping in the same place, with ever-increasing comfort needs) built elements also appear. The peculiarity of the campsites is that they shape their environment in a reversible way and determine the wildlife as little as possible with the added elements (Tost, 2015). This is mainly due to the paradoxical situation that the campsites, supplemented with their built elements, were originally created as the opposite of urban life, close to nature, so the buildings constructed in them try to hide, not stand out.

One of the aims of this study is to prove the hypothesis that **the architectural language of the permanent elements of the campsites is unique and peculiar, the logic of their design differs from the common construction conditions.** The assumption – in addition to seasonal use – is based on the fact that such small-scale and special-function architecture was not in the Hungarian tourism before and **the architects designing the campsite worked with formal references instead of functional ones, which led to a kind of liberated architecture.** The campsite expected a completely new functional scheme from the designer: a chain of independent service buildings that, although different in function, had a unified image. The architectural feature of the campsites is that, compared to hostels and hotels, the different functions are not grouped in one house, the individual destination units are



located in separate buildings. This is due to the easy and clear accessibility on the one hand, and the large area and the resulting distances on the other. The buildings usually have the following functions: reception, caretaker apartment, sanitary blocks, kitchen, storage. Sleep - one of the main leisure activities - does not take place in the buildings, so the kind of coziness and intimacy that a visitor expects in a hotel or holiday home does not have to be provided by the campsite buildings. Their mass formation is simple, their scale is proportional to the natural elements, there is no unnecessary decoration on their facades. Functionality is the most important guiding principle in design, these service buildings do not want to offer anything more than what is appropriate and expected. Seasonal use (open from spring to autumn) allows certain architectural gestures such as 'floated' roof, which not only aesthetically lightens the building but also helps the function (easy ventilation, the floor dries faster etc.). It is also due to seasonality that the structure is not covered by thermal insulation, and shows itself.

### **3. Field of experiments**

In the following, the dissertation examines Hungarian examples that try to support the hypothesis that, due to its scale, seasonal use and new function, the campsite did not belong to the mainstream of architecture; this marginal situation gave architects the opportunity and freedom to experiment with different formal and intellectual ideas. Presenting two different perspectives – the connection of Hungarian modernism to international structural innovation and the source of inspiration for anthroposophy – the dissertation tries to prove this statement by focusing on the connection of landscape and architecture.

The first campsites in Hungary were opened on the shores of Lake Balaton in 1959. Coastal developments – and the Hungarian architecture of the age in general – started at the same time as the ideological compulsion of socialist realism (Wettstein, 2016), thus leaving new or hitherto marginalized intellectual ideas and tendencies in the background. One example of a formal and structural experimentation in the return to modernism is the reinforced concrete shell structure of the 1958 Tihany Camping sanitary buildings. Until the early 1970s, modernism was the dominant form language of Hungarian architecture (in residential, public, industrial and holiday architecture), at which time several path searches began in parallel, offering an alternative to the dominant style; the Mogyoróhegy campsite in Pilis is an imprint of the organic movement. The trend saw the possibility of renewing Hungarian architecture in folk art, the specific architectural form language is primarily associated with the name of Imre Makovecz, whose example of intellectual commitment and formal experimentation is the Mogyoróhegy Camping, which is examined later.

#### **3.1. Modern innovation experiments at the Tihany Camping**

1958, designer: UVATERV, János Dianóczki

The first major touristic investments mainly affecting the shores of Lake Balaton, due to its natural endowments; the first few campsites on the shore were built as a tourist experiment in 1959, of which Tihany and Balatonföldvár became the most popular, they were opened to foreign travellers as well in 1962.

The plan of the Tihany Camping was designed by János Dianóczki (UVATERV), as part of a larger investment affecting the shoreline of the peninsula near the ferry (Figure 2.). The first phase of the development included the campsite buildings and the



*Figure 2. The restaurant, the motels and the Kis Tihany Hotel with the camping (Source: Lechner Tudásközpont)*

half-timbered houses of the motel, followed by the restaurant, which has since been remodeled, and the Kis Tihany Hotel designed by Károly Polónyi in 1959. The motel and restaurant are directly linked to the 1958 Brussels World's Fair; the wooden houses of the motel were built as the Expo's accommodation, and the plan of the restaurant was purchased at the World's Fair and built according to the adaptation of Lajos Földesi in Tihany (Figure 3.).



*Figure 3. The restaurant designed by Lajos Földesi (Source: Fortepan/Kádár József/185836)*

The innovative buildings designed at that time, including the Hungarian pavilion with an aluminium façade in Brussels were a consequence of the changes in the Hungarian policy: after the 1956 revolution and the subsequent retaliation, the consolidating power gave a free hand in current international and domestic projects, signaling the beginning of a new, more open policy and diverting attention from the national political situation. The script for the 1958 Brussels World's Fair formulated a new concept (light, witty style, personal tone) that not only directly affected the exhibition, but also indirectly influenced the subsequent Hungarian works of art and architecture. This change was visible in IPARTERV since the early 1950s, where technical progressivity and intellectual openness made it possible to preserve professional sovereignty (Haba, 2019). The Brussels Expo, the international manifestation, the examples seen there and the masterpieces of Hungarian industrial



*Figure 4. Sanitary blocks in the Tihany Camping (Source: Fortepan/UVATERV/91706)*

architecture also contributed to the approach that replaced the socialist realism of the 1950s and began to use a clean, simple language of forms in the Hungarian architecture. During this period, experiments with multi-bent reinforced concrete shell structures began in various parts of the world, the breakthrough in the international press was made by the Philips pavilion on display at the Expo in Brussels. The Belgian company commissioned the then world-famous French Le Corbusier by designing whose office formed a spatial, complex shell structure constructed on floor plan curves. The styles trended in that period also appeared in the new functions of the developments on the shores of Lake Balaton (beaches, campsites), the water block of the Tihany Camping was built in the same year of the World's Fair, and although it lags behind the mentioned example in its scale and complexity, it has the same composition and structure. Among the buildings of the campsite, it is worth highlighting and examining the two sanitary buildings, which also bear the imprints of the mentioned period. Supported at one point, the hyperbolic paraboloid provides a striking, innovative architectural solution for accommodating a water block that is open at the top but bounded on the side (Figure 4.). Under the aerated reinforced concrete shell structure, a simple, transparent functional order is realized, the five-centimeter-thick floating roof also gives the structure of the house. The floor plans of the water blocks are open, their lines, structure and forms are simple, the white walls convey the purity.

Tihany Camping is unprecedented not only in terms of architecture, but also in terms of landscape architecture in the Hungarian palette. Dianóczki carefully considered the features of the existing terrain; the public buildings fitted to the terrain lines and the stairs approaching them clearly guide the visitor and make the private and public spaces easy to interpret. Elements of the plan are: caretaker house and warehouse, shower, toilet building, as well as the outdoor stove and drinking fountain located between them. These form a clearly visible bouquet of buildings; opposite the main staircase connecting the campsite with the road is the open-air furnace, which can be accessed from two sides by a curved road. At the junctions of the roads, on the



*Figure 5. The open-air furnace in the Tihany Camping (Source: Fortepan/UVATERV/91708)*

edge of the bunch of buildings, are the secondary functions, and along the road perpendicular to the axis of the main staircase and the kiln are the tent sites.

The furnace, open on all sides, is the focus of the plan; this is the gathering place where the tents meet, cook together, talk. This sculptural central element, like the sanitary buildings, consists of a curved reinforced concrete shell structure with a horizontal section tapering upwards (Figure 5.). The symbolic structure is open, walkable, and can be surrounded on all sides; the stove commonly used indoors here stands outdoors, reinterpreting its function. The material of its plinth is a local basalt shaped natural stone, this material, which has been present in the architecture of Tihany from the beginning to the present – here supplemented with reinforced concrete – results in a specific architectural language.

## **2.2. Architectural depiction of anthroposophy and folk motifs in the Mogyoróhegy Camping**

**1977-78, designer: Imre Makovecz**

As early as the 1970s, most tourist accommodation was provided by campsites. After the initial wave of construction, they tried to satisfy the growing demand by establishing more and more campsites and by transforming and expanding the existing ones. The campsite on Mogyoróhegy in Visegrád was designed by the Pilis State Park Forestry in 1977-78 with its chief architect, Imre Makovecz, and has been operating since 1981. The camp, like the one in Tihany, is one of the elements of a comprehensive regional settlement program.

Makovecz's works planned for Mogyoróhegy can be considered as a summary of his ideas so far and as a starting point for designers' *ars poetica*. The Mogyoróhegy Camping was not established without precedent; in 1965, the service buildings of the campsite belonging to the SZÖVOSZ resort in Balatonszepezd were also built according to Makovecz's plans. In these pavilions, the principle of anthropomorphic and zoomorphic spatial composition can already be observed, which becomes clear at

Mogyoróhegy: its harmony and organic connection is also strengthened by the unity of the houses serving the simple needs of use and the local building materials (stone, gravel, wood). The three small buildings take on the character of rocky, wooded forms of the environment; its downward-widening walls symbolize closedness, while the pleated, bone-like roof structure symbolizes openness (Gerle, 1996) (Figure 6.). The intellectual trend of the anthroposophy followed by Makovecz is most strongly associated with his architectural mindset in his works in the Pilisi Park Forest; the triad of man-building-landscape are organically connected to each other.

The Mogyoróhegy Camping was built more than 10 years after Balatonszepezd, comparing the two, Makovecz's new and old design principles are outlined. In both campsites, as in the other buildings, symmetry can be observed as a guiding line (Gerle, 1996); this principles do not lead to an architectural style but to connect the built environment with nature.

As in the previous example on Lake Balaton, the surrounding topography and landscape are decisive in the Mogyoróhegy Camping: the camp is placed in the existing forest, adapting to its pattern and openings. This kind of organic connection between landscape and building is the most coherent and most evident in the work of the designer so far. The plan consists of a total of six different types of pavilions: a reception building and a caretaker's apartment, sanitary buildings, a warehouse, a fireplace and a dining room. Makovecz took care to match nature with the placement of the buildings: the three-arch unit of the fireplace-dining room is organized around a selected, natural 'dome'; the roof shells of the cooking units point towards the – invisible – center of the whole mass. The building is unfinished in a tectonic sense (no roof), but by pointing the structure in one direction, the whole of the 'house' can be perceived. This relationship – that is, the fact that the building cannot be interpreted without the landscape – can be observed at all the outdoor sites of the campsite. The integration of houses into an organic landscape and the editing of the buildings themselves are the legacy of one of the designer's important role models, Frank Lloyd Wright (Simon, 2001/2).



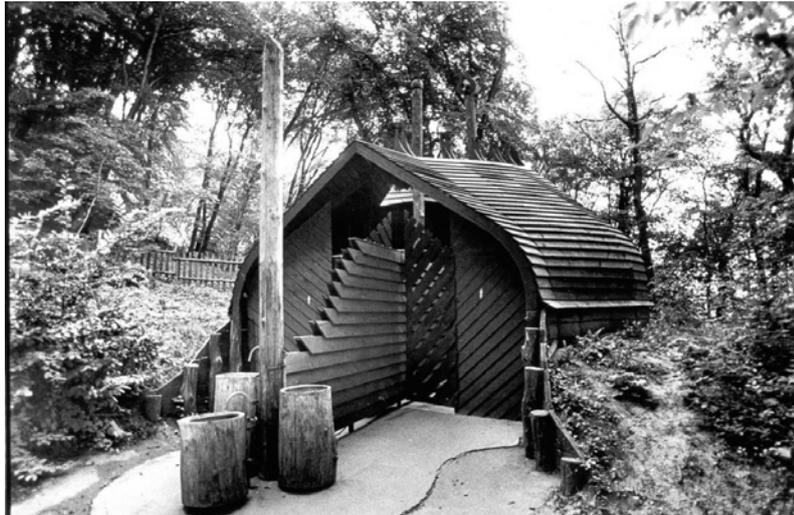
*Figure 6. Building in the Balatonszepezd Camping designed by Makovecz Imre (Source: makovecz.hu, Makovecz Imre Alapítvány)*



*Figure 7. The caretaker and the reception buildings in the Mogyoróhegy Camping (Source: Gerle János/Makovecz Imre Alapítvány)*

In the case of the campsite buildings, Makovecz uses an architectural language that connects the image of the built elements with the forest. The formal simplification of the anthropomorphic space that accompanies the designer's work can be seen in the building complex of the reception building and the caretaker's apartment.

The skeletal support structure of the camping buildings in Szepezd began to simplify as a result of Makovecz's experiments with form and minimum space in the early 1970s; the cleaned anthropomorphic space can be seen for the first time in the mortuary of Farkasrét (1975), followed by the caretaker and reception building of the Mogyoróhegy Camping (Ekler, 2012). The floor plan of the house is simple and transparent; it is here that the hexagonal floor plan scheme constructed from equal triangles in Wright first appears. The vertical construction no longer follows the Wright scheme, an arched glued wooden frame structure is placed on the floor plan (Ekler, 2012). The yurt-like mass formation of the two parts of the building mass is similar, with the conceptual line indicates the functional difference. The reception building, like the crown of the linden trees, consists of floor-decking outbuildings and a central, trunk-like column, while the caretaker's house reflects the shape of a dry mill (Gerle, 1996). The building's outer shell (façade) also characterized by observable one-way openings (Figure 7).



*Figure 8. The sanitary building in the Mogyoróhegy Camping  
(Source: Sáros László/Makovecz Imre Alapítvány)*

The simplified, anthropomorphic design concept is associated with the study of folk art forms in the campsite's sanitary buildings. During the few years spent at the Pilisi Park Forest, the organic character in Makovecz's plans became more and more intense; bringing plant and animal patterns to life was not a formal precedent, but an identification with the reality of the form (Rozgonyi, 1998). The first example of this is the sanitary building, where it uses the tulip form used in folk embroidery, lifts it out of the plane and shapes it into structure (Figure 8). This principle can also be observed in Makovecz's later plans, such as the 1987 Paks church.

The Mogyoróhegy Camping is a formal foreshadowing of the Tokaj community house (1977), where the hexagonal construction scheme of the campsite's reception building first appears in a circular shape, with a domed construction and vertical tile covering. This, and his next planned Dobogókő ski resort (1980) can be considered as a synthesis of Makovecz's previous aspirations, so Mogyoróhegy has a prominent role in terms of oeuvre, the experiments here establish the fulfillment of Makovecz's *ars poetica* (Ekler, 2012).

### **3. Summary**

At the time of their construction, both campsites were a formal innovation in different ways. The designer of Tihany Camping returned to the modern architectural tradition before socialist realism, experimenting with its new structural forms, combining the possibilities provided by reinforced concrete with local building materials. In the seventies, Imre Makovecz created an architectural manifestation of anthroposophy through his own works, in contrast to the prevailing Hungarian architectural trends; one of the important stages of this was the defining stage of the *ars poetica*, which summarized his work so far and accompanied his oeuvre is the Mogyoróhegy Camping.

Not only the circumstances of the construction, but also their afterlife are different, their original features changed in the process of transformation. Some of the buildings of the Tihany Camping have been demolished, some have been remodeled beyond recognition. At the same time, the area has retained its original purpose, it functions as a resort, but bungalows were built in two phases in place of the campsites. The Mogyoróhegy Camping have been completely renovated due to the privileged role of

the designer; the inn was reconditioned according to the original plans, and although the structural lightness of the building was lost in the process of modernization, its architectural character has been preserved.

Following the change of regime, due to foreign opportunities and changes in the social system, another turn took place in tourism, as a result of which the campsites operated with fewer visitors every year. This can be explained on the one hand by the strengthening of the role of private property, and on the other hand by the utilization of areas for other functions. The privatization of national camps has been going on since the '90s, with campsites changing ownership at a rapid pace over the past few years. The appreciation of the areas around Lake Balaton is most visible. Coastal campsites are being demolished, multi-storey houses are being built on site, often disregarding building regulations. Campings were able to cater thousands of visitors during the decades of socialism, in contrast to today's investments that, operating as condominiums serve far fewer people.



Figure 9. Everyday life in the Balatonakali camping around the 60's. (Source: Lechner Tudásközpont/VÁTI).

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# Reimagining Housing Cooperatives in Poland: Transformation Strategies for the Future.

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## ABSTRACT

*Housing cooperatives have a long history and until this day they are recognised as an important partner in implementation of sustainable housing policies. Most studies in the field have only focused on the context of Western European cities. This research set out to examine how the cooperative agenda is regarded in the Central and Eastern Europe. It analyses the heritage of the state socialism in countries such as Poland, Czechoslovakia, Hungary and the historical role of housing cooperatives as the main pillars of housing provision. The principal objective was to investigate the impact of this heritage on the present-day functioning of the housing cooperatives. The main focus is on the economic transformation and its consequences on the cooperative housing. The research analysis in detail the context of Poland, where 16% of the housing stock is still owned by cooperatives. This number is diminishing as the apartments are gradually transformed into private ownership and there are only 2,700 new cooperative units built every year. The study implies that the legal conditions pushed cooperatives into a deadlock and limited their investment possibilities. It presents the existing potential for cooperatives to take part in the provision of affordable housing. The findings presented in this thesis prove that the cooperative heritage could be transformed into a truly democratic model. Therefore, instead of completely erasing it, the post-socialist legacy, in terms of the physical resources as well as their organizational structure, needs to be revised and restructured in order to revive the cooperative movement.*

## KEYWORDS

*housing, cooperative, Poland, post-socialist transition,*



*Figure 1. Stegny housing estate in Warsaw, managed by Inter-Enterprise Housing Cooperative Enegetyka. CC Kuba Rodziewicz*

## **1. Connecting history and the present-day crisis**

The discussion about the housing problem in Poland is centered around two main topics. One is the production of new houses, which in the cities is done almost exclusively by developers. Only a marginal percentage of newly built apartments is delivered by the non-market sector (in Poland 3.1% by municipalities, housing associations and cooperatives combined). There are no alternatives to fulfilling the housing needs other than the market, which is extremely problematic. Fortunately, this issue gains quite a lot of attention from the researchers (Twardoch, 2019.)

The other discussed topic is the privatization processes of the housing stock which happened after the economic transformation. The appreciation of the immense post-war housing progress finally spreads not only amongst the researchers, but also the general public, as the prefabricated housing estates become more valued as good living environments (Leśniak-Rychlak, 2018, pp. 119-160). This shift is accompanied by the evaluation of the privatization processes that happened after the introduction of the market economy (Broulíková & Montag, 2020). Few researchers, however, manage to put the unique post-socialist inheritance against the commodification of the housing sector. This is partly because the privatization processes are irreversible and have already gone far. However, certain remains of the old system, such as institutions, legislation or ownership structure, could be used for public benefit in a fight against the housing crisis.

Amongst those remains, there are housing cooperatives with their history and still existing resources. There are researchers who see their potential. Lidia Coudroy

de Lille (2015) argues that Polish cooperatives found themselves in a deadlock, however

they still manage land resources, and thus they could possibly play an important role in shaping socially sustainable urban environments. In that sense, they are in a much better position than the neighbouring Slovakian cooperatives, which have been almost completely privatized. (Meyfroidt & Coudroy de Lille, 2018)

There are also local researchers who advocate for more transparency in the existing system in terms of legislation and organization of those institutions (Skotarczak, 2015). There are others who work to change the image of existing cooperatives - they promote greater involvement of the members in the management of the organizations, through strengthening of the civic communities (Peisert, 2009).

## 2. Ideas of cooperation

Before proceeding further with the subject, it is important to summon the foundations of the cooperative movement. Due to the specific background of the post socialist cooperatives, some of their aspects are very far-off from their core ideas. To establish their role as socially oriented, sustainable entities their much needed transformations must be based on a resilient framework.

Cooperatives were born in the mid-18th century in England. First attempts were often failed – ideas, which were not backed by a good organizational structure, were not enough to guarantee the financial sustainability of the projects. The big breakthrough occurred with the foundation of the Rochdale Society of Equitable Pioneers. The group formulated a set of principles they considered essential for the good functioning of a cooperative. To date, they form the foundation of the cooperative movement and are as follows (Hehl et al., 2020):

1. Voluntary and open membership
2. Democratic member control
3. Member economic participation
4. Autonomy and independence
5. Education, training and information
6. Cooperation among cooperatives
7. Concern for the community

In recent years, cooperatives have been pointed out as a sustainable alternative that could counterbalance the effects of neoliberal capitalism. By some cities they are considered partners in realising socially just developments. Most prominent example is the city of Zurich where cooperatives own 38% of the housing stock. Three quarters out of those organizations are small and manage around ninety units each, the bigger ones can grow up to a thousand units (Bliss, 2019). A different model is proposed in Germany where cooperatives are usually much bigger, and manage from a thousand up to five thousand units. All together there are two thousand cooperatives in Germany owning 2.2 million units, which adds up to around 5% of the total stock. (Co-operative Housing International n.d.)

### 3. Ideas of cooperation

#### 3.1. Post-soviet twist on the cooperative housing

However, not many citizens of the post-socialist countries would associate the ideas of the cooperative movement with the cooperative housing production during the socialist regime. Putting aside the actual situation (meaning how existing cooperatives really are), what we formally call “the cooperative housing” is still noticeable, at least in terms of numbers –3.5% of the stock in Slovakia is still cooperative-owned (data from 2017), 9.4% in Czech Republic (data from 2015), while Poland is a clear leader with 13,9% of all housing being cooperative (data from 2018). (See Figure 2.) The two countries, Poland and Czechoslovakia, were the most invested in cooperative housing during state socialism. In Hungary and Bulgaria cooperatives played a big role in housing production, but they were not considered tenure forms, because they existed only during the construction period until the right of use were issued (and then split into individual ownerships).

The numbers are even higher in cities. According to the most recent data from 2018, almost one fourth of the houses (23.7% of the total stock) in Warsaw is in the cooperative ownership (see Figure 3.) While this may sound appealing, as mentioned above, in terms of its legal status, this stock is unique not only in comparison with the Western European cooperatives, but even the Czechoslovakian system.

The “cooperativeness” of this type of housing is doubtful, up to a point where talking about cooperative housing, activists and researchers prefer to use the term derived from English (kooperatywa), rather than the original Polish spółdzielnia. The recently popularized idea of building cooperatives (also called baugruppen, or co

housing groups) will be regulated by a separate legislation unrelated to the cooperative law. These practices show that the system seems problematic and extremely complex and not many want to make an attempt to unravel its intricacies.

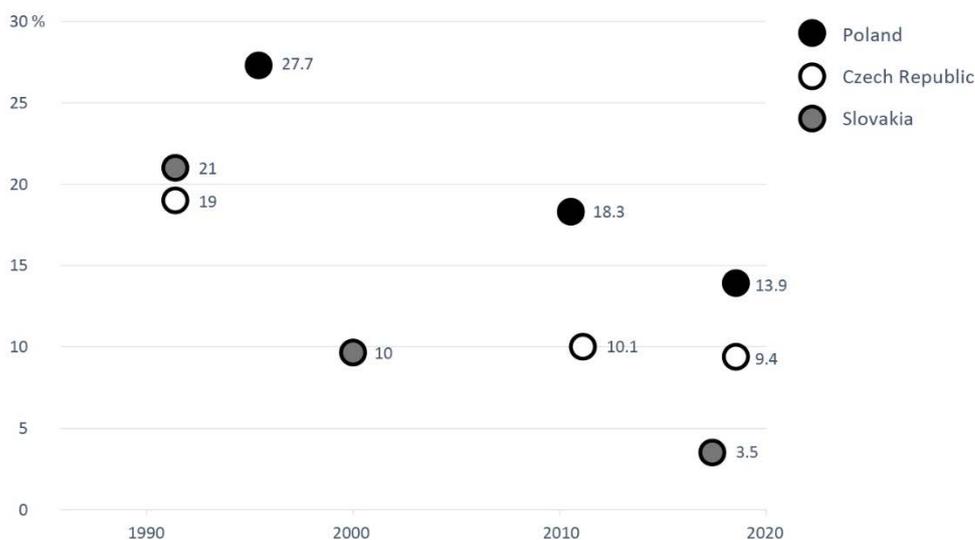


Figure. 2. Trends of change in the cooperative tenure - per cent of the cooperative ownership in the total housing stock

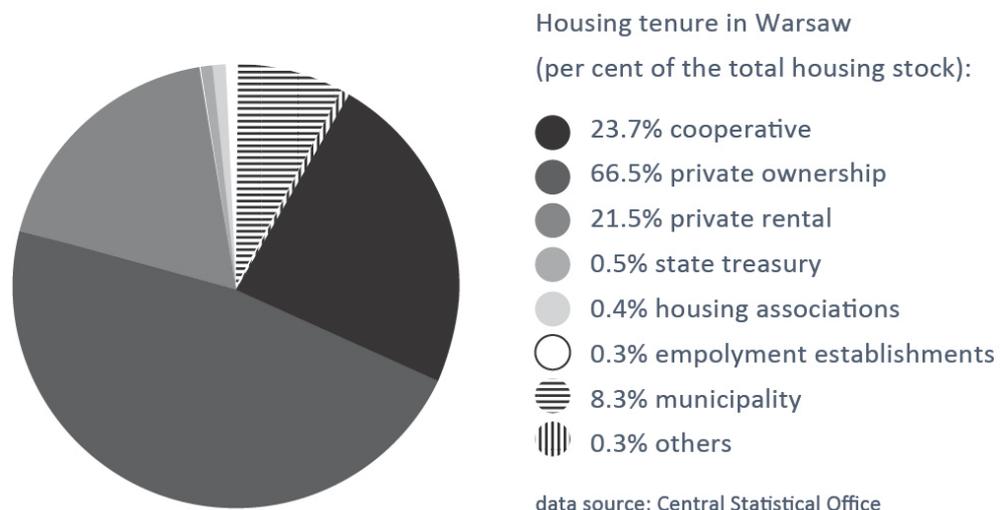


Figure. 3. Housing stock by tenure in Warsaw, data from 2018.

Polish cooperative housing could be either treated as a noble legacy left by the previous system, or an inherited curse entangled in corruption and cases of mismanagement. In either case, the issue exists and is home to millions of people. It is therefore time to decide whether to fix it or to eradicate it.

### 3.2. The road to glory (and back)

The first Polish housing cooperatives were established before the First World War as part of a broader cooperative movement. In the interwar period the Warsaw Housing Cooperative (Warszawska Spółdzielnia Mieszkaniowa) was established, which was a progressive organization that worked with the best architects of the time and completed few but impressive housing estates. The cooperative model was never dominant in the pre-war cities, where the housing crisis reached an extreme point.

Similarly, in the region of current Czech Republic and Slovakia, cooperatives appeared already under the Austro-Hungarian rule, and flourished after the First World War. The government strongly supported them through a loan provision scheme and favourable legislation.

After the war, in communist Poland, public house production was supposed to be controlled by centralized entities. In the late 1950s, the government turned to cooperatives to entrust them with the mission of housing provision. This strategy was shared by some of the neighbouring countries - Czechoslovakia and Hungary. The cooperatives were centralized and merged into large administrative entities. Each of these national schemes was unique. The most typical system was implemented in Czechoslovakia, and was based on tenancies where the financing came from the members' share, state subsidies, and low-interest loans, in approximately the same amounts. In Hungary the apartments were left in members' ownership while the cooperative ownership covered mainly the common spaces and the land.



In Poland the idea of housing cooperatives was even ensured in the 1952 constitution.

*Out of concern for the good of the family, The People's Republic of Poland aims to improve the housing situation, develops and supports different housing forms with the participation of citizens, especially cooperative housing, and takes care of reasonable management of housing resources. (The Constitution of the Polish People's Republic, 1952) [author's translation]*

Three types of cooperatives were established – tenant (with an inalienable right to the apartment), building (with a limited property right, alienable, with a right to inheritance), and cooperative associations of single-family housing constructions (with full private ownership of the individual houses granted after the completion of the construction).

The legislation was followed by a strong state support for housing through subsidies and low-interest loans. In Poland the members' share were limited to 10% (for tenant cooperatives) or 20% (for building cooperatives). As a result, the housing spending were estimated to constitute under 5% of the household income.

The centralized administration, combined with the full control over the financing, resulted in an opaque choice of the beneficiaries of the scheme. Despite its efficiency (in 1978, the record year, 284 thousand units were delivered), the waiting lists grew longer and longer. Throughout the whole duration of the system, the number of members awaiting the apartments was always larger than the number of members that managed to get one. According to the statistics from 1984, one third of the candidates were on the waiting list for longer than ten years.

The financial unsustainability of those schemes contributed to a general economic crisis of the 1980s, when the public funds for housing construction were substantially limited. Consequently, there was a sharp decline of cooperative housing construction (or construction in general regardless of the investor). In 1992, the last year before the decline, cooperatives were building 80 thousand housing units yearly; today, they build only 3 thousand.

The economic I shift was cemented in the current constitution of 1997, which states:

*Public authorities conduct policies, which favour the fulfilling of the citizens housing needs, in particular, they address homelessness, support the development of social housing and support citizens' efforts to gain the ownership of the apartments. (The Constitution of the Republic of Poland, 1997) [author's translation]*

### **3.3. The unique Polish feature**

The distinctive Polish system is a definite reason behind the slower transformation of the cooperative stock into private ownership. The right to a cooperative ownership, introduced already in 1957, enabled the commodification of this type of apartments. In 1991, it was allowed to cover them with their own land register and secure with a mortgage. In 2000 the full privatization of the cooperative units became possible, which included cooperative tenancies. Nevertheless, the pressure was relatively low for transformations of the units with the right to a cooperative ownership since they operated under similar rules as the full ownership. The buyout still reduced the cooperative stock from 3 million cooperative apartments to 2,03 million today.

Since the transformation, the policies have openly supported private developers, however the cooperatives are not perceived as “victims” of the current system. Quite the opposite – they are viewed as a historical remnant, which has comfortably placed itself in the new reality. They are seen as opaque institutions, managed by the inflexible, unchangeable boards with little diversity among their members (especially in relation to age).

#### **4. Ideas of cooperation**

The specificity of the Polish context makes it difficult to compare it with other post-socialist countries, or even to use it as a point of reference. However, the aim of this article is to find a way to reevaluate an inherited post-socialist institution characterized both by flaws and virtues of the previous system. The founding rules of the cooperative movement prove to be a useful tool in this process. They help to bring back the social agenda and reshape the organization to ensure its sustainability. In a described case, they can be a good benchmark and a guarantor of well balanced, durable transformation.

##### **4.1. Voluntary and open membership**

An obstacle in the transformation process is the issue of involuntariness of current cooperative members. Choosing cooperative housing was not a conscious decision but the only alternative. Therefore, the mindset of the current inhabitants is not set on the cooperation and self-organization. The engagement and additional time required for participation will never be fully shared by existing members. At the same time, there are no new members, simply because cooperatives are not growing in terms of stock. At the moment, in cities there are only 2,7 thousand units being built every year, which makes up only 2,2% of all the constructed apartments.

##### **4.2. Democratic member control**

The common perception of cooperatives proves to be mostly true. On the one hand, the organizations are managed by entrenched chairmen and supervisory boards; on the other hand, the members are not interested in the cooperatives' activities and they don't participate in the management.

The study of Stettin's cooperatives shows that the members are not satisfied with the management of the boards (22% evaluated their work badly, 40% moderately), but they never (39% of respondents) or occasionally (42%) participate in the meetings. Same study also show that smaller cooperatives are characterized by a higher engagement of their members. (Skotarczak, 2015)

There are plans to reform the management structure, such as introduction of terms of office for the management boards, which at the moment can only be revoked. The chairmen are appointed by the supervising board, while they should be elected in a democratic voting process. The reintroduction of the social agenda should start at the management level - the supervising boards should not be remunerated and treat their work as social activity.

##### **4.3. Member economic participation**

The common notion is that the cooperative management fees are higher than in the condominiums (as they need to cover salaries of all the organizational



*Figure. 4. Stegny Estate in Warsaw, constructed in the 1970s, now forms part of MSM "Energetyka". Almost half of its area is green space. The one millionth cooperative apartment in the Polish People's Republic was constructed there, it was also the 50 t*



*Figure. 5. One of the rare examples of the new residential buildings realised for members' own account by Inter-Enterprise Housing Cooperative Enegetyka in Warsaw. CC Kuba Rodziewicz*

structure and employees). The fees differ between organizations and depend on many aspects (the state of the buildings, renovation requirements, etc.). However, the only reason why many cooperatives manage to keep their stock from the full privatization was by keeping the management fees lower for the members. They often generate additional income through rental of other real estate (as commercial and retail spaces) or through property development activity.

The cooperatives are a great organizational structure for mixed, compact living environments and for exactly the type of spaces they occupy – housing complexes with vast common spaces, greenery which needs maintenance, and commercial spots which generate additional income. The property development activity by cooperatives is questionable, since it consists of privatization of cooperative resources. The motivation for cooperatives for smart densification through tenant-based projects is much needed (and slowly introduced by the central government through access to public funds).

#### **4.4. Autonomy and independence**

The autonomy and independence of cooperatives were seriously damaged under the previous system. It is also connected with efficient management, which directly depends on the size of the organization. In Switzerland the cooperatives are created around individual buildings, the biggest German cooperatives manage a maximum of 5 thousand units. In Poland a “medium” organization consists of 2 to 5 thousand members. Warsaw Housing Cooperative has 30 thousand members!

The structure of the estates doesn't favour management split into fragmented institutions. Unfortunately, big scale governance results in the lack of responsibility and lack of feeling of ownership of the shared spaces. There is a need for a system based on an umbrella structure with smaller organizations, which cooperate between themselves. Currently, the Polish cooperative legislation is extremely complicated and practically does not allow for a division of one entity into smaller ones.

#### 4.5. Education, training, and information

Cooperative democracy is difficult. For it to work the transparency and simplification of the current system is needed. Presently, new legal entities are being introduced to the system, namely Towarzystwa Budownictwa Społecznego (Housing Associations), which are now being rebranded as Społeczne Inicjatywy Mieszkaniowe

(Social Housing Initiatives), and the above-mentioned kooperatywy (building cooperatives, baugruppen). This deepens the gap between existing cooperatives and the new, improved system. Starting anew might be faster, but it also means that the existing resources – land, infrastructure, organization structure, people – get lost in the process.

The other path, much more complicated, combines solving the affordability crisis with the much-needed renewal of the prefabricated housing stock. This is an agenda that requires a union of the cooperatives, activists, and municipalities.

#### 4.6. Cooperation among cooperatives

Jacek Frydyszak, the chairman of the SBM Dom cooperative, denounces cooperatives:

*“As years go by [...] the developers grew stronger, organized themselves, created their own lobbying group, what did we do to stay on the market? If we won’t organize, if we won’t have an idea of who we want to be, no one will do that for us. We only react when there is new legislation, we adjust, but we don’t try to create it.” (Augustowicz, 2019) [author’s translation]*

“The cooperative lobby” is successful in some cases, for example when blocking legislation aiming to restructure the management system of the cooperatives. The new cooperative lobby should include existing institutions, but also future members, housing activists, and young people most in need of affordable housing solutions.

#### 4.7. Concern for the community

Many housing cooperatives still fulfil the cultural and social functions for their inhabitants – they run clubhouses and community centres, and cooperate with non profit organizations. They also invest in common spaces, such as parks and playgrounds.

They create communities of inhabitants; they also have great financial tools to foster a sense of community and belonging. The debt of individual members can be settled through downsizing of the housing unit. This scheme could be used in the future in the case of elderly inhabitants occupying apartments that are too big and too expensive for their needs and capabilities.

### 5. Wastefulness of the resources

In recent years, the topic of urban renewal of prefabricated housing estates has been growing in importance. This is chiefly due to the ageing of the substance, but today’s discussion enters another level. The projects of the transformations of existing housing blocks are appreciated, as they are completely changing the quality of the apartments and adjusting them to current needs and standards.

One of such projects, the transformation of a housing block in Bijlmermeer district in Amsterdam, was awarded in 2017 with the European Union Prize for Contemporary Architecture. It was developed by the Consortium De FLAT and envisaged the privatization of social housing units, which were upgraded, redesigned, and sold on the market. This process only expands capitalist practices onto new spaces and shows the common lack of understanding of what are the true resources we want to preserve or renew. Just as tearing down the prefabricated, durable blocks, tearing down the organizational structure behind the facades is pure wastefulness.

The main strength of the cooperatives is based on the wholistic approach to the living environment. In the case of post-soviet housing estates, it includes not only the social program (such as schools or cultural facilities) or green open spaces, but also the management system of the estates. As much as their legal structure of the cooperatives requires substantial changes, the core idea is still there – we shouldn't let that go to waste.

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## Shrinking Cities on the Romanian Side of the Danube River

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### ABSTRACT

*The phenomenon of shrinking cities is present in different parts of Romania, both in mountainous areas and in hilly or lowland areas. Small towns with mono-industrial functions are among the most vulnerable to this phenomenon. The Danube port cities are in the same situation. During the communist period, these cities were known for their factories. After 1989, the new economic reality highlighted the industrial restructuring process, and these cities faced severe financial problems. The economic problems of these cities have also led to a steep decline in the number of inhabitants by lowering the birth rate and increasing the migration rate. This study investigates temporal changes in the economic, cultural, demographic, and physical aspects of three Danube port cities: Turnu Măgurele, Calafat, and Oltenița.*

### KEYWORDS

*fall of industry, population decline, contraction*



*Figure 1. Old industrial building in Ottenița (Source: Andreea Popa)*

## **1. Introduction**

The term shrinking cities has been brought to the public's attention since the 1980s through German and North American literature (Păun Constantinescu, 2019). Subsequently, the term became more and more well-known after establishing the Shrinking Cities International Research Network in California, USA.

Shrinking cities are cities with a sharp decrease in the number of inhabitants because of various causes, the most common being deindustrialization and migration (Scheet, 2011).

Initially, the problem of declining cities was intensively studied by specialists in Germany (Wolff et al. 2013). They highlighted the economic and demographic issues facing the cities of the former German Democratic Republic because of the change in political regime and reunification with the Federal Republic of Germany.

The shrinking city can be considered a new form of city, characterized over time by a specific economic and social (Păun Constantinescu, 2019). From a demographic point of view, the existence of several city trajectories is highlighted, depending on the time in which there are decreases (Wolff and Wiechmann, 2017). Thus, the authors differentiate continuous decrease, periodic decrease, and temporary decrease.

The decline of cities highlights not only economic problems but also social and cultural difficulties. One of the essential characteristics of declining cities is a weak public culture, with few reduced public activities and a few participants (Adhya, 2017).

The problem of shrinking cities is complex and requires an inter and trans-disciplinary approach (European Cooperation in the field of Scientific and Technical Research, 2008). Therefore, cooperation between specialists in urban planning, architecture, urbanism, engineering, research, and more is necessary. This shows the complexity of declining cities and the difficulties in finding the most appropriate solutions.

In Eastern Europe, the situation is much worse, given that 3 out of 4 cities are experiencing a sharp population decline (Haase et al. 2016). After solid growth in the 1960s and 1970s, Eastern European cities experienced sharp declines in economic development (Turok and Mykhnenko, 2007). Many Danube port cities faced similar problems in many situations. However, some cities have stopped the economic and social decline through various instruments: urban tourism, reindustrialization, urban regeneration of the historic center, adaptive reuse, and new public transport facilities (Campos-Sánchez et al. 2019).

One of the best examples of urban regeneration in the Danube region is the Croatian town of Vukovar. In the 1990s, the city suffered significant damage during the Yugoslav war, so the authorities established a reconstruction plan that emphasized the city's specifics, old streets, Baroque-style squares. In addition, the authorities took loans, consulted the investors, and supported entrepreneurial projects. In 1998, a law established that port infrastructure is state-owned, and the port superstructure is private. Croatia's accession to the European Union in 2013 allowed the port to get funding to develop further and expand the port.

The Romanian Danube port cities are in a deterioration process, to which several factors have contributed, which will be analyzed in this study. Here, population loss had many effects: segregation, population aging, lack of investment. In addition, the transition from a planned economy to a market economy has led to the closure or diminution of the activity of many factories.

## 2. Methodology

This research investigates temporal changes in the economic, cultural, demographic, and physical aspects of three Danube port cities: Turnu Măgurele, Calafat, and Oltenița.

To identify the changes encountered by each of the three cities, I analyzed the National Institute of Statistics data. The last three censuses in Romania (in 1992, 2002, 2011) outlined a clear picture of the demographic trends of these cities. Given that the most recent census took place ten years ago, I also used the data estimated by the National Institute of Statistics for each city. Unfortunately, the COVID-19 pandemic caused the postponement of the census that was scheduled for 2021. However, several statistical data can highlight changes in the population structure of the studied cities.

Besides statistical data, I studied several official documents (e.g., development strategies), which discuss the weaknesses of cities and several suggestions for improving the economic situation.

## 3. Results and discussions

The analyzed cities experienced significant development during the communist period because of the construction of many factories. Forced industrialization has led

to the emergence of new neighborhoods and the development of existing ones. For the communist regime, the industrial city was an essential type of urban settlement (Romanian Academy, 2016).

The decline phenomenon had several factors:

- previous existing problems of industrial productivity
- losing the aftermarket
- the economic changes that characterized the transition to a market economy

The contraction manifests in diverse aspects of life: demographics (decrease in population, demographic aging), economic (lack of opportunities for jobs), sociocultural (closure of cinemas, libraries, museums), and physical (abandoned buildings or in an advanced state of degradation).

In terms of demographics, all three cities analyzed show growth between 1966 and 1992 (See Figure 2). Because of the construction of many factories and industrial enterprises, people were brought from neighboring villages and other areas to work in the industry. The pro-natalist policy of the Romanian state, which banned abortions and contraceptive methods, also played an essential role in increasing the number of inhabitants in these cities. Changing the political regime meant eliminating pro-natalist politics and allowing people to move to any area they wanted.

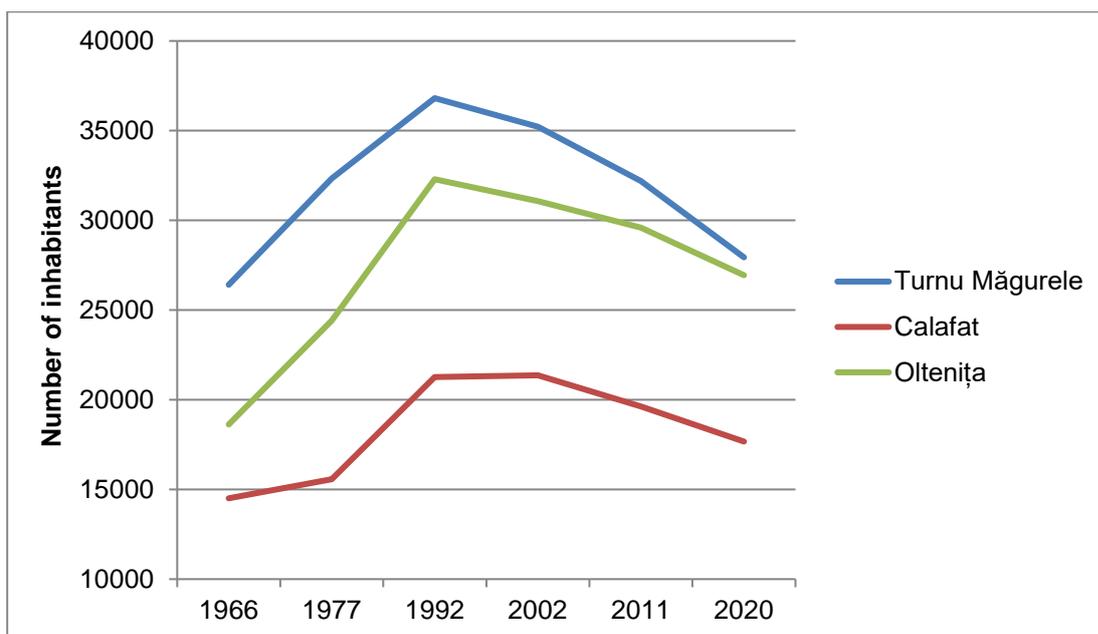


Figure 2. Number of inhabitants in Turnu Măgurele, Calafat and Oltenița between 1966-2020 (Source: NIS, NIRD URBAN-INCERC)

The economic crisis of 2008 exacerbated previously existing problems. Thus, as for the number of employees, the situation has worsened over the years (See Figure 3). After 1992, the closure of most of the factories led to an increasing number of people looking for jobs in other cities of the country. Furthermore, Romania's accession to the European Union has led to a declining trend in employees. The membership allowed Romanians to work in Western European countries, especially Italy and Spain.

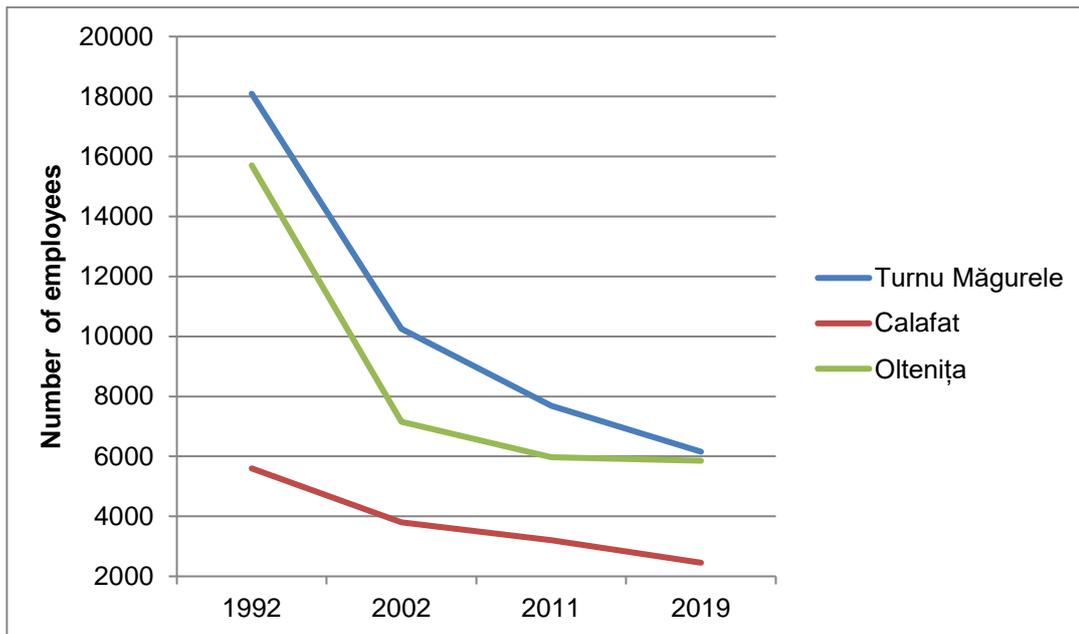


Figure 3. Number of employees in Turnu Măgurele, Calafat and Oltenița between 1992-2019 (Source: NIS)

As for culture, there is a decline, which is closely related to these cities' increasingly difficult economic situation. The decreasing number of inhabitants also decreased the number of active readers in libraries (See Figure 4). The most frequently borrowed books are the ones that are part of the school curriculum.

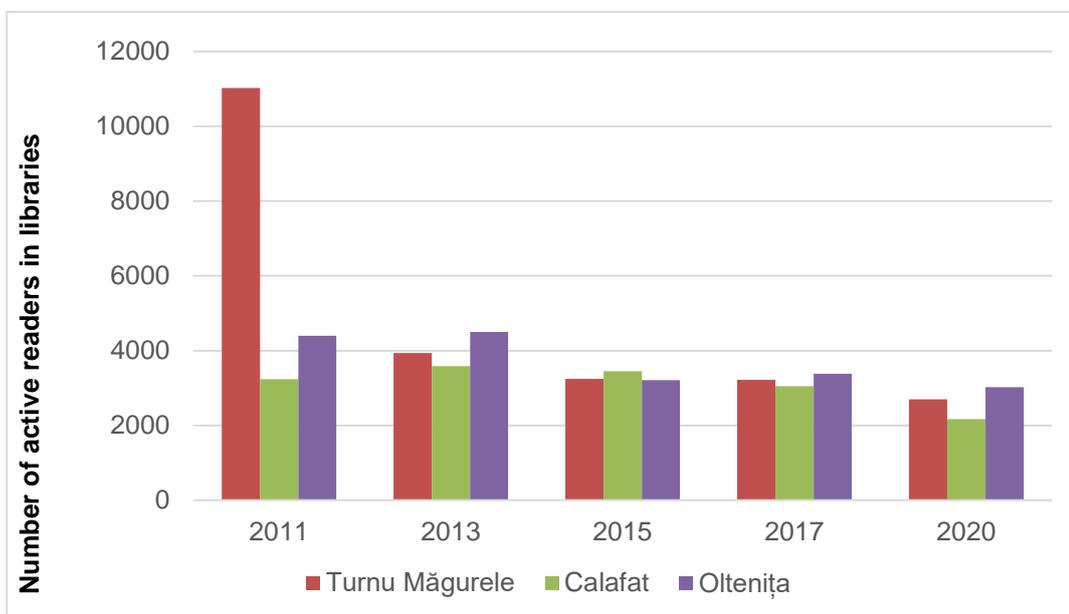


Figure 4. Number of active readers in libraries in Turnu Măgurele, Calafat and Oltenița between 2011-2020 (Source: NIS)

### 3.1. Turnu Măgurele

An edict issued by the ruler of Wallachia, Alexandru Ghica, documented the city in 1836 (NIRD URBAN-INCERC, 2012). Following the administrative reform of 1968, Turnu Măgurele acquired the rank of a municipality.

One of the most significant moments in the city's history was establishing the Chemical Fertilizer Plant in 1962. Given the region's agricultural potential, the authorities built a chemical plant to be part of a network of ten such units established all over the country. However, the development of the plant led to forced urbanization. The agglomeration was rapidly but artificially shaped as the plant grew and developed chemical fertilizers (The World Bank, 2013).

The chemical fertilizer industry is a polluting one, so the state decided, in 1978, to build the Pyrite Ash Recovery Plant. It extracted the pyrite ash into iron ore pellets, which reached the country's steel mills.

#### *Demographic shrinkage*

Because of the expansion of the city's industry, the population increased continuously between 1966 and 1992. Gradually, many people moved to the city. Turnu Măgurele recorded the highest number of inhabitants in the 1992 census. It was the first one to be conducted after the fall of the communist regime. The following censuses showed the same trend, of a continuous decrease in the number of inhabitants.

#### *Economic shrinkage*

After 1992, the activity of the Chemical Plant decreased, and many employees were fired. Also, the Pyrite Ash Recovery Plant has closed. In addition, a large area of land is currently abandoned, and most of the buildings have been decommissioned (See Figure 5).



Figure 5. The Pyrite Ash Recovery Plant  
(Source: <https://www.digi24.ro/special/campanii-digi24/romania-furata/romania-furata-tranzactii-pagubose-la-turnu-magurele-431210>)

The number of employees has decreased by 66% between 1992 and 2020. Given that most people who have left the city are part of the young population, the city faces population aging. Furthermore, the birth rate is low. Combined with a high mortality rate, this contributes to a process of continuous population decline.

#### *Sociocultural shrinkage*

The social and cultural life of the inhabitants suffered because of the difficult economic situation. The city had two cinemas (Cinema Flacăra and Cinema Turris). Currently, neither works. In the past, these cinemas played an essential role in the community's life, especially for high school students—these were the places where graduation balls were organized.

As for the museums, there are no more museums in the city. The building that housed the Art Museum has been returned to its former owner. Also, the Municipal Library closed a few years ago, the building being in an advanced state of degradation.

#### *Physical shrinkage*

Besides the former art museum building, many other buildings are in an advanced state of disrepair. Among them is the House of Culture, a building in the city center. Many shows and cultural events took place here, but now the building is in an advanced state of degradation and is no longer used.

Regarding the existing buildings in the port, only one more is used, and it has a few machinery and equipment requiring modernization works. Moreover, there is no water and sewerage network in the port; the platforms and the road inside the port are not rehabilitated. All this justifies the lack of interest of the ships to berth.

### **3.2. Calafat**

Regarding the origin of Calafat, there are two hypotheses: one of Genoese origin and another of Byzantine origin. Over time, historians have supported both hypotheses, but there is no consensus among historians so far.

Calafat became a city in 1855 (ACZ Consulting, 2013). After this moment, it followed a period in which the city developed continuously. The city was part of the country's industrialization policy, supported by the communist regime. In this sense, the authorities built many industrial units in the city: Biosynthesis Factory, Starch and Glucose Factory, Textile Factory, Sugar Factory, Cannery, Milk Factory.

After the fall of the communist regime, the factories continued to operate for several years. However, the change in the political regime caused problems in supplying these factories with raw materials. As a result, the factories stopped operating, and gradually all employees were fired.

Currently, most of the population works in agriculture and forestry. However, despite the high agricultural potential, the lack of investment has led to subsistence farming with low productivity. Furthermore, there is no association between landowners, leading to a division of land irrigation costs and the purchase of high-performance equipment. In addition, the desertification process affects the area, and only certain species of plants can be grown.

#### *Demographic shrinkage*

Regarding the number of inhabitants, there is a period of continuous growth from 1966 to 2002. During this time, the population increased by 47.2%. However,

since 2002, in the closure context of most factories, the number of inhabitants has declined. In the absence of jobs, many people left the city. The city's economic decline and lack of investment mean that the city will continue to face a population decline in the long run.

### *Economic shrinkage*

The statistics on the number of employees in the city also reflect the decrease in inhabitants. Between 1992 and 2019, the number of employees decreased by 56.1%. Thus, young people left the city in the absence of job opportunities while former factory employees retired. The inauguration, in 2013, of the Calafat-Vidin Bridge did not bring significant changes to the city's economy. Between Calafat and Vidin, there is no bus line to connect them. In addition, the railway line has not modernized either north or south of the Danube. Until the connections with the national road and railway networks in Romania and Bulgaria are improved, the bridge will not significantly impact the area.

### *Sociocultural shrinkage*

Among the few cultural events in the city are hosted by the House of Culture, a building built in 1963 with two performance halls. In Calafat, there is only one museum, the Art Museum, housed in one of the city's iconic buildings, the Marincu Palace.

One of the most important problems of the city is the heating of buildings in the city during the winter. The existence of a few jobs led to the bankruptcy of the city's central heating system. Since 2010, the thermal power plant has not worked. In 2016, the thermal power plant was demolished, and an investor bought the land. Until now, the land has remained covered by rubble, not being used.

### *Physical shrinkage*

At the entrance to the city, whether we are talking about the entrance from the former eastern or western industrial platform, we can see large areas of land that are not used. Many of these lands also have disused buildings or installations of former factories (See Figure 6).

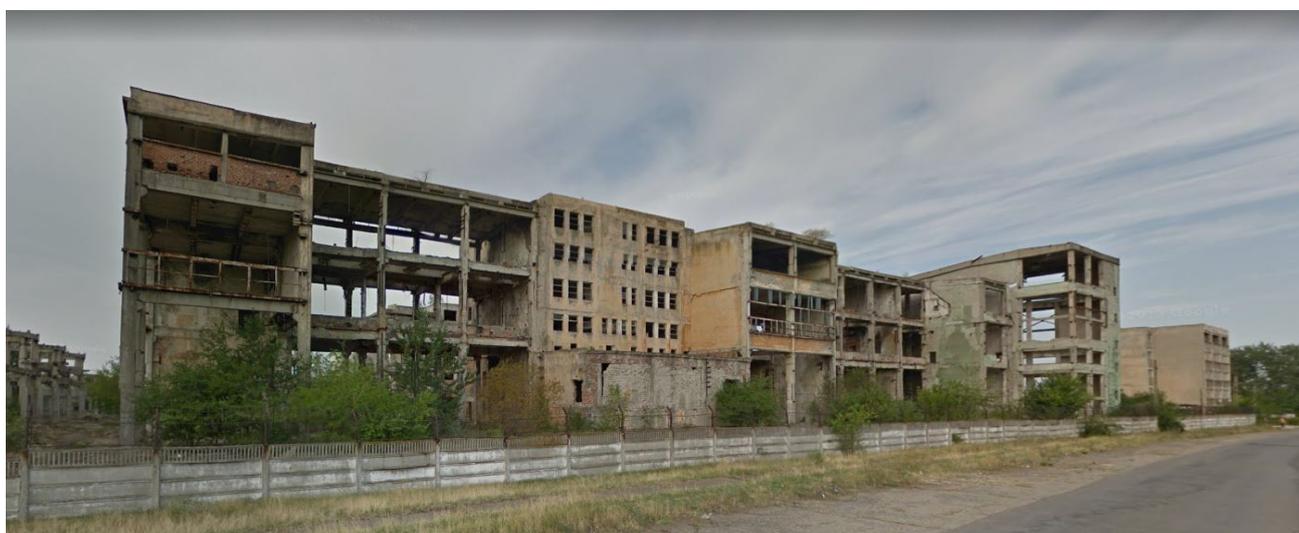


Figure 6. Former Biosin Factory (Source: Street View, Google Maps)

### 3.3. Oltenița

Oltenița is a settlement documented by an act of the ruler Neagoe Basarab in 1515 (Oltenița City Hall, 2016). Oltenița received the status of the city in 1950.

The city's port was a significant source of revenue for the local budget. In addition, the city's location at the intersection of trade routes favored the development of the port. Thus, in 1940, the Oltenița Shipyard was established, contributing to the city's development in the twentieth century. Later, other factories were built: Textile Factory, Furniture Factory, Cotton Spinning, Cast Iron, and Steel Foundry.

#### *Demographic shrinkage*

Between 1966 and 1992, there is an increase in the population by 73.4%. However, between 1992-2020 the data show a decrease in the population by 16.5%. Oltenița is only 65 km away from the capital. For this reason, many people left Oltenița, moving to Bucharest.

#### *Economic shrinkage*

Unlike the other cities analyzed previously, Oltenița is the one that had best capitalized on its location on the Danube through the activities carried out within the Shipyard. It was sold in 1999. Unfortunately, the privatization failed, so the site went bankrupt in 2006 (Romanian Academy, 2019).

The closure of the Shipyard and other factories led to a significant decrease in employees. From 15705 employees at the level of 1992, it reached 5855 employees, in 2019, a decrease of 62.7%. Today the most important economic branch of the city is agriculture. Although there is fertile land, people practice subsistence farming. Many people work seasonally in agriculture, without legal forms.

#### *Sociocultural shrinkage*

There are a few cultural institutions. In 1960, it was opened the Oltenița Shipyard Club. Shows, concerts, with the participation of well-known artists, frequently took place here. However, in many cases, the hall became too small, given the demand for tickets. After the bankruptcy of the Shipyard, the building was abandoned. There is only one museum in Oltenița, the Museum of Gumelnița Civilization. A second museum that operated in the past was closed in 2012. The city does not have its theater, but theater performances occur at the House of Culture on certain special occasions.

#### *Physical shrinkage*

The lack of investments has led to the degradation of the general appearance of the city. For example, of the 58 km of existing streets in the city, the authorities paved only 50 km streets (NIS, n.d.). In addition, there are many abandoned buildings in the city. Unfortunately, some inhabitants of the blocks of flats painted their walls in bright colors (See Figure 7), incompatible with the specifics of the area.



*Figure 7. Blocks painted in Oltenița (Source: Andreea Popa)*

The harbor also looks untidy, and the seafront is uneven. Tourists arrive here in small numbers. The lack of tourist facilities and the small number of activities means that an even smaller number of them spend the night in the city.

#### **4. Conclusions**

The three analyzed cities are experiencing a sharp decline in population after 1992. The change of political regime and the transition to a market economy profoundly affected the whole life of these cities. The authorities' disinterest in the factories' fate led to privatizations, which proved to fail. Investors rarely complied with the contracts, and the factories were sold piece by piece.

Despite the advantages offered by the location on the banks of the Danube, the cities analyzed still have a difficult economy. Often, local authorities prefer to invest in other projects, which prove to be useless for the economic situation of the three cities. A good example of a project that proved to be a failure is the tourist pontoon in Calafat. Initially, it was designed to receive tourists from outside the European Union. However, due to the high fees charged by the authorities, tourists do not arrive at the port. Although this pontoon has not been used for 13 years, the state pays monthly

for its maintenance. Another important investment, of 3 million euros, is the Municipal Stadium in Turnu Măgurele. It is a modern one, but it has no impact on the life of the city's inhabitants. In 2021, the football team was disbanded, so the stadium is no longer used.

So, while other European cities have taken advantage of their location on the banks of the Danube, the cities analyzed have not yet taken steps in this direction. Among the possible activities that could be successfully done in the analyzed cities are tourism, cruises on the Danube being sought after by tourists. These cruises are successfully practiced in other Danube countries, for example, Germany, Austria, or Hungary. However, each of the three cities has attractions that are not capitalized. These attractions include the Natura 2000 sites, the ruins of Turnu Fortress (Turnu Măgurele), historical buildings, the Art Museum (Calafat), the Museum of Gumelnița Civilization, archeological sites (Oltenita).

Another opportunity for tourism is cycling tourism. In some Danube countries, this type of tourism is more and more practiced. One of the significant advantages is the possibility to practice even during the pandemic. Romania is on the EuroVelo 6 route - the Danube cycle tourist route. The marking of the route and the installation of specific signs could attract many practitioners of cycling tourism, with benefits for local communities, by promoting the cultural heritage, local customs, traditions, and the cuisine specific to each area. Concerts and shows can also be organized, as well as fairs with local products.

For tourism to become an important economic branch in these cities, it is necessary to invest in tourism, port, railway infrastructure, rehabilitation of heritage buildings, enhancement of protected sites. Without these investments, a few tourists will arrive in these cities, and the difficult economic situation will be maintained.

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## Hungarian Amusement Parks from the Fifties to Nowadays

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### ABSTRACT

*In the fifties, a process started in Hungary to create culture parks based on the soviet model. These parks were complex, diverse facilities in the proximity of the cities where people could spend their leisure time. Various functions were integrated, and amusement parks could be part of it too. In this essay, I attempt to explore this interesting function. In Hungary, there were around ten amusement parks at this time. Most of them were built in these times, yet today they are all closed except one. Some of them are empty and ruined, others got new functions.*

*The main motto was 'having fun while learning'. The cultural-political background wanted to control both the weekdays and the free days. The creation of the amusement parks was bound due to the forced collective work of the people and to the nearby factories through the possibilities which could offer to construct experience elements.*

*The entertainment concept in these parks based on basic human experiences like fear, ramble or finding something. The parks combined fixed and kinetic objects to access these feelings. What kind of architectural characteristics had these places? What can we do with the empty places, to which we are mentally engaged?*

### KEYWORDS

*amusement\_park, culture\_park, collective\_work, recreation, entertainment*



Figure 1. Amusement Park in Dunaújváros (Sztálinváros), 1957.  
(Source: Fortepan / Kiss Lajos)

## 1. Introduction

The history of amusement parks born in the socialist era is characteristic in terms of their closing, abandonment, and repurposing. In Hungary, the former *culture parks* (called *kultúrpark*), which included amusement parks, signified a top-down entertainment program to visitors, and their creation and use can at some level be linked to the pressure by the political system at the time. This was similar in other socialist countries, as the Hungarian concept was most probably based on Soviet and neighbouring socialist countries.

With the exception of the park in Debrecen, all of Hungary's amusement parks have now disappeared. Some of them are abandoned (Pécs, Oroszlány, Várpalota), some have had partial or complete switch of functions (Dunaújváros, Budapest), some have had their area rehabilitated (Veszprém, Szeged) or have simply been rebuilt for other uses (Ózd, Győr).

At first sight, these amusement parks may be similar to the outdoor fairs that are still present in many places in Hungary, but they were fundamentally different: they had a fixed location, they had become embedded in the historical era, and their inception was also different.

In the broadly interpreted topic, the foreign literature is wide. Most research has been carried on the American amusement parks, both chronological and theoretical ways. (Wood et al., 2017; Lukas, 2008) The western European examples are well-researched and published too. In contrast, the amusement parks based on the *soviet model* are less discussed. Much of the previous research has focused on large-scale, ideological socialist urban parks. (Taylor-Foster, 2016) Sometimes amusement parks are mentioned in the public discourse, connected with a notable historical event, like

the Chernobyl disaster. (Schatternberg, 2020) But in general, about these examples, we have insufficient information.

In the first half of my paper, I am examining the ways amusement parks were integrated into the fabric of the town through culture parks, for which purpose I analyse archived documents. The creation of culture parks is linked to a political concept. As guided by the prevailing thought at the time, the days of the socialist working week were divided into a triage of *work, play and rest*. Culture parks and their amusement parks provided an organized place to spend the time dedicated to entertainment and recreation.

After providing a conceptual presentation of the parks in the stricter and broader sense, I will describe the present situation of the amusement parks and their former areas. There is a stark contrast between the ideal function and the current state, which is made even more dramatic due to the strong emotional ties the builders and the visitors of these parks had to them.

## 2. Culture parks in the socialism

Hungary's amusement parks were built into so-called culture parks. In order to dig deeper into the nature of amusement parks, we must first examine the park it belonged to. The concept of 'culture park' in Hungary can be interpreted based on a 1954 source, in which a Professor of Architecture at Budapest Technical University takes account of all the different characteristics and functions urban green areas may have. (Granasztói, 1954) The study is highly analytical and lists different indicators and ratios for the spatial planning of green areas in smaller and larger cities, often referring to the international literature at the time.

Today, it is striking in the study that it examines green areas from a fully functional perspective; the aim is not to integrate the built environment into green areas, but to discover their different purposes by using nature as a *tool*.

### 2.1. The concept of the culture parks

When analysing the function of the green areas above, culture parks are typically resorts for recreational purposes. The author describes the concept as follows:

*'Culture park. Green area serving the entire municipality, preferably within the municipality, for both recreational and aesthetic purposes. Stricter purpose: to ensure a combination of the most diverse possibilities of recreation (leisure, entertainment, culture, celebrations, etc.), as such, it is a specific green area.'* (Granasztói, 1954)

It shall meet the needs of the urban population, as they are subjected to increased negative experiences during the often tedious work processes carried out in enclosed spaces. Depending on age and 'predisposition', the recreational needs of people vary. Some age groups need simultaneous, more intense physical and mental relaxing activities. Entertainment can be enjoyed either alone or in a group, actively or passively. Green areas for relaxation also play a cultural role:

*"(...) green areas have a significant moral and cultural role by providing the urban population with an opportunity to learn, study and live more fully than a one-sided life."* (Granasztói, 1954)

This quote already refers to *the principle of recreational learning*, which was also a key idea in socialism. Rest time is further enhanced along the lines of public cultivation, as it provides an opportunity for society to be developed. This will be of



architectural importance when discussing the design of amusement parks and when interpreting the attractions.

Urban lifestyle appears here as a form of life laden with negative conditions to compensate people for, which requires the creation of green areas of different sizes, character and function in the city or its close vicinity.

Culture parks, like urban forests, children parks, pleasure gardens and parks, are primarily for recreational purposes and in their concept, comply with the two principles above. They are ideally located inside the city, but as existing urban structures often do not allow it, they must at least be easily accessible by local public transport.

As per the principles set out in the cited study, all urban municipalities need a culture park (sometimes more), the size of which Granasztói determines based on the population size. If local conditions allow it, culture parks are connected to urban forests or water banks. At this point in the study, nature and landscape are once again seen as tools that can be used *'to enhance the internal design of the culture park'*. (Granasztói, 1954)

Today, there is not much left of the elaborate concept of former culture parks, their characteristic features have become absorbed by simple urban parks.

## 2.2. Architectural features and elements of the culture park

On the basis of Granasztói's study, culture parks have the following architectural features. It is important that the area retains its *park features*. Any buildings necessary shall be organised as a system, following architectural composition principles. Several architectural tool may be used, such as the creation of centers/squares, perspectives and well-defined axes. Another aspect to consider is the separation of various uses – noisier facilities (sports grounds, amusement parks and entertainment establishments) should be on the edge of the park.

The institutions that may be or should be placed in the culture park have culture-sport-entertainment purposes and are intended for a wide range of users, including *house of culture, library, museum, outdoor stage, restaurant, cafeteria, points of sale, entertainment facilities, in some places sports venues, swimming pool, childrens' park and assembly space with associated passage for marching*. (Granasztói, 1954)

## 2.3. A Hungarian example

Compared to 'the idea', domestic implementation seems less structural and of varying complexity. It also appears that zoos, monorails and camping sites are missing from the list above, which, despite the changes induced by the regime change, have become a characteristic feature of Hungary's cultural parks. In the next section, the structure of parks are examined through a Southern Hungarian example.

The Culture Park of Mecsek Mountain was mounted on top of the morphology-defining mountain in the 1960s, at a distance easily reached from the inner city by bus. Its most important elements were the zoo, (1960), the amusement park (1961) and the pioneer railway connecting them (1962). A little later, the Mandulás Camping (1967) and the nearby TV tower (1973) with a restaurant were built. A ten-minute walking distance from the amusement park, a ski track had been already in operation. Two new tracks were created in 1958 and a ski lodge was built in 1960. In the neighbourhood, another significant building for relaxation purposes, Kikelet Szálló had been operating since the 1940's. This hotel, unlike culture parks, was not designed to meet the needs of the average urban population, but could have been an important factor in taking advantage of the area as regards tourism. (See Figure 2.)

The park is virtually integrated with and forms part of the urban forest. The park elements are at 10-20-minute walking distance and are linked by hike trails and vehicle roads. The area offered a complex, one-day or even whole weekend program to the inhabitants of the city, without having to use long-distance transport. In the park, the aforementioned triage of objectives were achieved. In addition to a wide range of entertainment possibilities, cultivation could take place in the zoo, where visitors could become familiar with nature and the world of animals. The open-air stage in the amusement park could host cultural programs, and people could do sports by taking a walk or conducting other activities in the urban forest, trying some attractions in the amusement park or going skiing nearby.

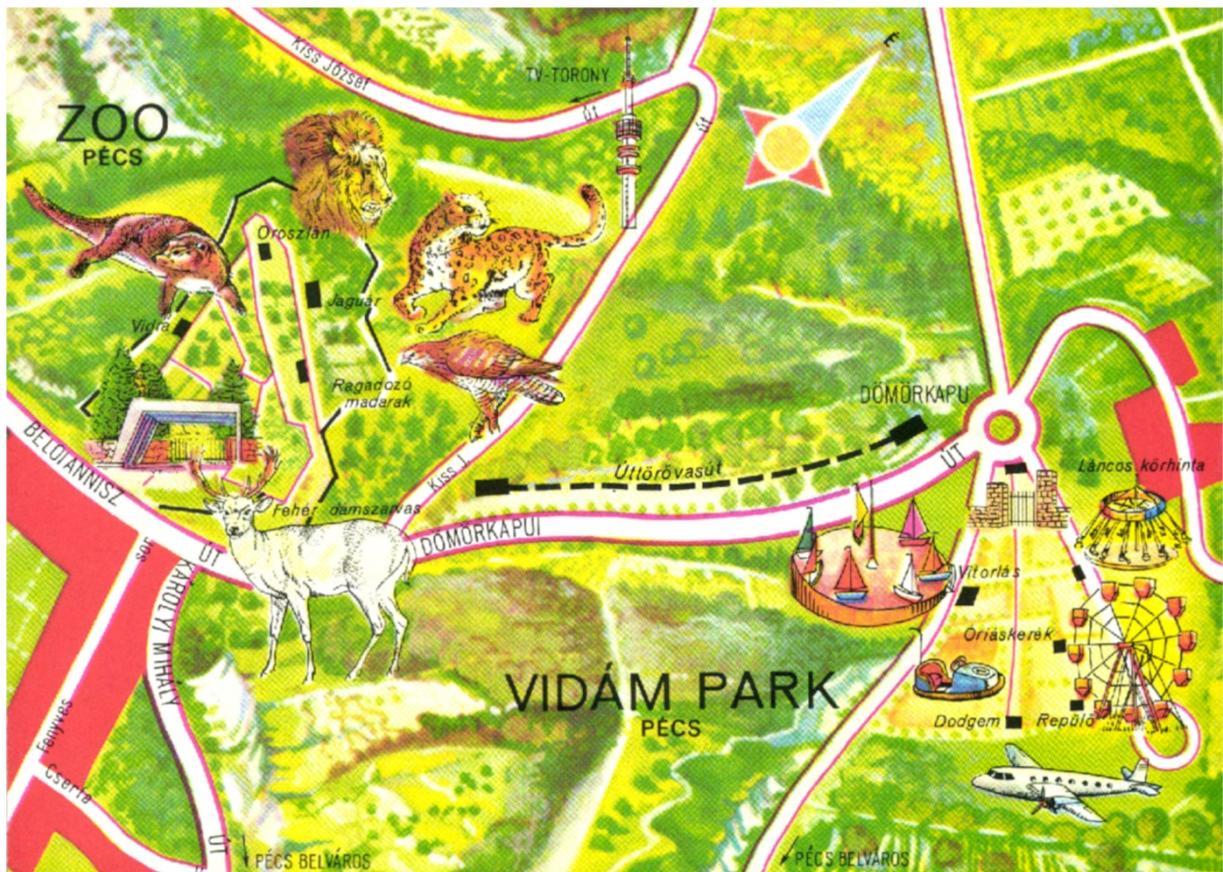


Figure 2. Postcard. The Culture Park of Mecsek Mountain (Source: egykor.hu)

In larger cities, multiple cultural parks may have been created. Prior to the construction of the Culture Park of Mecsek Mountain in the 1950s, there were plans to create another establishment in Pécs when constructing the new Western city quarter. The urban planning for the quarter, which was designed to inhabit 20,000 people, was carried out by VÁROSTERV on behalf of ÁÉTV. (Dénesi, 1959) A spatial network of administrative, educational, commercial, catering, health and cultural institutions was planned, and it (would have) involved the creation of a culture park. Compared to the park in Mecsek, different kinds of urban function were envisaged, like house of culture, cinema, music school, library, outdoor stage, sports grounds, and a swimming pool. The latter functions did not fully materialize, and the organic development of the city makes it more difficult to identify the concept of a former culture park nowadays. The leisure functions became integrated into the fabric of the city, but the park was used for other purposes, as well. As a result, the characteristics of the old design are not as distinctly noticeable as those in Mecsek Mountain Culture Park.

### 3. Amusement park in the culture park

The socialist amusement parks examined in my paper can therefore be interpreted as belonging to and forming part of the above-mentioned culture parks. The analysis of amusement parks (or their remains) demonstrated that the principles used in planning the wider environment were also applied within the park. My impression is that the amusement park is a mirror image of the culture park, it is a fusion of the characteristics specified above, targeting the younger generation.

#### 3.1. Socialist amusement parks

If one wishes to decrypt the design of amusement parks, a 1966 essay of Gergő Ormos in the *Megyei Szemle*, a county newspaper may prove an ideal starting point (Ormos, 1966). The author is structuring his paper along the concept of *past-present-future*. It presents the amusement park of Budapest as the debauched outdoor fair of olden days. The author then contrasts this cheap and oppressive atmosphere with the *contemporary amusement park*, which is equipped with modern, airy and advanced machines, offering opportunities for a '*richer form of public cultivation*'.

Besides children, young people and adults had to be given an opportunity to entertain themselves; the function attempts to link entertainment and culture. Stages, fine art exhibitions and educational shows all served cultural purposes. The intention was to also involve the youngest age group – the aim of the parks' competitions and the road traffic track was to '*teach children the rules of transport playfully, via games*'. In the author's view, tomorrow is a continuation of the present, and shows an increase in the complexity of the function (Ormos, 1966; Sámson, 2021).

#### 3.2. Collective work

Hungary's amusement parks were typically built via social work. This collective work was a distinct feature of socialism. The daily work schedule of working people, as envisaged by the political leadership was structured as set out in the popular Hungarian lyrics: '*eight hours of work, eight hours of rest, eight hours of entertainment*'. The social work of building recreational amusement parks went beyond the obligatory eight hours of work, it was completed in the time delegated for entertainment or rest. In reality, this work was more of a requirement than volunteering. In the press at the time, there are many enthusiastic articles highlighting the spirit and dedication of the plant and factory workers and commemorating the mounting of attractions donated by factories. Weekly newspapers often quantify the hours spent working on the amusement park, trying to prove the validity of the additional work required by the system, see the examples below.

According to the newspapers the workers spent in Pécs 75,000, in Debrecen half a million work hours to construct the amusement park. ("Ünnepélyesen megnyitották a vidámparkot," 1961; "Kádár János és Kállai Gyula elvtársak látogatása Debrecenben," 1960)

In Várpalota '*the park, worth HUF 56,000, cost the town council only HUF 25,000 - from a public development fund - the other amounts were created by the population via social work!*' (Szöke, 1960) In Győr, Kiskút liget the local paper declares that the '*Social work worth over HUF 3 million*'. (Cseresznyák, 1968) In Oroszlány the press encourages the workers: '*...every miner from Oroszlány shall spend fifty fillér of every hundred forints earned on the park.*' (Komornik, 1960)

After the opening ceremony in Székesfehérvár the press reports: '*mostly built via social work*' '*medals were awarded to nearly a hundred workers, technicians, firemen*

*etc. who have completed more than thirty hours of social work here'* ("Megnyílt a Béke-liget és a Vidám Park – Húszezer látogató a kettős ünnepen," 1960)

### 3.3. The structure of Hungarian amusement parks

The installation of amusement parks had to be in green areas. The time spent there was not only about using the attractions, but also about walking from element to element, and as such, the parks had a rich inner road network. Their structure is documented by the old maps and postcards that are full of useful information. The drawings are similar to a cognitive map and show an idealized reality. They highlight focus points (machines) and important routes. In his book on amusement parks, Scott Lukas anthropologist writes that finding directions becomes part of the experience in the park. (Lukas, 2008) In addition to the layout, small axonometric or perspective drawings of the attractions are displayed. These support orientation visually, but also evoke the experience a visitor can take part in. (Sámson, 2021)

The structures in the parks may be buildings and attractions, the latter being given greater prominence. Buildings and related spatial objects (fences, squares, terraces) are intended for functional purposes: they mark entry points, the boundaries of an area, serve physical needs, or house public toilets or offices. The most characteristic constructions are entrance gates, sometimes of remarkable architectural quality. In addition, it can be observed that buildings in a given park are broadly in harmony all through the area. Enchanted castles are distinct from functional buildings, because they operate with such characteristic architectural instruments as towers, bastions, arched windows and entrances. The number of buildings vary from park to park. There could be as much as ten, or only a few. (Sámson, 2021)

Installed attractions are mostly mechanical machinery, which topic Lukas also covers in his book. Machines play an important role in generating experiences, causing goosebumps. They are both functional and symbolic, ordinary and majestic. They strongly influence our senses, mostly kinetically, but their symbolical appearance is also a visual force. Machinery could have been equally important for culture parks, and even had a central role to play in the context of socialist economic approach, although their size is generally much smaller than the North American examples referred to in the cited book. The attractions usually donated by factories and plants were rather randomly themed in Hungary. They had nicknames like Little Swiveller, Tiny Winder, Mini Glider, which names, along with illustrating their size, also carried an emotional charge. (Sámson, 2021)

## 4. Present situation

Amusement parks established in Socialist era Hungary are now closed, with one exception. Their market sustainability could not be ensured after the defeat of the system which created them. The facilities were not able to respond adequately to the evolving entertainment needs. The closing of amusement parks was often accompanied by strong social protests and disbelief: why are we not able protect the places built by our parents or grandparents, the memories of our youth?

Abandoned areas continue to live on in different ways, which are affected by the older function to a certain extent. Where there has not yet been a change of function or the area has not yet been used in any way, there are dramatic scenes with ruins in abandoned locations, once full of life. In the following, the current state of the former areas is briefly presented. (See Table 1.)

**Table 1. Amusement parks in Hungary. (Source: Kinga Sámson)**

City	Built	Closed	Nowadays
Budapest	1950 (reconstructed)	2013	partly demolished, integrated to the zoo
Debrecen	1960	-	open
Dunaújváros (Sztálinváros)	1952	1993	sport function, partly deserted
Győr	(first: 1962) 1967	(destroyed: 1965) 1990	demolished, industrial area
Oroszlány	1965	1975	deserted/green area
Ózd	1952	seventies	demolished, built-up area
Pécs	1961	2011	deserted/green area
Szeged	1964	1992	demolished, green area, sport function
Székesfehérvár	1960	nineties (around 1995)	demolished, historical themepark
Várpalota	1960	1962?	deserted/green area
Veszprém	1961	1971	rehabilitated area, park

#### 4.1. An open park

Of the eleven amusement parks, only Debrecen functions presently. The Culture Park of Nagyerdő was a complex multi-component entertainment center. The zoo and amusement park have become integrated. As a member of The Global Association for the Attractions Industry (IAAPA), the park is trying to keep up with changing needs, while also keeping the 'retro' feeling with some of the old attractions. Periodically, big effort is put into its renewal.

#### 4.2. Budapest

The amusement park of Budapest does not fit into the pattern of the examples listed. It was built earlier, at the beginning of the 19th century, and it was converted to fit the principles of socialist amusement parks the 1950s. Its territory is now connected to the zoo, the park has ceased to exist in its previous form. It has kept a fraction of its elements, but they mostly evoke a turn-of-the-century feeling.

#### 4.3. Switch of function

When examining the parks that had their functions changed, two trends can be identified. In some cases, the new function is a continuation of the the old: entertainment and leisure. In other cases, however, the real estate usage concept completely differs from the previous function, thus interrupting the continuity.



*Figure 3. The 'spider' in Dunaújváros in 2021. (Source: Kinga Sámson)*

Dunaújváros (at its establishment, Stalin City) may be considered as a role model for Hungarian amusement parks. The park and the connected industrial land was shaped according to the Socialist State's utopistic vision on amusement parks. The facility meant to entertain working people served as a basis for several later parks. The area was closed in 1993, it is still partly abandoned, but some parts serves as a place for sports grounds and associations. Its iconic building, the 'spider' is now used by skateboarders. Other built elements still present are ruined remains and landscape features. (See *Figure 3.*)

Like Szeged, Dunaújváros is also used for recreational purposes. Liget, where the former amusement park was located, has been restored to its previous state and the amusement park had completely disappeared. Where the amusement park of Székesfehérvár was demolished, a Middle Ages themed playground was built.



*Figure 4. The pioneer railway station in Veszprém Valley nowadays.  
(Source: Kinga Sámson)*

In Veszprém, in the valley of Séd river, the entrance gate buildings of the culture park and the former station of the monorail have been renovated. It is now a park, in which the medieval monastery once again plays a prominent role. (See Figure 4.)

In the case of Ózd and Győr, there is no link at all to the original function, the area has been converted for office and industrial purposes.

#### **4.4. Deserted parks**

The former parks of Pécs, Várpalota and Oroszlány are now deserted. The former amusement park of Pécs is now dedicated to hikers and trips and belongs to the forest park of the Mecsek Mountain. The vast majority of buildings have been demolished, but the two entrance gate buildings bring back the memories of the park closed ten years ago. If one walks in the park clutching a former map, the former sites of attractions and vendor buildings may still be identified. The city has not been able to designate a use for the area. (See Figure 5.)

Haraszt Mountain of Oroszlány and the banks of Grábler Lake in Várpalota are also left to cope with memories created here alone.



Figure 5. The deserted gate buildings in Pécs. (Source: Kinga Sámson)

## ACKNOWLEDGEMENT

The connection to places and experiences does not express the desire to return to the socialist past, but it may help in interpreting the present (Nadkarni 2010). Not much time has passed since the construction of amusement parks in culture parks and the elementary experiences lived there, they are only a generation away. However, the physical environment that is disappearing or changing is blurring and calling them into question.

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# Resilience of Urban Forms in Context of Urban Green Infrastructure: Study Case of Ferencváros, Budapest

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## ABSTRACT

*Resilience is a critical factor in urban growth, and it also plays a particular part in the urban renewal measurements accomplished in the 9th District of Budapest. This region has been going through different design propositions, aiming to compose the yet existing urban voids and provide cohesion to the disjointed urban fabric. That adaptive process was most intensely conceived between the 1980s and the early 2000s, a period marked by the political and social disruption of the fall of the socialist regime and the gradual implementation of the capitalist structure. Through research on design, understanding the strategies adopted in that urban operation can establish an analytical framework capable of enlightening the physical, social and mental nuances of an urban renewal process. Given the expansion process of existing urban fabrics, it is relevant to investigate the role of resilient structures in composing the urban living environment in terms of form, function, and use. In that context, identifying the configuration of the green infrastructure can also stimulate a circular approach to urban development.*

## KEYWORDS

*Urban regeneration, urban typology, dense urban areas, urban development, urban voids*



Figure 1. Modern building integrated to the new Urban Green Infrastructure at Ferencváros, Budapest (by author)

## 1. Introduction

Understanding the urban development of densely occupied areas - especially in historical urban fabrics - may be a significant step towards constructing socially and ecologically sustainable urban environments. Urbanization is a relevant phenomenon in the characterization of the economic structure of a city, country, or region, which is an outcome of a large concentration of human resources. However, the consolidation of this socio-spatial model has raised issues related to large-scale resource management and sustainable planning. (Arnfield, 2003)

Despite representing only 2% of the world's territory, it is estimated that 75% of natural resources are consumed in urban agglomerations (Ribeiro and Gonçalves. 2019). The intense urbanization process experienced in the last century worldwide has increasingly evidenced the need to rethink the ecological values and the quality of life in dense urban centers.

Acknowledge the intricateness of the urban structure, and its layers can help find feasible alternatives to improve its performance. The urban structure can be recognized as a complex set of elements that stress establishing patterns that condition (or induce) the future changes in the physical and social spheres. The gradual emergence of urban spaces results from agglomeration processes, segregation, rent-seeking, political actions, class conflict, profit maximization, or planning decisions. (Shearmur. 2013).

Public space is one of the elements that better comprise cities' psychological and physical space (Berg. 2016). Therefore, the public environments present in the urban structure can be understood from two perspectives: the public sphere as a social condition and the public space as a material arena. Both are intertwined in the conformation of the cities' landscape and the urban social interactions, solidifying the experience of using the space. "Open, accessible, inclusive public space may serve as the venue of social interactions that teach the values of tolerance, engagement, and citizenship." (Hirt, S. 2014).

Post-socialist cities tend to be equipped with structures oriented to public open spaces and green infrastructure. Many of them were entirely conceived under the perspective of the public domain; others, previously established (such as Budapest), underwent adaptive processes to recreate or merge sections of the urban fabric through this conception. Under the circumstances of the socialist regime, public spaces had the structural function of articulating the land subdivision and zones of use of the urban territory. They played the role of indoctrinating and shaping the emergence of a new lifestyle. (Hirt, S. 2014).

New urban spatialities were designed to provide a setting for new types of social relationships. Concerning urban green infrastructure, some elements were typically inserted in modern developments aiming to ameliorate their socio-spatial conditions, such as large urban green spaces encircling housing estate areas, playgrounds, public sports fields, kindergarten gardens, and schoolyards, for example (Gavrilidis et al. 2017).

Since the end of the communist regime, there has been a continuous movement towards privatization and restructuring of public spaces. Also, during the process of social-political transition, urbanization patterns and trends emerged, marked by the intense decay in the density of central areas and the significant rise of urban sprawl – in the case of Budapest.

In articulation to that process, the introduction to the market-based investments disrupted the 'mono-centric model' executed in the communist cities, expanding the boundaries for commercial and office activities and allowing the resurgence of new secondary centers (Hist and Stanilov. 2014). In addition, the diversification in the land use structure has also led to the emergence of high-income suburban residential hubs, increasingly connected to the urban infrastructure, public transport, and green network.

Because of the aforementioned urban movement, the new economic model has enlarged the need for affordable dwellings with better living conditions and good accessibility to the main commercial and institutional hubs within the post-socialist cities. This scenario has compelled the redefinition of empty or underutilized urban spaces to make feasible the implementation of residential developments compliant to the emerging population's necessities.

Those reframed urban voids went through diverse initiatives, calling for the gentrification of socially degraded areas or relying on altering the former functions of the targeted urban territories and redefining the social stigmas associated with them. Gent Botterman (2018) highlighted that "capital-intensive urban redevelopment has increasingly been cured and sometimes initiated by the State."

Besides the rapid urban renewal process, it is possible to identify adequate evidence of urban resilience that makes this physical and social space resistant to the new disturbances (Ribeiro, Gonçalves. 2019). Adaptation, recovery, and transformation are some of the more remarkable pillars verified in this intervention. Thus, this paper aims to examine the process of urban growth of high-density areas of the 9th District of Budapest in light of the contribution of urban green infrastructure to the resilience of urban forms.

## 1.1 Methodology

The research follows a case study perspective and focuses on a literature review to achieve a qualitative and empirical appraisal. It is determined a forty-year time-frame, which covers critical historical milestones involving the political changes that directly impacted the urban strategies for the area, pointing to the increase in public and private green spaces and providing resilience to the neighborhood.

Standing on the intention to identify resilient patterns in the urban space over time (Sharifi and Yamagata. 2018) and obtain material for further analysis in the field of urban green infrastructure in dense post-Soviet cities, this study relies on research on evidence of specific areas: satellite imagery/map analysis and data collection.

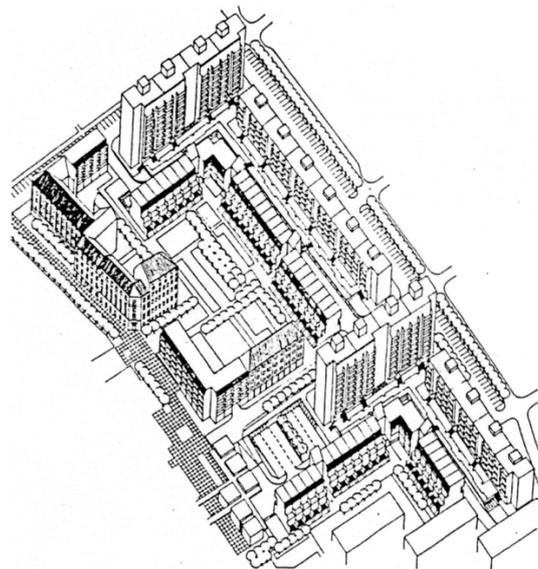
## 2. Resilience and regeneration of urban fabrics

According to Ribeiro and Gonçalves (2019), the concept of urban resilience is related to the capacity of an urban territory to adapt to possible disruptions, perpetuating urban dynamics and existing physical conditions that characterize a place and its landscape. In addition, it enables the emergence of new socio-spatial expressions. The study area analyzed at Ferencváros had its urban renewal process carried out through uncertain periods of significant political and social changes.

The local government of Ferencváros carried out a regenerative plan for the middle area of the district - a prior industrial zone - aiming to rearrange the numerous urban voids and qualify the remaining structures in the territory by identifying the elements that drive urban resilience.

Renovation activities in this district region began in the 1980s as primarily residential development (See Figure 2.). However, since the early 1990s, this region emerged as one of the major vectors of socioeconomic development in the city, becoming a successful example of the public-private partnership seeking to improve a historic urban portion of Budapest. (Locsmandi, 2001)

The first proposals for the reconstruction of the area followed the modernist guidelines determined by central institutions for the administration and development of the urban territories. During this period, the plans aimed to optimize the number of dwellings available and address the solution to implementing green infrastructure and public equipment adjacent to the buildings, covering local residential-scale needs (Locsmandi, 2001).



*Figure 2. Modern panel houses in the first plan for the reconstruction of the middle Ferencváros (LOCSMÁNDI. 2001)*

Later, with the gradual introduction to the capitalist economy, there were incisive changes in the perspective of intervention. Market-oriented urban stamps were adopted in confluence with urban and architectural design measures closer to traditional solutions. The unfolding of that decisions resulted in a proposition

typologically congruent with the characteristics of historic areas in Budapest (Locsmandi. 2001).

## 2.1 Regeneration management and tools

The municipality of the 9th district refers to the existence of four "centers of gravity." At the logistical level, those centers (See map 01.) were used as guidelines for developing the activities and as temporal markers to implement the actions. The project developers identified the locations based on the level of social vulnerability found and the maximum transformative potential. These areas were thought of as poles of irradiation of the improvements, relying less on public investments over time to achieve the same beneficial results idealized at the first stage homogeneously at all the intervention areas. Physical renewal, in this case, plays a unique role in urban regeneration. (Robert, Sykes. 2008)

The regenerative process experienced in this region is mainly based on its gradual change of function. Specifically in this case and in other successful examples of urban regeneration, this change, resulting from constantly updated political, social, and economic demands, was identified as a possibility of entrepreneurship, having, therefore, a managed transformation process (Robert, Sykes. 2008).



Map1. Gravity Centers articulated by green pedestrian axis (by author)

Regarding the physical elements used as tools for territorial transformation, four artifices stand out: integration and consolidation of community courtyards, creation of green alleys for pedestrians, building's frontal setbacks, and reformulation of green public squares system. Those elements were articulated to provide the emergence of complex green infrastructure in the area. Nevertheless, the urban design was conceived to avoid severe disturbances in the typological characteristics, respecting modularity, ratio distribution, scale, and even materiality aspects.



Figure 3. Recently constructed building with frontal setback and under construction common courtyard accessible directly from public street (2021 - by author)

### 3. Urban green Infrastructure promoting socio-spatial cohesion

Despite the importance of defining the centers of gravity for the systematization of the intervention process, the primary mechanism used to unify the heterogeneous and disconnected urban fabric was implementing a green infrastructure network. The development of these multifunctional green spaces, strategically designed along with the full extension of the intervention area, promotes equal access to green spaces in the middle region of the district.

Among the benefits sought by implementing a comprehensive green system are an increment in urban permeability, improvements in social cohesion, and adaptation to climate change – which, under all aspects, drives the resilience of this urban territory (Pauleit et al. 2019). Increasing the biologically active green surface and ensuring accessibility to open green spaces were essential aspects of the strategy for creating an integrated framework for a healthier urban environment (Kaplan. 1995). Towards that perspective, the new green spaces were accomplished by redesigning former residential plots and brownfields.

Approaching the concept established by Kropf (2018), "configuration is an arrangement of parts, and a type is a configuration with a degree of modularity and integration as a cultural habit. The type is a configuration that is or has been actively reproduced. While each example of a type might be slightly different, the configuration remains the same."

In line with that notion, the reconfiguration of the historic courtyards and the entire demolition of some poorly conserved buildings, despite being antagonistic to the movement of typological perpetuation, allowed the revival of the area's configuration. As a result of this process, it is possible to highlight the improvement in public health performance, equal access to leisure, strengthening of social relations, protection of biodiversity, and increase in local economic activities (Pauleit et al. 2019).

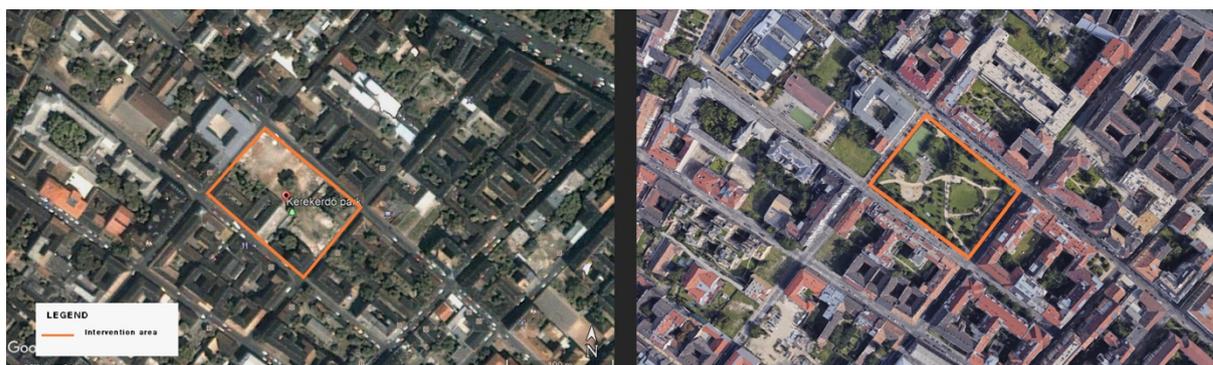


Figure 4. Remaining urban block before and after the demolition of residential buildings for the implementation of an urban park – Ferencváros (Google Earth)

#### 4. Resilient structures and the composition of the urban landscape

*Resilient urban environments can be defined as a set of characteristics "consisting of identifiable parts that through localized interaction (process) produce stable patterns (structure) across temporal and spatial scales" (Ernstson. 2010). Given that approach, the "recognizable parts" of a city can be determined as remaining elements contributing to the consolidation of the urban structure and its landscape conditions.*

In the urban (and social) restructuring that took place – and still unfolds significant changes – in the middle area of Ferencváros, it is possible to observe several "identifiable parts" that resisted the inevitable transforming forces (Ribeiro and Gonçalves. 2019), emanating mainly from political sources. In this case, specifically, the local government had the legislative power, determined restrictions, design, and construction guidelines, and owned most of the properties and plots in the intervention region.



Figure 5. Resilient urban elements: prior industrial building converted into high-end housing – Ferencváros (Municipality public data, 2008)

Therefore, the urban structure maintained its production of stable patterns, despite undergoing significant changes at the typological level by implementing extensive green infrastructure and the new architectural and landscape solutions achieved. Furthermore, elements relevant to the definition of urban morphology were carefully maintained, such as the network of streets, the delimitation of the blocks, and the plots' patchwork. The transformation emerged mainly from rearranging urban voids or underutilized areas, such as those with inappropriate functions for residential zones

or occupied with low-rise buildings with few housing units and no commercial function attached (Locsmándi. 2001).

Redesigning the predominantly residential multifunctional blocks was one of the focal points of the area's regeneration project. Despite being heterogeneous, the blocks mainly were composed of traditional typological buildings - commonly found in historically occupied zones in Budapest – except for the urban voids left by the old small industries interspersed in the urban fabric.

In general, each building was equipped with its courtyard, in many cases, dimly lit, lacking green elements, and in poor maintenance conditions. The urban reconstruction project called for the demolition of some wings of traditional buildings, or in some cases, their complete demolition, to generate enough space to implement a shared green infrastructure.

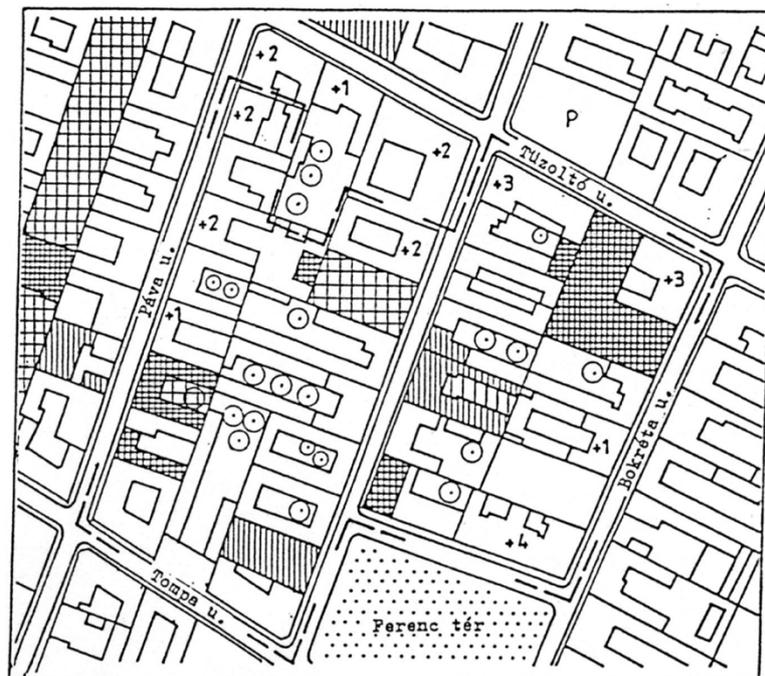


Figure 6. Older blocks of middle Ferencváros - hatched areas as prior small industries (LOCSMÁNDI. 2011)

This new configuration implied a radical change in the use of courtyards, resulting in the strengthening and multiplying social relations in this space without detracting from the urban landscape's main features. The blocks had their average occupational ratio maintained, with the building's facades composing a continuous alignment and volume and proportions similar to the pre-existing state. However, in many cases, they became transparent and permeable after the implementation of new green pedestrian axes.

Accessibility to the urban open spaces was positively complexified. A new spectrum of public and semi-public areas emerged from the prior concentration of private-use areas. Meaningful visual connections were established and enhanced by new local regulations, which do not authorize the placement of opaque barriers blocking the view through the gardens, for example.

## CONCLUSIONS

Urban resilience is a highly pertinent concept to post-Soviet cities, which underwent significant political and social disruption processes, implying a severe restructuring of their physical and psychological spaces (Ribeiro and Gonçalves. 2019). Furthermore, the dynamics of accelerated urban expansion in post-Soviet cities required the restructuring of sub-dense areas, intending to provide space for creating new mixed-use centers inserted in the central context of cities (Kjell et al., 2014). Given the analyzed intervention, the persistence of typological urban patterns is notorious, besides the massive implementation of urban green elements, which steadily impacted the project's development and the current raising in the quality of life in the neighborhood.

By analyzing the regeneration of the middle region of Ferencváros, it is possible to identify typical elements present in urbanization processes in Budapest and other post-Soviet large urban centers as a consequence of the massive process of privatization of public space (Hirt, S. 2014). However, some characteristics of this development stand out, such as implementing green infrastructure to strengthen social relations and the local economic scenario – factors that indicate the strengthening of sustainable practices.

The study of this area helps to identify the political and design measures that guided the emergence of a healthier, potentially more sustainable, and consecutively more resilient urban environment, providing space for urban green infrastructure, higher-quality housing, and multifunctional public areas. As the scope for further investigations, it appears relevant to specify the social and ecological advancements and the sustainability capacity of the new urban environment after the project consolidation by analyzing the urban green forms in detail.

Despite the positive aspects arising from the restructuring of this urban territory, it is possible to conclude that the process of establishing the major design decisions and configuration of the social spatialization in the area followed the characteristic flow of the "top-down" management model, without active community participation (The European Environment. 2020). This conformation, commonly used in introducing the market economy in post-socialist countries (Hirt and Stanilov. 2007), tends to result in segregationist practices and intense gentrification.

The knowledge gained through the practices adopted in this intervention can be applied in other future urban regenerative projects with a similar state of affairs. Improving the quality of the city's public spaces can also be an outcome of public-private partnerships. The example represented in this case study proves the benefit of both parties involved since properties located in more lively urban stretches, with access to green infrastructure, commercial activities, and public transport facilities are naturally more coveted.

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# Heritage-inspired Local Knowledge as a Tool for Planning the Future of Late-modernist Housing Estates

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## ABSTRACT

*Over the past decade, post-socialist housing estates have been gradually accepted as part of the Eastern European urban heritage. Despite the seeming omnipresence of this recognition, its focus has been mostly one-sided and concentrated on the tangible manifestations of the past connected to the built environment of microrayons. The following paper proposes to integrate a more holistic approach – stemming from the current debates in the field of heritage studies – by looking at the pivotal role of the intangible values of such urban landscapes. What is the residents' emotional connection to their concrete jungles? What memories do they share? How does it influence their collective image of the neighborhood? Using Stobbelaar and Pedrolí's model of Landscape Identity Circle, I intend to demonstrate that the questions above should be considered crucial for the planning community to fully understand the complexity of these supposedly repetitive landscapes. Based on the ongoing research in Warsaw's Ursynów neighborhood, I will look at how mnemonic mapping can improve planning processes by opening new ways of expression for the locals.*

## KEYWORDS

*mass housing, modernism, heritage, memory, participation*



*Figure 1. Some of the very first residents and buildings in Ursynów near Wiolinowa St., 1983.  
(Source: W. Pniewski)*

## 1. Introduction

Over the past decade, post-socialist housing estates have been gradually accepted as part of the Eastern European urban heritage. Seemingly in opposition to their Western counterparts, they are often perceived as an embodiment of modernist planning ideals that was not completely distorted by the capitalist system of production or overtly racist housing policies (Hess et al., 2018). Bloki, paneláky, panelház, or Plattenbau have all gained different connotations stemming from their historical trajectories which, in most of the cases, had little to do with what has happened to similar structures in the Netherlands (Wassenberg, 2013), the UK (Hanley, 2017), France (Cupers, 2014), or America (Bloom & Lasner, 2019).

This differentiation, although a very simple one, has some serious implications for understanding the fallacy behind the ways in which late-modernist residential complexes in Eastern Europe are being treated from what one may dub as heritage perspective. Despite the popularity of pre-fabricated socialist architecture, its recognition as a vital component of the urban landscape of many cities in our region has been mostly one-sided and concentrated on the tangible manifestations of the past connected to the built environment of microrayons. Even if we consider some of the more innovative housing estates as examples of architectural genius (such as Lublin's os. Słowackiego), we still need to account for the swaths of painfully repetitive concrete jungles dotting the landscape from Magdeburg to Sakhalin. Is it possible to consider them valuable from the heritage perspective if what is analyzed is the form rather than the substance?

The concentration on the tangible aspects of the late-modernist residential landscape, albeit dominant, has nevertheless been complemented by several studies

looking at the intangible. Most notable examples include Kuba Snopek's (2015) study of Belayevo in Moscow, Barbara Engel's (2019) book on heritage planning in Germany, Russia, and Ukraine, or the upcoming collection of essays edited by Tinatin Gurgenidze (2021) – interestingly, all published by the same publisher. Yet on a broader scale, the interest is still either purely physical or, coming from the other end of the academic spectrum, socio-cultural, preoccupied chiefly with the production of culture linked to these environments. Given that neither of these focuses can comprehensively address the potential of housing estates in post-socialist cities, there is a need for some middle ground which would help establish the uniqueness of this type of urban landscape, simultaneously coupling it with planning objectives necessary for preserving and upgrading it for the future (Kovács & Herfert, 2012; Szafránska, 2015). In order to find it, the focus on the tangible should move towards more emotionally-charged research, trying to find answers to questions such as: What is the residents' emotional connection to their concrete jungles? What memories do they share? How does it influence their collective image of the neighborhood? I would argue that a more systematic and high capacity method grounded in intangible heritage can serve precisely as such middle ground in this context.

## 2. Shifting discourse in heritage studies

Before moving on to analyzing the specific ways in which this approach can help in bringing forward all the intricacies related to the interplay between the built environments and the emotional perception of it, it is important to discuss, at least very briefly, the ongoing discursive shifts in the field of heritage studies. In the last decades of the 20th century, heritage practice pertaining to the predominant branch of this field of study (known as the authorized heritage discourse, or AHD) was often described as self-perpetuating – blindly adhering to a circular conceptualization of purely European values selected by a narrow segment of the society in a never-ending process of affirmation of its self-proclaimed superiority (Smith 2006, Harrison 2013). Yet with the gradual emergence of the voices actively challenging the status quo in practically all of the domains of human activity, heritage practice too started evolving. The ongoing changes in the domain of heritage protection can be summarized as an attempt not to broaden the scope of the practice, but rather to establish a completely new discourse that would 1) democratize the debate on cultural heritage, 2) enrich the protected physical object with intangible values relating to it, and 3) reconnect the historic with the present and the future (Bandarin 2015, Jigyasu 2015).

Most importantly for this paper, the departure from the AHD has been marked by a growing interest in the intangible – the symbolic sphere associated with the physical object and responsible for shaping its importance for the local community (Van der Hoeven 2018). This new trope reveals the necessity to consider cultural heritage, with its intangible, cultural markings, as part of a larger landscape. Such landscape should be then regarded as a cultural construct with all its spatial and political manifestations of the activities of a given community. This is especially true in relation to what Punekar (2006) calls an inhabited landscape – “the physical world that people participate in directly, modifying it as they are able according to their needs, aspirations, and means.” Landscape can be thus defined as an ever-evolving repository of social history and community values.

The thrive for immersing heritage within a broader landscape found its translation in the official UNESCO documents under the concept known as the historical urban landscape or HUL. Albeit defined on several occasions, contrary to the



traditional rigid framework of heritage preservation guidelines, HUL is characterized by a certain fluidity. Possibly the most suitable and comprehensive definition of this term was brought forward by Van Oers (2010):

Historic Urban Landscape is a mind-set, an understanding of the city, or parts of the city, as an outcome of natural, cultural and socio-economic processes that construct it spatially, temporally, and experientially. It is as much about buildings and spaces, as about rituals and values that people bring into the city. This concept encompasses layers of symbolic significance, intangible heritage, perception of values, and interconnections between the composite elements of the historic urban landscape, as well as local knowledge including building practices and management of natural [and man-made] resources. Its usefulness resides in the notion that it incorporates a capacity for change.

Already at the beginning, Van Oers underscores the visceral character of the HUL. It is a very convincing and timely reference to the post-modern conceptualization of the city as a phenomenon equally material as emotional which landscape can be referred to as an experience (Grefe, 2008). Furthermore, he manages to explicitly describe the dynamic nature of the cultural landscape and the usefulness the HUL approach for managing the potential of this constant evolution. Yet most importantly he refers to the “local knowledge” – a notion that has a paramount role in the creation of the urban landscape.

Even though the experts – such as architects, planners, historians, or sociologists – know how to defend valuable landscapes on more formal levels, using their professional expertise, they nevertheless lack what Krinsky (1984) and many other has dubbed as “local knowledge.” What constitutes local knowledge is a broad and extremely versatile expertise relating to a specific area, known only to its residents (or active users). It consists of “perceptions, desires, grievances, opinions, ideas, beliefs, thoughts, speculations, preferences, common sense, feelings, and sensations [...] [but also addresses] needs, cultural codes, spatial conducts, social relations, societal norms, and everyday life scenarios and practices, all of which are rooted in the locals’ everyday reality” (Berman and Schnell 2012). Furthermore, local knowledge is not static – on the contrary, it is collected, preserved, and passed on from one generation to the next one, forming a sort of local cultural continuity and identity (Corburn 2003). Defining local knowledge in such a heritage-inspired way, it can be argued that tapping into it gives the planning community an opportunity to access previously untapped datasets – those relating to emotions and rooted in memories.

### 3. Landscape Identity Circle – theoretical basis for a heritage-based local knowledge approach

The shifting focus of heritage studies gave birth to numerous theoretical concepts connecting this formerly tangible field to a more visceral dimension. One of them, the landscape identity circle (LIC) developed by Stobbelaar and Pedroli (2011) seems to be an ideal frame for establishing the uniqueness of a landscape that is arguably as mundane and repetitive as possible. Their model proposes looking at the relationships people form with their surroundings using 4 quadrants (Figure 2). The first one refers primarily to what can be understood as personal relationship to the landscape. People are constantly in contact with the landscape they live in to confirm who they really are. In this respect, self-identity is continuously confirmed or changed in interaction with the social and physical environment. The second quadrant corresponds to the collective importance of the landscape in question. It is vital that the landscape is treated by the community as the image of a collective future. Furthermore, these landscapes become



Figure 2. Landscape identity circle, adapted from Stobbelaar and Pedroli (2011).

emblematic of the stories residents tell about themselves to explain their values and life contexts within the framework of the whole community. The third quadrant would correspond to more visual cues present within the landscape. In case of modernist housing estates, it puts emphasis on the perceived singularity of the highly repetitive landscape. Finally the fourth quadrant is purely orientational. It refers to environmental cues as identified by Kevin Lynch (1960) – paths, boundaries, districts, nodes, or landmarks. It focuses on the spatial markings – how they are influenced by the previous quadrants and, to an equal extent, how they influence the first quadrant.

In order to make this model more fitting to this project's planning perspective, I simplified it and underscored the circular nature of the process of landscape identity creation (Figure 3).



Figure 3. A simplified version of the landscape identity circle model, adapted from Stobbelaar and Pedroli (2011).

It now becomes clearer that personal and collective importance (referring to quadrants I and II respectively) need to be sufficiently developed and, if possible, reevaluated before the beginning of a comprehensive planning process. Subsequently introduced alterations within the landscape will lead to changes in its emotional meaning for those who use it over time (corresponding to quadrants III and IV). This, in turn, will affect the ways in which certain elements of said landscape are perceived as important by its daily users, getting back to the first two quadrants and restarting the entire cycle.

#### 4. Designing the tool

Having described the theoretical underpinnings of the method, it is high time to see how it can be translated into practice. More importantly, this section of the paper will try to answer the question on how to quantify or visualize the data that can be collected by using the heritage-based local memory approach. Finding the right answer will definitely take a lot of time, as what needs to be properly catalogued and compartmentalized in this case is a large number of stories, memories, anecdotes, and generally longer descriptions of one's feelings and emotions. Nevertheless, I will propose one possible tool, based on interactions with a map.

The tool was designed as the primary data collection method for a project aiming at uncovering the hidden values of mundane urban landscapes, based on a case study of Warsaw's Ursynów – a district that can be described as the largest amalgamation of late-modernist housing estates in Poland (Cymer, 2018). The area is already well-researched from the architectural, historical, or socio-cultural lenses, both in terms of academic texts and more popular-scientific literature. Ever since its conception in the mid-1970s, it has been a subject of various cultural references, in films, music, or visual arts. Adding to that, the fact that it houses the first subway line in Poland, gives it an iconic status and a rather strong name brand. Furthermore, just a glimpse at how involved the local community is in the life of Ursynów is a good testimony of how this ongoing recognition positively influences the sense of belonging and local pride. For a heritage researcher this means that Ursynów is a place dotted with memories and gone

through several cycles of landscape identity creation. Interestingly enough, there has been no attempt at using a memory-based emotional approach to this landscape in participatory planning – this is why this case, albeit already having been extensively researched, is a perfect testing ground for the approach proposed in this paper.

The first major obstacle on the way towards building a simulation of a planning process based on a simplified landscape identity circle model lays in the lack of systematically collected and categorized data reflecting the first two quadrants of the LIC. In order to access them, I used one of the simplest available method – a questionnaire – but enhanced it by setting it online and attaching it to an interactive map. The respondents, reached primarily through social media, were given a task to answer 13 questions, out of which 6 are purely statistical, 2 relate to the design of the data collection process, and 5 give any respondent a chance to describe their memories and/or emotional relationship to the area. Each of these categories has a specific role to perform – the closed statistical questions are devised to enable easy categorization of respondents leading to more quantitative analysis of the obtained dataset; short questions relating to the design of the questionnaire are evaluating how the respondents feel about being subjects of such personal research; finally, the open, descriptive questions are aiming at discovering different levels of emotional attachment, from positive associations, to bad memories ending on identification of places that need to be preserved or upgraded.

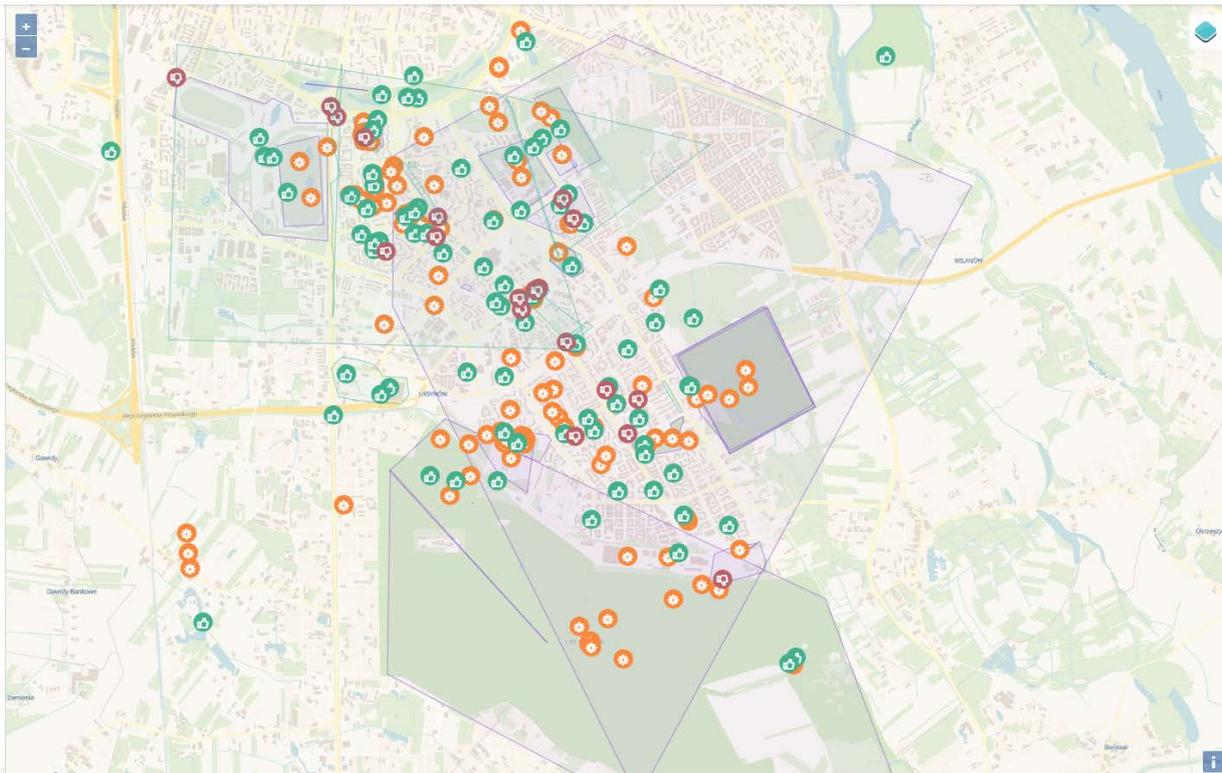
The open questions, being the most important of the entire questionnaire, have been modeled around “example stories” – funny answers given by fictional residents of the district. These answers contain a number of references possible to decode only for those who have a basic knowledge of the area, underlining the local character of the exercise. This way, the respondents have a better overview of what is asked of them, additionally receiving a signal that the entire exercise is not serious and they should feel as much at ease as possible.

Yet the most important component of the questionnaire is that the 5 open questions refer to an interactive map onto which the respondents can pin their answers by locating the spots they want to describe, or create a polygon representing the areas of their proposed (lack of) intervention. In order to facilitate the interaction with this type of digitalized geo-survey, I am using Maptionnaire® – a platform designed for participatory mapping.

## 5. Preliminary results and next steps

The implementation process, together with the designing of a promotional campaign, lasted approximately 2 months. What had to be done in this period consisted of: contacting adequate stakeholders, identifying social media channels that can be used for connecting the residents with the questionnaire, and preparing promotional materials, such as posters, leaflets, website, Facebook® page and the graphics connected to them. The questionnaire opened on May 20th, attracting some 80 respondents in the first two weeks. In the beginning of July, towards the end of the campaign, this number rose to approximately 150 respondents, most of which gave answers to both closed and open questions. This number is approximate as a small number of paper (or analogue) questionnaires were left at local libraries and neighbor-oriented cafes.

Even if the sheer number of respondents is not as high as it could be, was the promotional campaign more elaborate, it is nevertheless possible to identify some interesting preliminary patterns. In this section, I would like to discuss three of them.



*Figure 4. Mapped results from the first week of the questionnaire's run.*

First, at the beginning of the questionnaire's run, the number of pins representing places of great importance for the entire community (orange) was much higher than that of those standing for places of personal importance (green) (Figure 3). Quite naturally, it could be linked to the order of questions in the survey, as it starts at the community level with question 7 and only later zooms in to the personal level in questions 8 and 9. After receiving a disproportionately high number of the orange pins, it was decided that the number of possible answers to question 7 should be limited to three. Only then, the number of green pins started soaring, bringing more balance to the map. What is interesting, is that the descriptions attached to some of the orange pins contained rather personal memories, subsequently projected onto entire community. One notable example discusses a pastry shop:

Pastry shop in Olkówek Park. The pin is indicative, I cannot locate the place. For everyone - a place with delicacies. For me, a memory from high school graduation class, when we were all 18 and it was precisely in this shop where we were ordering all the birthday cakes to celebrate our 18th birthdays. As required by tradition we had to devour them in class, during lessons. Thanks to that, our teachers had to cancel quite a lot of tests!

The memory described in this case can be understood as important for the entire community, but the respondent clearly puts herself in a position of a representative for that community. It is important for her, to some extent the memory is collective, hence it becomes important for everyone.

The second observation relates to the historical evolution of the district. The answers given by those living in the northern part of Ursynów (the oldest one, built in mid-1970s) are quite different from their neighbors' from the south (built between late

1990s and 2000s). Very often, the northerners focus on describing the socio-cultural importance of the area, whereas the southerners are keener on enumerating spatially grounded artefacts. Taking these patterns into account, it can be deduced that the northerners act as “specialists,” those who feel the necessity to educate others about the already apparent cultural significance of the areas they inhabit. Instead of referring only to their own memories, they try to posit them within the rich local history. This stands in stark contrast to the answers provided by the southerners, who focus either on the physical aspects of the area, or on very personal memories (first kiss, getting mugged, long talks with best friends, etc.). Looking back at the landscape identity circle, it is tempting to say that whereas the north has already a well-developed identity which is recognized by the entire community, the south is still in the process of developing these identity narratives.

The last observation that should be mentioned at this early stage of the analysis is that regardless of the section of Ursynów discussed in the answer, almost half of them refer to seemingly unimportant, trivial spots such as benches, football fields, or small topographic features located between the buildings. This attraction to mundanity opens new, previously undiscussed channels of spatial interpretation in which it is clearly visible which areas are more emotionally positive and which seem to trigger unease. A good example is several respondents praising “the tiny passages between the buildings, immersed in the greenery of the gardens maintained by local grannies,” where some met their future spouses or spent their childhoods playing with the local kids (Figure 4).



Figure 5. One of the narrow passages between the buildings in Northern Ursynów.



This positivity can be juxtaposed with others' grievances over "an eyesore of a parking," a place which is often associated with fear and memories of broken tail lights. Unsurprisingly, these associations radiate outwards and generate a fairly specific image for their surroundings.

Whether these emotionally charged observations can lead to more detailed ideas on how to preserve/redevelop certain areas is still unclear. In this respect, the results of the survey should be regarded only as a gateway to more elaborate analyses. The project assumes that the next steps will consist of at least two more stages: 1) a repetition of the survey with a different, possibly gamified approach; 2) a series of workshops during which the residents and the experts will be able to discuss the benefits of tackling change by means of memory-based data collection. It is still hard to predict in which direction the project will evolve and whether it will prove inspirational in designing more dialogue-oriented participatory processes, but the hopes are high. In order to sketch the potential of such approach, the next section of the paper will briefly discuss the benefits that, at least theoretically, should rise from this emotional local knowledge mining.

## **6. Benefits of using memory-based data collection**

The benefits stemming from the usage of this approach in tackling the issues related to late-modernist housing estates in Eastern Europe are manifold, but in this paper, I would like to identify only two, both of them interrelated. First of all, intangible heritage perspective based on the landscape identity circle gives a unique opportunity for engaging local residents in the process of discovering the "hidden" values of mundane landscapes of housing estates. This relates to the idea of extracting emotionally-charged and memory-based local knowledge. Letting the residents delve into these areas, usually omitted on the level of planning, invites them to contemplate their surroundings from a rather novel perspective. Just by including one's positive memories to a mundane object such as a bench, the importance of said object can become elevated and its place in any planning intervention much more visible.

Secondly, by focusing on the knowledge that needs to be extracted from the locals, the role of professional planners or researchers needs to shift – in this situation, instead of acting as educators holding the keys to all the shrines of wisdom, they need to let the locals educate them, reveal the secret ways of operating within the ecosystem of a modernist housing estate. This role reversal usually gives a substantial confidence boost to the local populations, making them – rightfully so – feel like they are the ultimate experts. Subsequently, it can be argued that the concentration on local knowledge and collection of data related to it has a strong potential for enhancing the connections among local residence and increasing their sense of community, chiefly by engaging them in an open dialogue with the professional community, giving both sides equally important roles in the discussion. This strengthening can then become the first step on a way of preparing local residents and planners alike to participate in comprehensive decision-making processes, pertaining to the higher echelons of Arnstein's (1969) ladder of public participation.

Following the categorization established by Innes and Booher (2000), it becomes possible to see the added value of intangible heritage in more specific, planning terms. They posit that the methods of involving the public in participatory planning processes can be divided into two categories:

- *unidirectional methods* (such as public hearings, lectures in which one side dominates the other) which serve as a tool for top-down extraction of knowledge without a clear objective of establishing an active dialogue between professionals and laypeople, ultimately leading to a development that is informed, yet not necessarily agreed upon by everyone, and
- *deliberative methods* (active dialogue in which both sides act as partners) which rely on true, bottom-up public participation (i.e. the top rungs of Arnstein's ladder) and aims at an active dialogue between all the actors involved in the process of decision-making, ultimately leading to a consensus-based development.

Using these terms, we can see how memory-based intangible heritage can help designing more deliberative approaches, as the notion of partnership stands right at the core of any method relying on local knowledge extraction.

## 7. Conclusion

The question regarding the usefulness of this method remains open. Potential benefits seem to be clear and important from the perspective of both experts and local communities, yet, as has been already mentioned, it is still impossible to assess it at this point. Despite that, the sheer notion of complementing the already existing concentration on the tangible manifestations of the past connected to the built environment of microrayons should be taken into account – especially if we are planning on upgrading rather than erasing late-modernist housing estates which form the backbone of so many of the cities in Eastern Europe. I would argue that enhancing the narratives on these blocky neighborhoods can help understanding the true mechanisms behind the daily lives of the residents of our socialist modernist (supposedly) utopian estates and, thus, their real architectural, historical, and societal values.

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# Post-socialist Urban Housing Form: Changing Ger Districts in Ulaanbaatar

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## ABSTRACT

*Post-socialist cities have experienced changes in socio-economy and urban policy after the collapse of socialism. This study focus on the development process of the residential area named the ger district in Ulaanbaatar. Since the 90s, the fall of socialism in Mongolia, migration from rural to Ulaanbaatar has considerably occurred, and the ger district has experienced dramatic growth causing social and environmental issues. The ger district, referring to informal settlement, has scattered as urban sprawl since the 90s, but its spatial form starts from the 18th century in Ulaanbaatar. The main expectation of this study is the changes of physical elements in ger district in terms of its development stages. The study is based on the relevant literature and three case studies. There are four development stages of ger district: (1) the infancy ger district, (2) the consolidated ger district, (3) the maturity ger district, and (4) renewed ger district. Furthermore, the basic morphological elements shaping the ger district, namely ger (Mongolian yurt), plots or parcel (gazar), fence (hashaa), street (gudamj), and small building, will be explored based on the mapping from remote sensing data set. This study compares three case studies from different urban locations in Ulaanbaatar and focuses on the small urban scale as 500m x 500m viewport.*

## KEYWORDS

*Ulaanbaatar, ger district, morphology, mapping*

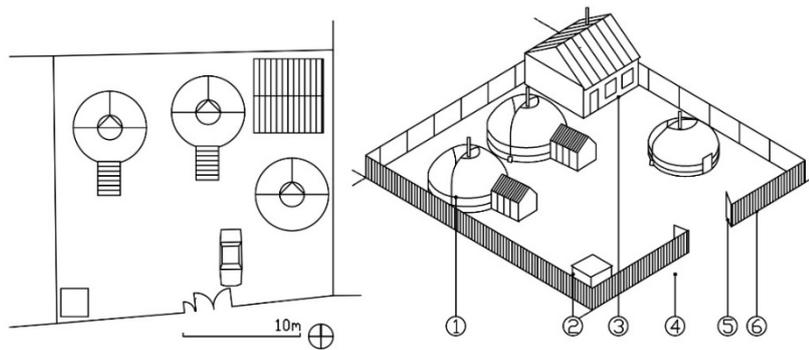


Figure 1. The single plot in the ger district: (1) ger (round tent or yurt), (2) pit latrine, (3) detached house (4) street (5) entrance, (6) fence (Source: Author)

## 1. Introduction

Mongolia has faced dramatic institutional changes from socialism to the free-market system and rapid urbanization since the 90s, the collapse of socialism (Chen, et al., 2018). In 2020, around 46 percent of the Mongolian population, 1,597,290, resided in the capital city, while the population in Ulaanbaatar has tripled approximately since the 90s (NSO, 2020). Since the 90s, the portion of the population between urban and rural areas in Mongolia has changed.

The urban housing form in Ulaanbaatar can be categorized mainly into: (1) the housing estates from the socialist era, (2) the housing estates after the 90s, (3) the low-density residential area including the ger district (*ger хороолол, гэр хороолол in Mongolian*). In 2018, the ger district houses around 54.7 percent of the total households in Ulaanbaatar (UBSTAT, 2018), while a detached house, the round tent (*ger, гэр in Mongolian*)-the traditional dwelling of Mongolian pastoralist-and a plot surrounded by wooden fence shape the form of ger district (See Figure 1.). Moreover, the ger district is referred to informal settlement in many research materials and reports (Byambadorj, et al., 2011; Park, et al., 2019; UN-HABITAT, 2010). However, due to legal provision and land reform after the 90s in Mongolia, there has been ambiguity addressing whether the ger district is informal settlement or not (Byambadorj, et al., 2011). Since the end of the 90s, the ger district has absorbed most migration from rural areas and expanded dramatically by approximately six times between 1990 and 2013 (Park, et al., 2019). Therefore, the ger district has developed outside of urban planning and management, resulting poor living conditions due to a lack of infrastructure and social amenities (Dahiya & Shagdarsuren, 2007).

This study aims to outline the brief background of the changing ger district, and to reveal its fundamental physical elements and development process based on recent research approaches. Hogeun Park conducted the research reflecting the ger district's development stages and spatial patterns, using Support Vector Machine Analyse, and outlined three development stages: Infancy, Consolidated, Maturity. Many studies have been conducted on the development process and growth ger district in recent years based on the remote sensing data (Park, et al., 2019), (Amarsaikhan, et al., 2009). Furthermore, to study the morphology of informal settlements globally, Kim Dovey (Dovey, et al., 2020) compared informal settlements around the globe based on the high-resolution image of Google Earth using urban mapping in 500m x 500m urban scale.

## 2. Background

### 2.1. The brief historical background of ger district

Ulaanbaatar settled at the current location in 1779 after several movements as the nomadic town, while the city changed its name as following: *Urga* (1639-1706), *Ih huree* (1706-1911), *Niislel huree* (1911-1924), *Ulaanbaatar* (1924-current) (Munkhjargal, et al., 2006). There are several facts presenting the city in the beginning of 19<sup>th</sup> century. For instance, the descriptive fact, Jugder's drawing named "*The Ih huree*" in 1913, illustrates the residential area in the *Ih Khuree* as the current ger district. From the painting, it can be seen this residential area in *Ih huree* consisted of plots (*gazar*), fences (*hashaa*), gers (*round tent or yurt*), streets (*gudamj*), and single-story buildings. Several residential areas, depicted in Jugder's drawing, such as *Gandan*, *Dambadarjaa*, and *Mayma hota* (currently *Amgalan*), still exist today as well as the ger district (Munkhjargal, et al., 2006).

Between 1924 and the 1990s, the development of Mongolia integrated with socialism. Around the 30s, the city center was occupied by the plots with several gers, single-story buildings erected by timber or mudbrick and the plots surrounded by a high wooden fence (Böttger, et al., 2014). However, after the 40s, the clearance of the ger district in the city center commenced and intended to build new city center associating public buildings and housing complexes (Castrillón, Kummel, & Ershuu, 2016). In 1954, the first urban planning was made in the Giprogor institution in Moscow, and further urban plannings followed it. According to the plannings, modern social amenities, residential complexes (*microraion or oron suutsni horoolol*), and infrastructures were built. Therefore, mass housing programs based on the mode of prefab housing named "*Ugsarmal*"-as well as Hungarian *Panelház* and *Panelki* of Soviet Union-were implemented in several locations of ger district (Munkhjargal, et al., 2006).

After the 90s, the socialist regime collapsed in Mongolia, and the new democratic constitution provided privatization of property and allocating land use in 1992. "The Law on Allocation of Land and Mongolian Citizens for Ownership" was legislated in 2003. By the law, Mongolian citizens can possess (*ezemshih*) or own (*umchluh*) a land only once up to 0.07ha-approximately 25m x 28m-for the family purpose. Ariunjargalan and Suk-Yen (Bayaraa & Yoo, 2017) analyzed the effect of land privatization and pointed out that allocating private land encouraged real estate economy and caused uncontrolled land use known as sprawl.

Except for the renewal of ger district in the socialist era, the renewal projects of ger district, involving the government, international funding organizations and residences, are being implemented to create urban subcenters in six locations, and tranche-1 including the subcenters of *Bayankhoshuu* and *Selbe* is ongoing.

### 2.2. Forces affecting the growth of ger district

Except for land privatization, many forces are stimulating the migration to cities and the growth of ger district (Algae, 2018). For instance, the dzud (*zud, зүд in Mongolian*), severe winter, in which herders lose their livestock, their main livelihood, significantly impacts the migration from the rural to Ulaanbaatar. After the dzud, the herders usually migrate to the city to find new livelihood or employment and settle in the ger district. In addition, poor social service, including the accessibility of education, healthcare facilities, and a lack of employment in rural, causes a rapid migration from rural to cities in Mongolia (Algae, 2018).

## 2.3. Classification of ger district

There have been several categorizations of ger district addressing its urban location and development stages. In terms of urban location, there can be three types of ger district, namely (1) central ger district, (2) middle ger district, and (3) peri-urban ger district, while this classification reflects their issue of infrastructure and living quality depend on urban location (UN-HABITAT, 2010). The central ger district borders with built-up core city and is a potential space providing high demand of new housings, commercial, and institutional service in the city. This kind of ger district accesses a high rate of transportation, water supply, and solid waste collection service. The middle ger district has difficult access and covers a steep area (mountain), causing a high risk of flood in some locations. The peri-urban ger district lacks improving infrastructures and institutional services while the peri-urban ger area absorbs migrants to the city. Some peri-urban ger districts are in hazardous areas near power lines, natural drainage channels and steep lands (UN-HABITAT, 2010).

On the other hand, the recent study revealed the development stages of ger district, pointing out three interrelated stages (Park, et al., 2019).

- *Infancy: Gers with detached houses on a relatively large portion of vegetation and soil (>80%)*
- *Consolidation: Gers with relatively large numbers of detached houses (>30%)*
- *Maturity: Gers with a relatively large portion of impervious areas (>25%)*

Between 1990 and 2013, the infancy ger district expanded by about seven times (from 19.9 km<sup>2</sup> to 153.49 km<sup>2</sup>), beside the significant part of ger district was the infancy ger district. Particularly infancy, consolidated and maturity ger districts are interrelated development processes, and infancy ger districts transform to consolidated and maturity. Infancy ger district nearby city center has been changed to consolidation or maturity ger districts (Park, et al., 2019).

Above mentioned classifications can be reliable in terms of both the development process and supply of infrastructure in the ger district. However, these don't underline the social and economic context in the ger district.

## 3. Research methodology

This research is the first step to outline proper classification and the full morphological pattern of ger district. A study covering urban areas and outskirts based on remote sensing has a data limitation because of recorded areal images of Google Earth in a given time interval have limited scope (Dovey, et al., 2020). For instance, high-resolution images of the peri-urban and central areas in Ulaanbaatar were not recorded in Google Earth before 2005.

In urban and architectural morphology, a scale ranging from city, district, community, building to room plays an important role. This study analyzed only a small urban scale and mapped it as in 500m x 500m viewport between 2005 and 2020. Furthermore, the morphological elements of ger district were mapped as a multi-layered database, showing gers, plots, fences, streets, and buildings (See Figure 2,3,4.). To select case studies, we concerned firstly urban location and secondly natural context (See Table 2.). Then we compared and discussed the development stages and morphological elements of ger district in three locations.

**Table 2. Site selection (Source: Author)**

No	Name	Urban location	Distance from urban center	Natural context
B1	<i>The Baruunsalaa</i>	Peri-urban ger district	Around 10km	Waterside
B2	<i>The Denj</i>	Middle ger district	Around 8km	On the mountain
B3	<i>The Nagoon Nuur</i>	Central ger district	Around 1.5km	Waterside

#### 4. Case studies

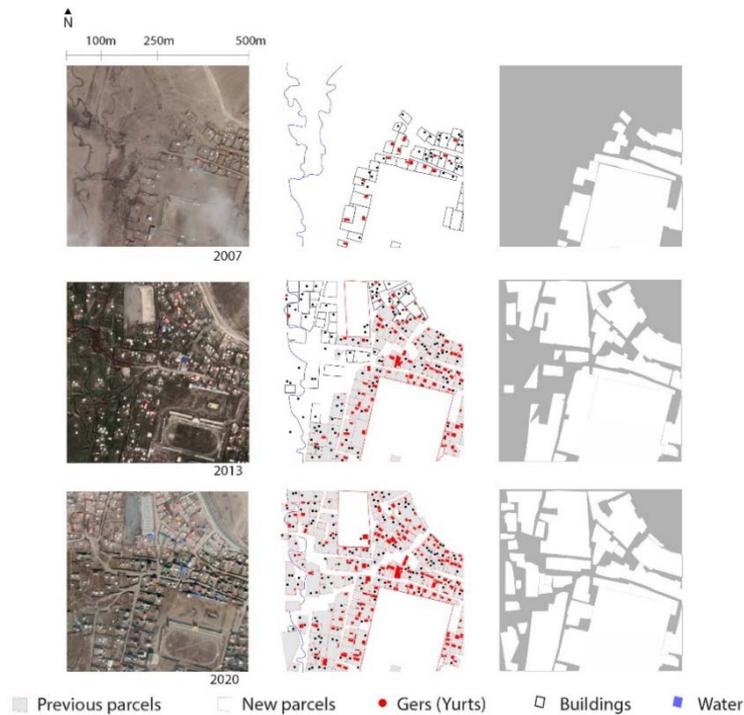


Figure 2. Multi-layered mapping of The Baruunsalaa (B1) and site photos (Source: Author)

##### 4.1. The Baruunsalaa (B1)

The settlement (B1) is located (47°57'29.4"N 106°49'01.4"E) in the northwest of Ulaanbaatar as well as peri-urban and the part of the community named “Baruunsalaa,” belonging to 7<sup>th</sup> horoo of Songinokhairkhan district. Currently, the settlement is not far from the main road—about 200m through its north, beside the settlement is enclosed by two small brooks in its west and east. In the middle of the settlement, there has been a small factory producing pure water (See Figure 2).

In 2007, the settlement was just the edge of the community with relatively few streets. However, just along the road and brook on the west side of the settlement, a single ger or pair of gers with incomplete *hashaa* and empty plots scattered between 2007 and 2013. Then, in 2017, main streets and plots bordering with the brook were shaped as an irregular layout. Also, some households upgraded their plots and erected single-family houses in their plots while still using the ger from 2013 to 2017. In 2020, a few families settled, and almost all free lands have been occupied (See Figure 2.).

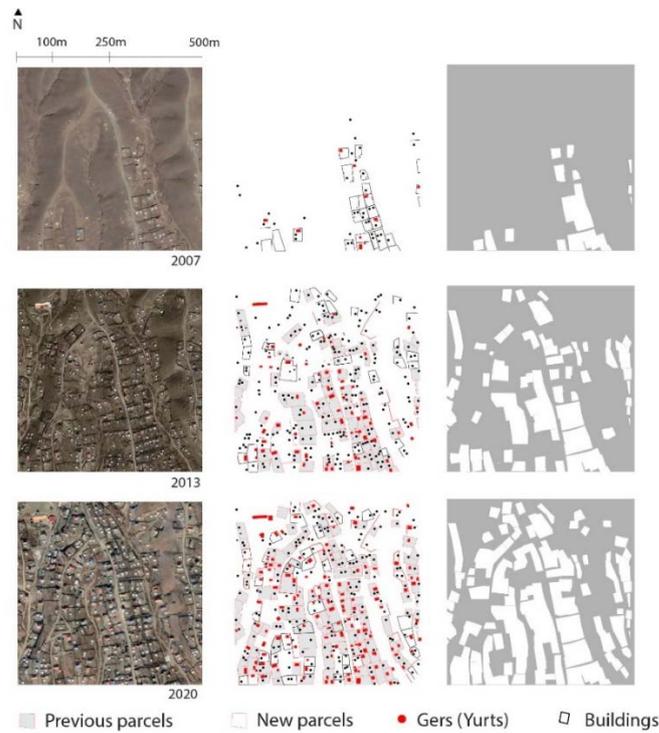


Figure 3. Multi-layered mapping of the Denj (B2) and site photos (Source: Author)

#### 4.2. The Denj (B2)

The following case study (B2) is located in the middle ger district (47°55'53.7"N 106°50'39.4"E) and a part of the community called the *Denj*. The *Denj* is the informal name of the community, and it belongs to the 12<sup>th</sup> *horoo* of *Songinokhairkhan* district. This community is on the mountain and far from the main urban road-about 1.6km.

The selected location, in 2007, had a few plots with gers and gers without fence along the road which is on the peak point of the mountain. There were single and two gers in some plots, beside a few plots were empty by the time (See Figure 3.).

Between 2010 and 2013, many newcomers settled and scattered in the community, and new roads reaching new plots or families were formed. Also, the first main streets were shaped, which was just the road in 2007. Mainly, narrow streets connecting the main streets were formed as a grid system. In terms of land use, single gers, incomplete and empty plots were still there. However, up to four gers and a few single-family houses were erected relatively in the plots along the main street (See *Figure 3*).

From the mapping of 2017 and 2020, it was observed that the layout of streets and plots shaped an irregular form, and the previous incomplete plots were completed. Moreover, the street layout is reflected by steep land and several natural flood canals (See *Figure 3*).

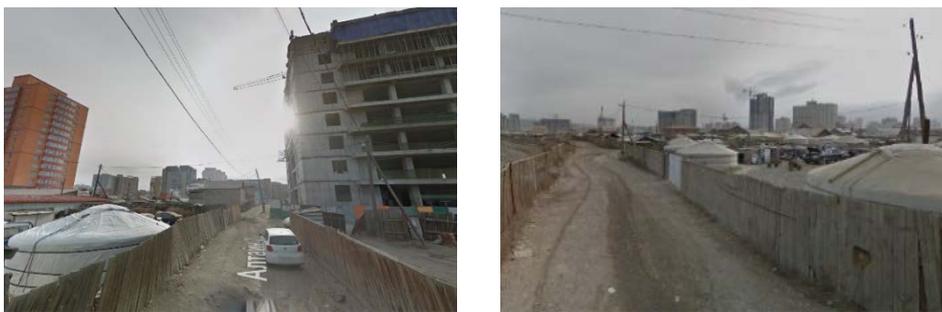
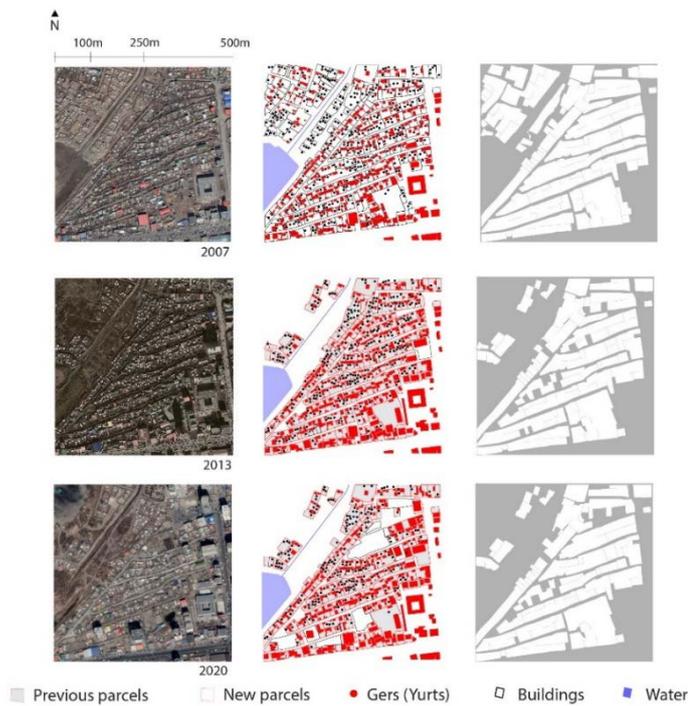


Figure 4. Multi-layered mapping of the Nogoon Nuur (B3) and embedded photos of site (Source: Author and Google Map)

### 4.3. The Nogoon Nuur (B3)

The Last case study (B3), named the *Nogoon Nuur*, is in a central urban area and far from the city center as approximately 1.5km (47°55'51.6"N 106°54'32.5"E). Compared to previous case studies, the urban renewal program is ongoing, and former families were resettled, and many plots were freed. For natural context, there are a narrow water canal and lake on the west side of the selected location. The site was planned to develop a residential complex (VII microrraion) by the fourth master plan



(1984) of the city during socialism, but the project was not implemented because of the fall of socialism (See Figure 4.).

Particularly, in 2007, the community was already consolidated, and its street form, reflecting formal urban street layout and the context of lake and water canal, shaped. However, there had been a few plots, infancy, adapting the lake and replacing an area of the lake to settlement. Since 2011, renewal of ger district has been started, and households were resettled. Today there are still free areas to be planned as a residential complex (See Figure 4.).

## 5. Discussion

### 5.1 Topography

The natural context is a fundamental factor shaping the form of ger district and impacts its patterns. The steep area, including the B2, tends to lead to an irregular street network and plot layout of ger district. Ger districts, B1 and B3, bordering with small brook, water canal, and lake, consist of irregular form. Although these steep and waterside locations are inaccessible and dangerous due to high slope and flood risk, newcomers tend to settle in such areas because of a lack of free land nearby the city center (Park, et al., 2019; UN-HABITAT, 2010). However, a steep site has an advantage. For the case study of B2, its location provides a significant view through the city as a panoramic view, and B3 can be a local green park relied on the small lake, enhancing living quality.

### 5.2 Plot

In addition to the relation between plot and topography, plot layout was basically caused by the location of the plot's entrance, and there has been much free space behind the entrance. For example, when the entrance directs to the south, the building and yurt tend to be located in the north part of the plot, meaning there is much free space between the entrance and the building or yurt.

Furthermore, at the beginning of the infancy stage, the layout and size of some plots are uncertain, and the plots were upgraded by step by step. Then plot size was more shaped and stabilized in consolidated and maturity level, but there have been activities adapting the plots, such as extending and dividing plots.

### 5.3 Street network and fence

Particularly, from a path or road, a street (*gudamj*, *гудамж* in Mongolian) was gradually formed by the fence (*hashaa*, *хашаа* in Mongolian) enclosing the plot. However, the street formation varies in the development stages of ger district. For instance, there were many incomplete fences at the beginning of the infancy stage, including I, L and U shaped, and much free space. Hence, the street network is uncertain at the beginning of infancy stage because of scattered gers without the fence and incomplete fences. Then, in the consolidated stage, the primary street network was shaped.

The fence (*hashaa*) is a fundamental aspect, separating the street, a public space, and the plot, a private space. Materials, ranging from timber, concrete block to sheets of metal, were used for the fence. The typical fence height was about 2m.

The average street width ranges from 2m to 19m, while the street length is from about 200m to 600m in the case of B3, but it is not possible to say the proper dimension

of the street in the ger district because of limited data. However, these long streets are divided by narrow, walkable streets providing accessibility as a grid system.

**5.4 Building and ger**

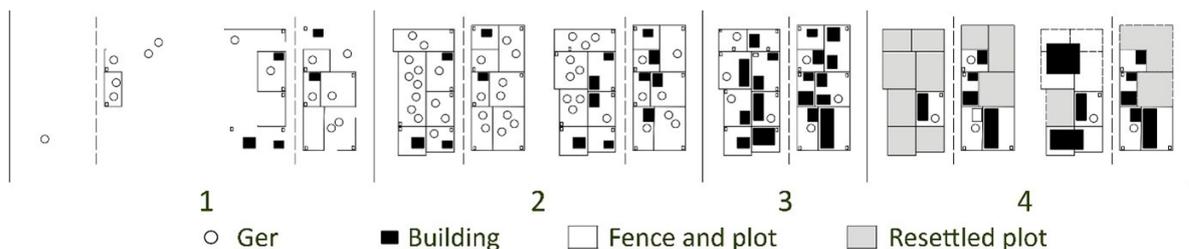
The group of building and ger has many varieties. A few small buildings were observed at the beginning of infancy, while several yurts, numbering from one to three gers, shared the plots. For instance, pairs of ger without the fence, ranging from one to four, settled along the road between 2010 and 2017 in location B2. Furthermore, in a more consolidated ger district, in the case study of B2, up to 14 gers shared the single plot, 2154 m.sq (0.2ha), in 2013.

From the mapping, in some plots, that the households were usually upgrading their plot was observed. Moreover, the plot improvements, including their dwelling, were confirmed as auto-construction, and a legal provision for the plot leads to self-help improvements (Park, et al., 2019).

Interestingly, moving in or out from the plot with their ger was significantly observed and mapped in the infancy, consolidated, and maturity stages, but usage of ger decreased in the maturity stage. In 2016, the average floor area of the ger, having five *khanas* (walls) was 19.3m.sq (the floor area of ger depends on the number of *khanas*-walls) (Ishjamts, et at., 2016). Particularly, households have adapted and usually excavated the steep land for the foundation of ger and building.

**Table 4. Preliminary summary of morphological pattern in the ger district based on three case studies and Park’s model (Source: Author)**

1. Infancy	2. Consolidated	3. Maturity	4. Renewed
<ul style="list-style-type: none"> <li>▪ Gers with detached houses on a relatively large portion of vegetation and soil</li> <li>▪ Incomplete, empty fences</li> <li>▪ Moving out and in (ger)</li> <li>▪ Shaping unclear street network</li> <li>▪ Shaping primary plot size and form</li> <li>▪ Adapting land (only on the steep area and nearby waterside)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Gers with relatively large numbers of detached houses</li> <li>▪ Complete fences</li> <li>▪ Moving out and in (ger)</li> <li>▪ Shaping primary street and road network</li> <li>▪ Adapting fence size and form (dividing, extending)</li> <li>▪ Erecting self-built house</li> <li>▪ Upgrading plot</li> <li>▪ Sharing plot</li> </ul>	<ul style="list-style-type: none"> <li>▪ Gers with a relatively large portion of impervious areas</li> <li>▪ Moving in and out</li> <li>▪ Creating commercial service along main road and street</li> <li>▪ Upgrading plot</li> <li>▪ Sharing plot</li> </ul>	<ul style="list-style-type: none"> <li>▪ Resettling</li> <li>▪ Clearing the plots, fences and dwellings</li> <li>▪ Reforming plots</li> <li>▪ Free plots</li> <li>▪ Constructing buildings</li> </ul>



**Figure 5. Preliminary diagram of development stages of ger district: (1) Infancy ger district, (2) Consolidated ger district (3) Maturity ger district (4) Renewed ger district (Source: Author)**

**Table 3. Attributes of case studies (Source: Author)**

Attributes	B1	B2	B3
Location	Peri-urban ger district	Middle ger district	Central ger district
Renewal of ger district	-	-	Ongoing
Topography / natural context	Flatland / nearby small brooks	Steep land / on the mountain	Flatland / nearby water canal and lake
Street layout	Regular	Irregular	Regular and followed formal street layout
Street width	6-14m	4-15m	2-19m
Building height	1-2	1-2	1-16
Car access	Yes	Limited	Yes

## 6. Conclusion

The formation of ger district in Ulaanbaatar has started since 18<sup>th</sup> century, and has saw dramatic socio-economic changes and uncontrolled growth. The ger district has absorbed considerable migration from rural after the fall of socialism, and today about 54 percent of total households in Ulaanbaatar reside in the ger district. Even though the definition of ger district has a dilemma reflecting whether it is informal settlement or not, this residential form includes unique vernacular architecture, Mongolian traditional yurt. Furthermore, although during the socialist era several ger district locations were replaced by housing estates, the historic locations which can be urban heritage in the city have been still kept, namely *Gandan*, *Dambadarjaa*, and *Amgalan* (historically *Mayma hota*). Overall, in urban, the ger district is the significant space keeping vernacular dwelling of Mongolian pastoralists despite its sprawled land use. Moreover this residential area may preserve their cultural aspects.

Natural disaster, the dzud, unemployment and lack of social amities in rural, resulting migration to Ulaanbaatar plays a significant role as power stimulating the growth of ger district. Also the land privatization has considerably affected its growth. However, there would be internal migration impacting its growth whether from housing estate to ger district, caused by financial crisis, seasonal or cultural context and so on. Hence the internal migration in ger district, its cause and effect should be analyzed in further studies.

Only three case studies were compared in this study, and their physical structure was exploded on the small urban scale. Although the study has data limitations concerning three locations, we pointed out the primary aspects relating to the physical structure of ger district and its logic of the transformation process by morphological approach. Morphologically, ger (round tent or yurt), plot (*gazar*), fence (*hashaa*), street (*gudamj*) and self-built house are basic physical elements shaping the ger district. For the transformation of ger district, Park proposed interrelated three development stages (infancy, consolidated, and maturity ger district), and this study conducted the three case studies following Park's model. We attempted to detail and explode such stages and proposed the fourth stage-"Renewed ger district".

Furthermore, it was observed that the proposed four development stages distinguish from each other by their physical elements. Infancy ger district is characterized by "incomplete empty fences, shaping unclear street network, primary plot form and adapting land (especially on the steep area or nearby waterside)". Consolidated ger district may be recognized by "complete fences, shaping primary

road network, adapting fence (dividing and extending), erecting self-built house and upgrading plot". Maturity ger district is distinguished by "creating commercial service along main road and upgrading plot". Particularly the renewed ger district is characterized by "resettling, reforming plots, clearing plots and constructing buildings". Interestingly, activities-sharing plot, moving in and out with yurt and self-built upgrade-were observed in infancy, consolidated and maturity ger district, beside in single plot, much free space is conserved between the entrance of fence and dwelling. Basically, these activities may associate with their cultural and social background.

By this study, we are opening further full morphological survey of urban and architectural contexts in the ger district. In further studies, comparable morphological data of ger district from more locations in Ulaanbaatar should be collected, and different scales from the room, plot to the district should be concerned. Furthermore, this paper leads to spatial aspects, including historical, cultural, social, and economic issues impacting the morphology of ger district. Also, due to the social status of households, the morphology of ger district would contrast with each other. Moreover, the density of ger district may distinguish in the development stages and even in the same community due to distance from the main road and infrastructure. As before mentioned, the ger district refers to informal settlement, but there have been many ambiguities whether ger district is informal settlement or formal. Hence, the development stages of ger district should be underlined by the viewpoint of legal context concerning its four development stages.

## NOTE

Romanization of Mongolian Cyrillic: BGN/PCGN 1964 System

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# **Novo-Lenino District in Irkutsk city as a Post-socialist Model of Transformation**

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## **ABSTRACT**

*The article considers modern strategies for renovating of a district of the 1950s and 1970s in a large city in the context of changing socio-economic priorities of society and modern trends in the renovation of mass housing. The district of Irkutsk Novo-Lenino was investigated as one of the largest dwelling areas on the outskirts of the city and as one of the unique models of transformation of the block residential housing at the present stage. Following the logic of design approaches and discussions, the models and basic morphotypes of existing buildings have been identified which form the basis for the transformation of spatial planning parameters of the housing. The logic of changing the morphotypes of buildings is presented as an internal process of modeling the space of the district of various scale levels, in which morphotypes are the spatial and planning basis for the formation of identity of residential groups. The study confirms that the morphology of space influences on the formation of internal spatial and social ties of the residents. The study of the evolutionary processes of the spatial morphology of housing confirms their importance in development of social space in the district of the large Siberian city.*

## **KEYWORDS**

*microdistrict, mass housing development, building morphology, transformation of typical block, identity of space*

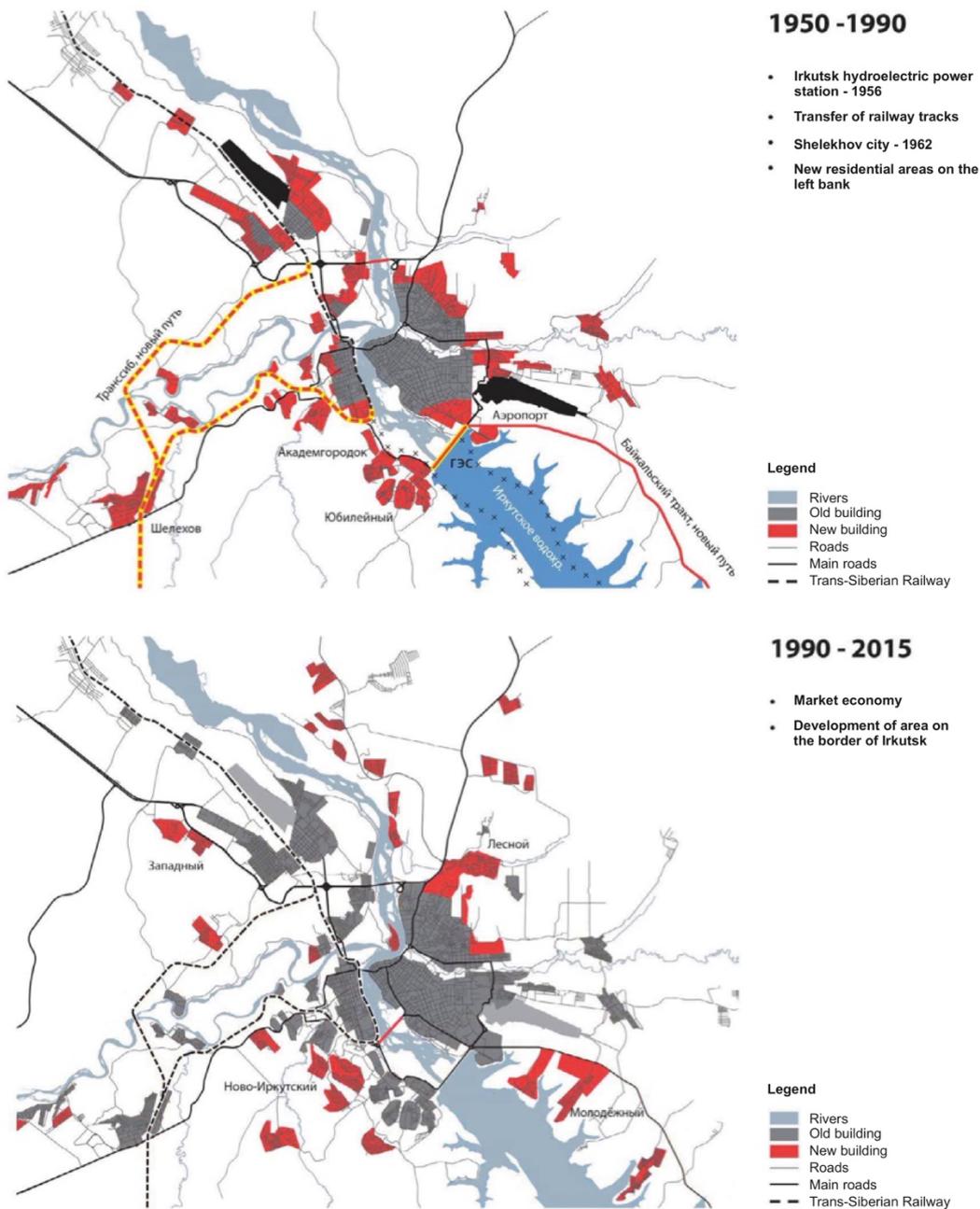


Figure. 1. Comparison of the socialist and post-socialist stages of the placement of mass residential housing in the structure of Irkutsk (Source: Engel B., Kozlov V., 2019)

## 1. Introduction

For Russia, a characteristic feature is a high degree of both national, interregional and intra-regional differentiation of socio-economic development, reflecting the unequal conditions of resettlement. Since 2005, there has been a radical change in the paradigm of regional policy associated with the transition from concept of equalization to concept of poles of regional growth. The goal of the new concept is to single out the largest cities and regions, that are an impetus of growth, which accelerates development of regional and national economies. In the second half of the 20th century, new cities were built in the regions followed by dynamic growth of population in the large cities in Siberia. As a result of urban development, the volume of mass

housing in historical cities is about 50%, in new cities – 80%. This makes the issues of assessing and prospective use of potential of the mass housing development and elaboration of modern approaches to their transformation, taking into account new external and internal conditions.

The dynamic growth of Irkutsk city from 505 thousand inhabitants in 1950 to 640 thousand inhabitants in 1964 is reflected in the future development plan and schemes of functional zoning of the city in 1963. Correction of the general plan of Irkutsk followed the logic of "functional cities": the simultaneous development of schemes for the large residential estates placement on free peripheral territories in direct connection with industrial zones. The result of the socialist period with dynamic mass housing development in the 1960s and 1990s is the "belt" of panel building in the structure of the city. (Fig. 1) Tendencies in the microdistricts development near historical city center with the use of different heights from 5 to 9 floors with service objects on the main streets are noted, as well as on the outskirts of the city with the use of up to 12 floors and more with the development of autonomous service centers. [Engel V., Kozlov V, 2019].

## 2. A brief history: structural transformation

The planning district of Novo-Lenino based on the Innokentyevsky settlement, which was founded in 1899 as a working camp for builders and employees of Trans-Siberian Railway. The railway infrastructure was actively built: a locomotive depot, a military post and other buildings. At the beginning of the 20th century, the laying of the second track of the Railway was completed and the settlement was located on both sides of the it. The population of Innokentyevsky and Novo-Innokentyevsky settlements increased more than five times and reached 5793 people, and then became a part of Irkutsk. In 1940 Innokentyevsky, Zhilkino, Voenny gorodok and Bokovo settlements were united and the Leninsky district was formed. It is located 18 km from the historical city center and had a center near the railway station.

In the 1960's the structure of Novo-Lenino district was transformed. There was a transition from the former dispersed planning of settlements to a model of large planning district based on linear form with a population of more than 35 thousand people. The urban planning base of the area was large plants grouped into the northern industrial hub. The main street named Rosa Luxemburg, as a public space for 4 km, has become the connecting urban planning element between industrial areas and residential neighborhoods. Short pedestrian links developed between this two areas, where objects of daily service were located. The new urban planning concept of a linear planning area was based on the lined development of housing and plants. The concept has been implemented since the early 1960's. It was based only on the construction of mass series of five and nine-storey prefabricated buildings. Mass series houses were grouped into three microdistricts. Each microdistrict had social service facilities within walking distance. [Engel V., Kozlov V, 2019]

The former workers' settlements that formed the basis of the planning area of Novo-Lenino district had a manor form of territory organizing, which has survived fragmentarily until present day. More than a million detached single-family houses in Siberia remain a central part of a long history of residential development.



Figure. 2. Location of the Novo-Lenino residential area  
(Source: Tumureeva M., 2020)

## 2.1. From socialist to post-socialist neighborhood renewal

The strategy of socialist resettlement in the regions of Siberia began in the 1950's. In addition to the main socialist type of family resettlement, residential buildings with communal flats were built for families of two or singles, who had a common bathroom and kitchen. In the early 1960's, the policy of housing construction in the country was rethought and the communal type of flats was refused. The pace of construction of residential areas was maintained, and the cost of construction was reduced due to the economy of housing. The cost has decreased through the transition to panel housing, instead of brick, lowering the floor height, reducing the area of flats and lowering the cost of external finishing of buildings. Such criteria made it possible to reduce the cost of a flat by a third. All this provided an opportunity for family resettlement without changing construction expenses. Usually, these were typical residential buildings with a limited set of flat layouts.

Fundamental changes in construction in the Post-Soviet period since the early 1990's had been manifested with the first private developers, who proposed new housing formats. The changes allowed developers to build quickly and earn money insofar as the demand for flats was increased. But people, who buy a new flat had a little choice, because there were no competitive offers on the housing market. Construction of houses that had been started in Soviet times were being completed. Development was actively compacted because developers were building up any unoccupied territories in existing residential microdistricts, using the potential of existing social, transport and planning structures. The change in socio-economic relations has dramatically changed the situation: more than 80% of the residents of

microdistricts have become flat owners in Russia, but the situation on the housing market has not improved.

## **2.2. Regional and global renovation of mass residential development in the 1960's and 1980's**

Nowadays in the Moscow region in Russia regeneration of mass housing is used by phased demolition and construction of high-rise residential buildings with the use of a reserve housing stock. Such model of renovation of mass housing estates is the basis of the standard of territories development. This standard is based on different conditions for building density increasing, building of quarter and intra-quarter communities of residents with collective and private property. The quarterly method of building and renovation focuses mainly on the standard type of housing and, in general, repeats the previous practice of mass housing construction. According to the new standards, organization of territorial societies is an actual addition to the ideology formation of the future urban planning and housing policy.

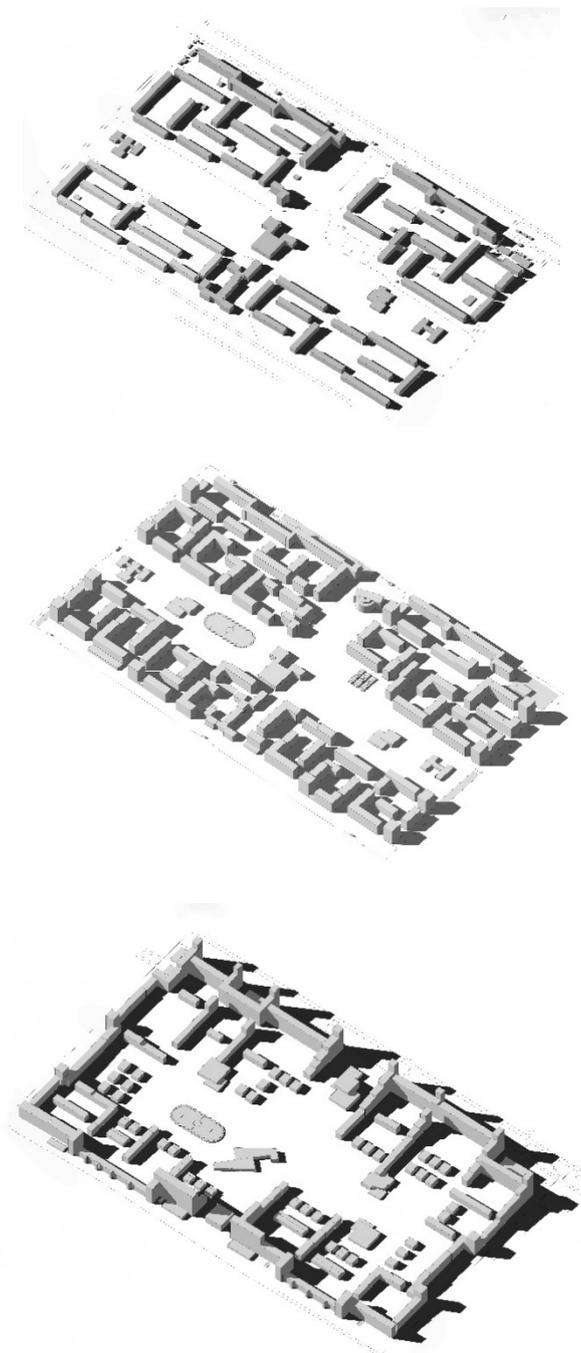
An important condition in evaluation of external and internal baseline states is the significance of the spatial and planning links of the microdistrict. (See Figure 3-5.) At the present stage, the transfer of transit traffic from the main street Rosa Luxemburg to the Novo-Lenino planning area creates the potential for increasing business and social activity with the construction of a linear spatial center of the microdistrict. Linear and nodal elements of the main planning frame can be used to form special multifunctional urban planning complexes that provide social and spatial identity of the urban environment. The economic, social and urban planning effect of the "secondary" use of spatial resources of the main-communication frame of urbanized territories is an important resource for the microdistrict development. [Herman A. 2016]

In Siberian regions the process of renovation of mass housing estates is delayed due to the inactivity of management decisions, the lack of regulatory frameworks, urban planning practice as well as the motivation of developers. In Novo-Lenino district, the predominant part of the development was built up at the beginning of industrialization period, when the most widespread type of housing was 1-335 series. In comparison with later types of housing, this series is significantly outdated, that made it possible to replace buildings with modern types of housing while preserving the spatial identity of the whole microdistrict.

## **3. Methods, values, instruments**

As part of a semester project of master degree at Irkutsk National Research Technical University, students were given a task to modernize the space of microdistrict considering the existing development context, using the standards of territory development (Table 1), and to use the unique features of each project to create a conceptual solution at various scales, from flats to microdistrict. One of the microdistricts of Novo-Lenino, which was the first stage of development, was chosen as an object of experimental project. (Fig. 3)

Reflections of students are focused on the specifics of the project approach. Each project explored ways to integrate the organizational idea with the functional essence of the living environment. Instead of imposing an universal style on different conditions, the unique character of the project becomes the starting point for the architectural idea.



*Figure. 3. The existing structure of residential development of one of the first microdistricts in the planning area of Novo-Lenino. Source: bachelor Sorvacheva E., 2021. (Upper) Graduate project for the renovation of the Novo-Lenino microdistrict development, which is raised in a student project. Source: bachelor Sorvacheva E., 2021. (Middle) Project proposal using the standards of territory development, 2021, development scenario of the territory with an increase of the building density (about 50% of the total area of the existing building). Source: Experimental project of a group of students. 2021. (Lower)*

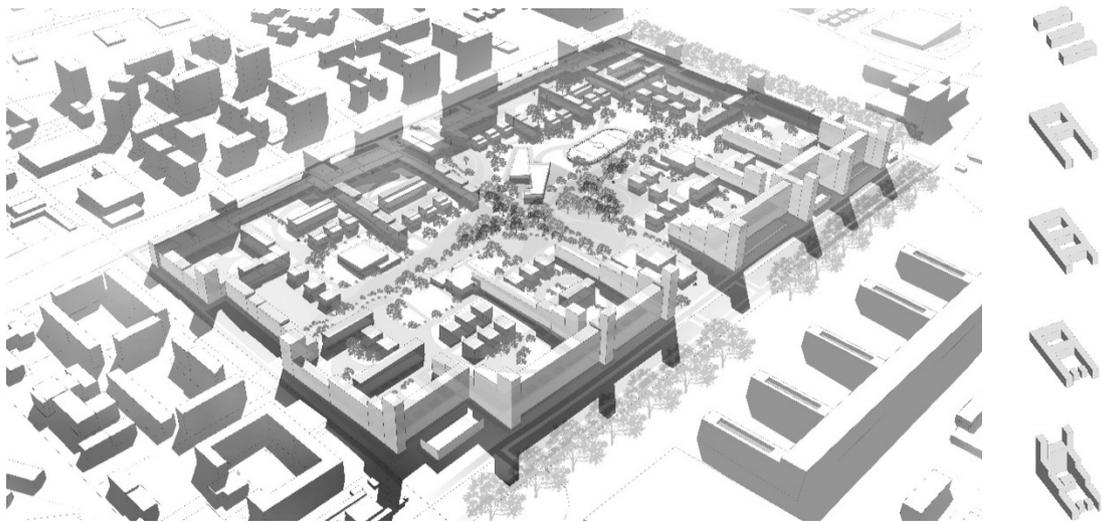
**Table 1. Comparison of the parameters of the existing situation and design concepts  
(Source: bachelor Sorvacheva E., 2021)**

Main factors	The current development of the microdistrict	Design model using the standard	Student project design model
Building area of the microdistrict, ha	26	26	26
Floor area adapted to accommodate service facilities,%	15	About 25	30
Density of the territory, thousand sq. m./ ha	4	5-8	6
Population density, people / ha	202	300-350	320
Residential provision, sq.m. / person	20	30	35
Provision of green areas, sq.m. / person	8	10	12
Density of the road network	3	15	18

The experience of recent years at Irkutsk has shown that microdistricts as a model remain the attractiveness of forms of residential environment development. The tendency in the placement of various types of low-rise dwellings on neighboring plots, by using the potential of the service and social infrastructure of the microdistrict, reflects the integration of different dwelling models. In the experimental project of master degree students on the topic of microdistrict modernization (Fig. 4), the main provisions are proposed:

1. Strengthening the spatial identity of the microdistrict: increasing the number of storeys and multifunctionality of buildings on the periphery of the microdistrict (on average, up to 100 square meters per floor);
2. Implementation of a typological diversity of dwellings, taking into account the preservation of some existing buildings during their major repairs and the microdistrict living environment, based on the opening of courtyards to a common square and excluding traffic inside the microdistrict.
3. Implementation of new models of dwelling with variable number of storeys, which is based on large-panel housing construction with flexible production technology and uses a variable layout of apartments. To show the structural transformation of architectural planning models of residential complexes.
4. Create a new landscape for the Berezka microdistrict park; identify areas for collective and private use in residential yards.
5. Provide not only a comfortable and convenient living environment, but also separate the meanings and terms of individual and public space based on a combination of different scales and typologies of dwellings.

The sequence of changing in morphotypes development is presented as an internal process of modeling the space of a microdistrict at various scale levels, in which morphotypes are the spatial basis for the formation of residential units. The study confirms that the morphology of the microdistrict space influences on the creation of internal spatial and social connection of the microdistrict residents. (Fig. 5) Based on the logic of design and analytical solutions and discussions in the master degree student project, the basic models of mass housing and morphotypes of the existing building were analyzed, which constitute the main task of spatial and planning transformation. (Fig. 6)



*Figure. 4. Project proposal for the modernization of the microdistrict development  
(Source: bachelor Sorvacheva E., 2021)*

At the 1980s, along with the image concept, the concept of city identity was established. The features of the mass housing architecture were its neutrality, the idea of equal opportunities and conditions, which were repeatedly criticized and accused of monotony. During the modern structural transformation the Novo-Lenino district is characterized by the process of polarization of the placement of various service facilities, mainly on the city road Rosa Luxemburg st. and the parallel road of district level – Bauman st. Identity is established and developed through individuals, which reflect the processes of practice and activity within society itself. Identity formation follows communication in society [George Herbert Mead, 1973]. The concentration of service facilities influences on a change of pedestrian connections between microdistricts, systematizes people's ideas about the architectural space. [Krashenninikov A., 2020]

Projects of master degree students on the topic of microdistrict building modernization in the Novo-Lenino district consider the involving of funds from federal and regional programs, as well as residents. (Fig. 8) The primary element of public space is overflowing of residential courtyards, which contributes to the formation of an understandable, healthy and safe living environment. The inner square and the pedestrian boulevard of the microdistrict have retained their social attractiveness, despite the new centers formation of activity on the main roads.

The following building transformation tools are being developed:

- complete demolishing of residential buildings and the construction of new residential buildings, partial demolition with a reduction in the number of residential sections, reduction of the number of storeys to 3-4 floors, terracing, expansion of loggias of residential buildings.
- preserving the existing large open spaces and transformation of the landscape with participation of residential cooperatives in courtyard and common areas in order to create places of public activity and "green oases" in the courtyards.
- priority of pedestrian traffic in comparison with transport.

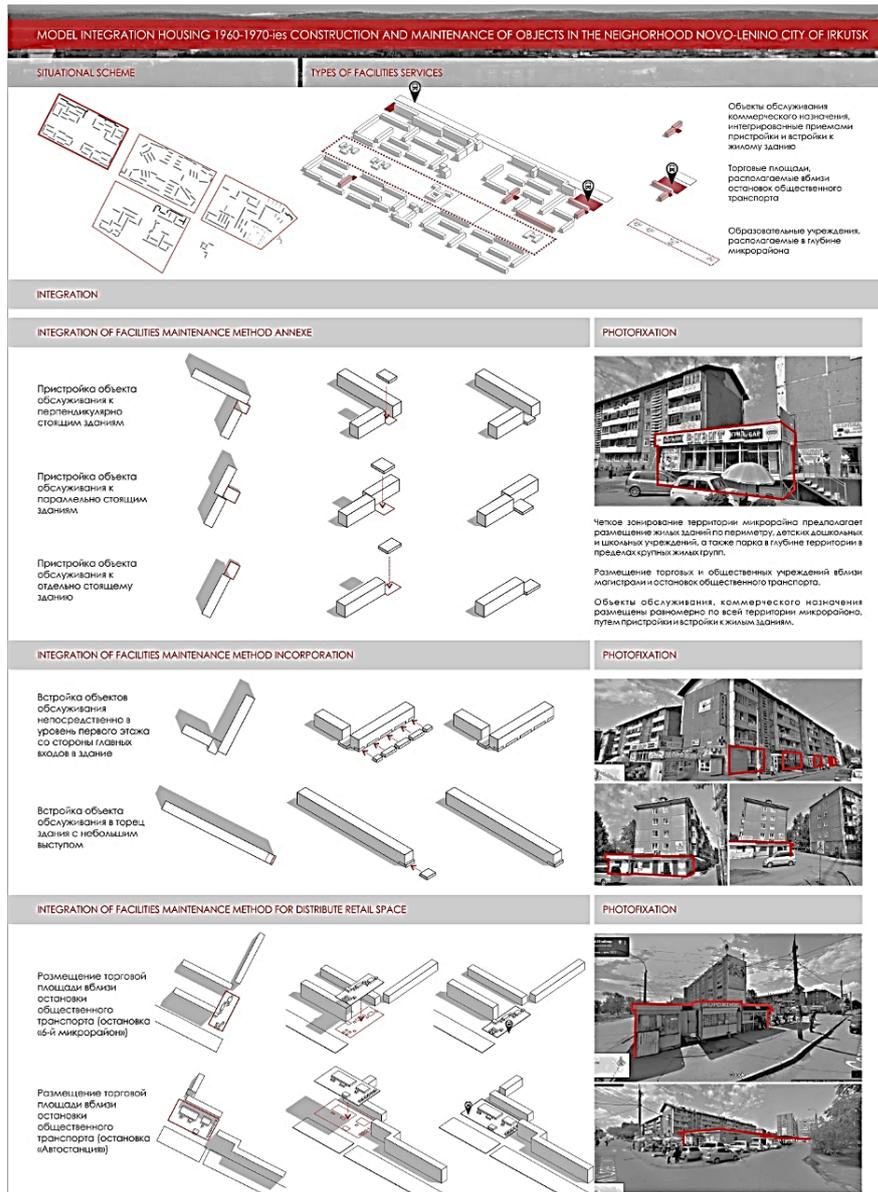


Figure. 5. Integration of service facilities into the structure of residential development on the example of Novo-Lenino (Source: master's student Latypova T., 2018)

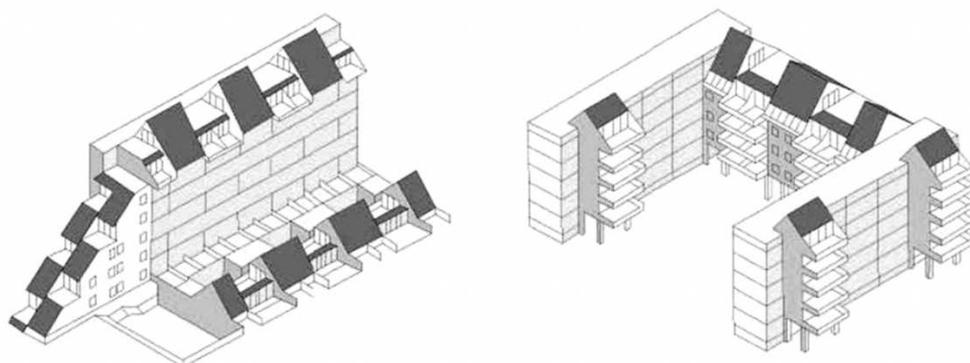


Figure. 6. Methodological methods of modernization of the basic elements of mass residential development of residential neighborhoods (Source: STO RAASN 01-2007 "Reconstruction and modernization of the housing stock. Toolkit")

## 4. Conclusions, discussions

Microdistricts are becoming priorities for resettlement in modern regional centers in Russia and are the object of research in modern urban planning science. At the same time, the regional practice considers the processes of the modernization and social infrastructure as an integral part of the activities of private business structures in the housing market.

The research project of master degree students is focused on the perspectives for the modernization of microdistricts. The key trends in the transformations of the last decades of mass development in the structure of microdistricts include the following issues for further microdistrict perspectives:

- compaction of buildings by construction new high-rise buildings on the highways.
- expansion of service functions on main streets and "polarization" of public spaces in accordance with their typology.
- articulation of private and public space in the formation of residential micro-groups.
- changes in the function of courtyards due to the growth of amount personal transport and the priority of pedestrians.

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## FACING POST-SOCIALIST URBAN HERITAGE

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