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INTERNATIONAL ACADEMIC CONFERENCE

WISE CITY
THEORY AND PRACTICE

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CONFERENCE ABSTRACTS*

Friday, May 12th 2 0 2 3

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1st S E S S I O N 10.10 – 11.50
Warszawska street, No. 24, "Kotłownia" building

Moderators: **Prof. dr hab. inż. arch. ANNA AGATA KANTAREK**, Cracow University of Technology, AUPC PAS; **Prof. D. Sc. Ph.D. Arch., CARLOS MARMOLEJO DUARTE**, ETSAB Universitat Politècnica de Catalunya; **Prof. dr hab. inż. arch. KRYSTYNA SOLAREK**, Warsaw University of Technology, AUPC PAS

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The order of abstracts is consistent with the conference program.

Prof. arch. MARIO CERASOLI,
Roma Tre University;

The historical urban heritage in the post-pandemic Era. Challenges and opportunities

Prof. dr hab. inż. arch. SŁAWOMIR GZELL,
Warsaw University of Technology, AUPC PAS;

The City is to be Wise, but what about us?

Dr hab. inż. arch. WOJCIECH KORBEL, prof. CUT,
Cracow University of Technology, AUPC PAS;

Instruments of operational urban planning in Polish building code of 1928 - a forgotten legacy

In 1928, the President of Poland Ignacy Moscicki signed an Ordinance on building code and the development of settlements. Since Poland regained its independence in 1918, this act became the first universally binding law, creating a modern system framework, shaping the spatial order of the reborn country, uniting the previously separately administered areas of the Russian, Austrian, and Prussian annexations. In February 2023, 95 years have passed since the announcement of these regulations.

Author's research analyzes the system solutions adopted at that time. Their scope focuses particular attention on the issue of instruments aimed at ensuring proper spatial development and the possibility of creating a high-quality urban environment. These instruments, nowadays referred to as tools of operational urban planning, are tools for the realization of visions, intentions, plans, and concepts in shaping local space.

At the same time, the work addresses the problem of the ongoing discussion in Poland about the necessary directions of changes in the national spatial planning system, including the range of necessary tools serving the formation of urban space.
Against this background, the confrontation of the solutions introduced in 1928 with those contained in the current Polish legislation, seems to be a valuable research activity. Especially since this confrontation is currently little reflected in the scientific research that has been carried out.

Thus, the aim of this work is to identify the systemic solutions of the interwar period, referred to as operational urban planning tools, and to compare their scope to the regulations functioning in contemporary Poland.

The study proves the meaning reversal of some important concepts and ways of thinking in shaping the local space that has been made over the years.
The analysis of historical regulations may therefore be an important element of the discussion on the directions needed for the modern reform of the spatial planning system in Poland, indicating the need to return to the solutions identified in the study as a forgotten legacy.

Prof. arch. KARIN HOFERT FEIX,
ETSAB, Universitat Politècnica de Catalunya, Spain; Politecnico di Milano;

Strategies to improve the public spaces in Barcelona

IVOR SAMUELS, AAdipl, M.Sc. ARB, MRTPI, Honorary Senior Research Fellow,
Birmingham University, ISUF;

Time to ditch the greenbelt?

The greenbelt has been an iconic device of urban planning for the last century. Although historically belts of unbuilt land around cities have been protected for defensive reasons it was proposed by Ebenezer Howard at the end of the nineteenth century as a fundamental element in his proposal to rectify the harms of industrialisation by creating garden cities. It was adopted enthusiastically after World War II in Britain and now occupies 1.6 million hectares or 13% of the land surface of England surrounding 14 towns. Although the concept of the greenbelt community was an anathema to the modernists who dominated the post war reconstruction because “they were worthy, healthy, organic and boring quasi-suburbs”(Sennett) they have remained part of the urbanist’s palette until today and it retains its hold over politicians, even those who regard planning as an obstacle to providing sufficient housing . The threat of relaxing greenbelt policies caused unexpected losses in recent local elections with the result that the current government is firmly committed to greenbelts in spite of being free market and anti planning by conviction.

The most extensive greenbelt is around London but this paper examines the experience of the greenbelt around Oxford and considers how it has impacted on this city of 150,000 inhabitants which is now the most unaffordable for housing in Britain. Because of this half of the workers in the city are obliged to commute from small housing developments (called “cow pat development”) by car because they are too dispersed to be served by public transit. The resulting congestion of the road system has resulted in unacceptable levels of congestion, with long travel times and high pollution levels. As an attempt to resolve these problems local measures such as a park and ride system have been introduced and more recently the “15 minute city” and the highly contested Low Traffic Neighbourhoods (LTNs) which have caused violent protests. This experience indicates that the Wise City should seek forms of development which would avoid the manifest disadvantages of greenbelts even though they remain part of the conventional wisdom of contemporary urbanism.

Dr inż arch. BARTLOMIEJ HOMINSKI,
dr inż arch. FILIP SUCHON,
mgr inż arch. PhD Candidate KAROL WAWRZKIEWICZ,
Cracow University of Technology;

Age-ready Urban Resilience. Architectural and structural study of senior housing with volumetric modular technology

The aging of cities around the world is an inevitable phenomenon. For the first time in history, more people aged 65 or older than children under five. As a result, urbanization and aging will intensify over the next three decades. Thinking proactively and investing intentionally in planning and designing cities with an age-ready future is vital. In this context, the key emerging areas are universal design, housing solutions, multi-generational spaces, physical mobility, technology, and effective spatial forms – with adaptive and inclusive design. The authors investigated by "research by design" the possibility of using volumetric module technology. The study was developed in collaboration with a leading manufacturer of modular architecture in Poland. The authors considered the issues arising from the technology, shipping and assembly of modules and the specific features of building friendly to older adults. A catalogue of the advantages and disadvantages of volumetric prefab for use in senior housing was compiled. A review of the best housing solutions for seniors carried out during this research, in line with a literature review, has shown that no less important than the housing unit itself (the flat) are the solutions for common areas in a building. These should provide opportunities for older adults to establish and maintain social contacts and thus fulfil their psychological and social needs.

Dr hab. inż. arch. TOMASZ BRADECKI, prof. PŚ,
Silesian University of Technology, Gliwice;

Dr inż. arch. BARBARA UHEREK-BRADECKA,
Academy of Silesia, Katowice;

Wise senior housing estates - challenges, opportunities, and threats – on the basis of research on contemporary case studies

One of the challenges of the 21st and 22nd centuries is the ageing of the population and the problem of providing seniors with a decent place to live. Housing estates can be considered as a special element of the development of urban resilience. Concern for the housing environment for the elderly is increasingly evident both in theory in numerous scientific studies and in practice, which is reflected in modern realizations. Residential centers for seniors are becoming increasingly popular, and its form and function are becoming more complex and dedicated to specific needs. The authors present the results of the study of a dozen different cases of housing and residential complexes with a healthcare function for the elderly realized after 2009. Complexes with a significant area (exceeding 0.5 hectares) were selected, which were published and evaluated in architectural terms. A quantitative comparative study has been conducted: spatial forms and utility programs were compared, and the relationship of senior complexes to their surroundings was assessed. The authors put forward the thesis that contemporary realized complexes for seniors are characterized by a diverse morphology: in some cases, they duplicate the structure of the urban fabric, and in others they clearly cut themselves off from it and create individualized forms. Challenges, opportunities, and threats related to the set issue were presented. A discussion was held on possible other evaluation criteria, and it was indicated which criteria should be considered relevant to the challenges of the future and the model wise senior housing complex. In the qualitative assessment, the advantages and disadvantages related to the morphology of the teams were taken into account. Authors also presented their own individual design as an experiment of implementation of current trends in a set location (research by design). Conclusions of the research may be useful in the study of other senior centers, making location decisions for similar ‘wise’ functions.

Dr hab. HANNA GRZESZCZUK-BRENDEL, Prof. PP,
Mgr inż. arch. ADRIANNA BRECHELKE,
Poznań University of Technology;

The historical spatial and functional structure of Kołobrzeg and the city's contemporary urban challenges

Kołobrzeg is a medium-sized seaside town which, owing to its spa and tourist assets, was dubbed the pearl of the Baltic during its period of greatest development. Developed since the 19th century, the resort is, together with the port and the city centre, part of a three-part functional-urban structure that organizes the space. The networked nature of the urban tissue constituted a palimpsest of users' experiences and needs. Despite the massive destruction in 1945, and the post-war reconstruction of the city in the modernism movement, the urban structure of the city has remained recognizable. However, the new needs of the inhabitants determined changes in the functional structure. The coinciding system transformation in Poland led to the dynamic development of tourism and consequently to the uncontrolled growth of the development of the coastal belt and suburban wetlands, disturbing the balanced urban network structure. Studies of the historical urban fabric have captured not only the sustainability of the urban structure, but also its flexibility. Therefore, the correlation of the historical network layout together with contemporary solutions flowing from the smart city concept can lead to a spatial and ecological balance that exploits the tourism and health resort potential.

Dr hab. inż. arch. JUSTYNA MARTYNIUK-PĘCZEK, prof. GUT,
Gdańsk University of Technology, AUPC PAS;

Reflective practice in urban design

Friday, May 12th 2 0 2 3

2nd S E S S I O N 12.20 – 13.40
Warszawska street, No. 24, "Kotłownia" building

Moderators: **Dr hab. inż. arch. ANNA FRANTA, prof. CUT**, Cracow University of Technology; **Prof. arch. KARIN HOFERT FEIX**, ETSAB, Universitat Politècnica de Catalunya, Spain; Politecnico di Milano; **Dr hab. inż. arch. JUSTYNA MARTYNIUK-PĘCZEK**, prof. GUT, Gdańsk University of Technology, AUPC PAS

Prof. dr hab. inż. arch. ZBIGNIEW W. PASZKOWSKI,
West Pomeranian University of Technology, AUPC PAS;

Paradigms & Morphogenetic Urban Development

Dr hab. inż. arch. MATYLDA WDOWIARZ-BILSKA, Prof. CUT,
Cracow University of Technology;

City Intelligence and Spatial change

Urban spaces are increasingly reflecting the rapid development of ICT and the associated smart city concept. Networking, Artificial Intelligence and the Internet of Things form the backdrop against which the city and its inhabitants live and work. The smart city approach is the most comprehensive concept of urban development. This article discusses different approaches to the problem of the relationship between modern technology and increasing the intelligence of the city. The aim of the article is to present and test a typology of elements, urban details, services that result from the presence and development of ICT technology. In this way, the answer to the question of whether and how the infrastructure that fits into the concept of the smart city is visible in its space will be given. This is an important question because silent technology is irreversibly inscribed in the fabric of the city, creating another dimension of its functioning. Thanks to technology, new opportunities and services are opening up for residents. This continuous, progressive, and sometimes surprising process, significantly accelerated by the Covid pandemic, contributes to the transformation of the social, functional, and spatial spheres of the city. The performance of a number of daily human activities remotely via networks is reflected in public space. The changes in interpersonal contacts and habits related to online life will translate into a new approach to understanding the quality of urban space, its functionality and accessibility for different users. The example of Krakow will be used to illustrate the problem.

Dr inż. arch. KAROLINA DUDZIC-GYURKOVICH,
Cracow University of Technology;

Exploring the centrality measures in the urban green areas network in the city of Kraków

Dr inż. arch. DAMIAN POKLEWSKI-KOZIEŁŁ,
Dr inż. arch. MARCIN GIERBIENIS,
Cracow University of Technology;

Revitalization of the market square in Trzebiatów in the context of environmental conditions

How to effectively implement resilient city strategies in the context of transformations within the historic city center? The speech is a presentation of the distinguished competition concept for the development of market square in Trzebiatów. The concept assumes an attempt to recreate the city's unique genius loci by eliminating the negative effects of the transformations introduced in the post-war era, mainly in the area of transport changes, which nowadays creates an opportunity to return to the times when the market square was an important part of public and social life, as a place of trade, meetings and relaxation.

The overarching design assumption was the implementation of the concept of the "sponge city", a concept strongly rooted in scientific discourse in recent years. This is an approach that meets the challenges of climate change by implementing the principles of sustainable water management. The concept aims to reduce the negative effects of torrential rains, local floods caused by them, and heat islands occurring in cities. They can be reduced by moving away from the paradigm of paved surfaces in favor of a reasonable balance between these surfaces and permeable one. The idea allows for the improvement of the microclimate, which may be one of the important factors in the psycho-perceptible improvement of the attractiveness and quality of the market square.

Dr inż. arch. NATALIA GORGOL,
Cracow University of Technology, Poland;

Wise city – smart city? Green infrastructure as a strategic feature of smart urban form on selected examples

Background

Nowadays, in the age of cities, a wise city is strongly needed. May a smart city be a wise city? As highly popular as the smart city concept may appear, the significant role of the urban form in its implementation seems to have not yet been sufficiently explored. The author believes that smart urban form exists and has several key elements. Among them, the green infrastructure (eg. the proportion of green areas in the urban form, the network of them, their multifunctional character) seems to be highly crucial. The paper is planned to be an investigation of the correlation between green infrastructure and its impact on a given smart city. The basis for this research are the outcomes of the author's PhD Thesis titled: 'The idea of Smart City and the urban form on selected examples.' Yet in this further investigation, there is a new scope of inquiry in which green and recreation areas are in the spotlight.

The aim and objectives of the study

The planned aim and objective of the study are to verify and, as a result, prove the significant role of green infrastructure in smart urban form as well as to reveal possible good practices to follow while erecting or transforming existing cities and smart cities.

Method

The research methodology is based on an interpretive and comparative analysis of the selected case study of smart city urban forms. Furthermore, logical argumentation is based on the analysis and synthesis of the outcomes.

Findings, conclusions, and implications

The results of the study are supposed to emphasize the need to incorporate smart urban form into designing smart cities.

PhD Candidate VALENTYN SHAROVATOV,
Kharkiv School of Architecture;

Typology of massing study and its reflection in the design of urban structures

Dr hab. inż. arch. KATARZYNA HODOR, prof CUT,
Cracow University of Technology**;**

Dr inż.arch. MAGDALENA WILKOSZ-MAMCARCZYK,
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Mgr inż.arch. BARBARA OLCZAK,
University of Agriculture in Cracow,

Dr hab. NADIJA SOSNOVA, prof. NUPL,
Lviv Polytechnic National University;

Reflections on the absorptive limit of the development of the cultural landscape of villages soak up by post-socialist cities on the example of Bronowice (Krakow, Poland) and Znesinnya (Lviv, Ukraine)

Friday, May 12th 2 0 2 3

3rd S E S S I O N 15.10 – 16.50
Warszawska street, No. 24, "Kotłownia" building

Moderators: **Dr hab. inż. arch. WOJCIECH KORBEL, prof. CUT**, Cracow University of Technology, AUPC PAS; **Prof. D. Sc. Ph.D. Arch., IVOR SAMUELS**, Birmingham University, ISUF UK; **Dr hab. inż. arch. TOMASZ BRADECKI, prof. PŚ**, Silesian University of Technology, Gliwice

Prof. Dr. EMANUELE NABONI,
Royal Danish Academy, KADK; University of Parma;

Climate Change, Design Change. Enhancing Ecosystem Quality, Health and Decarbonize by Design

Prof. Dr hab. inż. arch. KRYSTYNA SOLAREK,
Warsaw University of Technology, AUPC PAS**;**

Planning green and blue infrastructure in Poland: untapped potential of urban design

Dr hab. inż. arch. KATARZYNA PLUTA, prof. PW,
Warsaw University of Technology;

Resilient public spaces in the Mokotów district in Warsaw

Warsaw is a resilient city that was often destroyed, raised from the rubble, rebuilt, and developed.

The revitalization and reconstruction of urban spaces in Warsaw take place out of concern for the wise development of the city, based on its creative continuation, local cultural patterns, and with respect for the natural and cultural heritage.

In counteracting military, natural, social, and epidemiological threats, an extraordinary role is played by public spaces, which are shaped as resilient and sustainable urban spaces. The revitalization projects of public squares, streets and pedestrian routes in Warsaw are diverse. However, these solutions are original comprehensive spatial compositions that create a new identity of a given place based on its existing characteristics.

The article presents the processes of revitalization and reconstruction of selected public spaces in the Mokotów district from the beginning of its functioning as a city district until modern times.

The study area of Mokotów is precious for the development of Warsaw's spatial structure. However, at the same time, it is difficult to shape appropriate spatial solutions where there is a deep need to reconcile the protection of natural resources and cultural heritage with new solutions and needs of a modern and dynamically developing city.

Prof. PhD. Arch. ADOLFO SOTOCA GARCÍA,
DUOT ETSAV UPC Barcelona;

NDVI roots in Urban Planning. The Barcelona eastern delta case, 1956-2016

Dr inż. arch. BARTŁOMIEJ BUŁAWA,
Inż. arch. JUSTYNA ZAJĄC,
Academy of Silesia, Katowice;

The urban development as a spatial continuum of the historic town center: the alternative to urban sprawl and "no context" development. The case of the town of Prusice, Poland

The scientifical problem addressed concerns the spatial development model for a historical small town in the context of new economic development opportunities. The problem was analyzed on the sample of the town of Prusice in the municipality of Prusice in Lower-Silesia voivodeship in Poland. The new development conditions resulted from the construction of the S5 expressway linking Prusice to Wrocław and the designation of a large (at the scale of the town) "Economic Activity Zone" area. This zone with the area of circa 4 square kilometer and 4 kilometer long was located between the town center of Prusice and the S5 road, which bypasses the town.

The research was conducted as a "research by design" method. Students' works made during the course "Integrated Architectural-Urban Conservation Project" in the academic year 2021/2022 were the research material. They were a part of the cooperation between the municipality of Prusice and the Academy of Silesia. The cooperation resulted also the students' competition, where the best ideas developed during the semester with the active participation of municipality, were awarded by the municipality of Prusice. The design proposals as a various development model of the spatial structure of the city of Prusice resulted with main postulates and recommendations for the town's spatial development. The result was used by municipality for purposes of prepared new study on the conditions and directions for spatial development of the municipality.

The study's main findings include creating a multi-functional urban space in the town center is crucial to improve the quality of life in the city, especially in the context of economic growth. Linkages of the existing small block structure of the historic center with new multi-functional buildings and resolving the "joints" between different urban structures are crucial. Additionally, the creation of a clear "new" urban complex as a buffer between the historic center and the industrial-business zone is an alternative possibility. Additionally, the existing development of the specified area at the height of the city center precludes a uniform use as industrial areas, so they were conceptually located antipodally "before" and "behind" the center, looking at the course of the expressway. Industrial zones

should have a planned regular transportation structure with the possibility of long-term development, including to the south of the expressway, using existing crossings. The representative entrance areas with functions serving both residents and users commuting via the expressway were recommended. This will enhance the city's status and perception when entering the city as well as enforcing the quality of the landscape in the municipality.

Finally, the strong linkages between historical urban fabric (the center) and adjacent areas were recommended as a way of economic and spatial development of the town and possible alternative to urban sprawl. This would allow balancing economic growth with the sustainable development based on the idea of a compact city and protecting natural areas and landscapes from dispersed development.

Prof. dr hab. inż. arch. AGATA BONENBERG,
Poznań University of Technology, AUPC PAS;

Towards sustainable living environment. Acceptance level of mycelium material in architecture.

Dr inż. arch. AGNIESZKA WŁOCH-SZYMLA,
Cracow University of Economics;

Urban heritage of modernist housing estates and their contemporary potential in the structures of the city

Urban heritage of modernist housing estates in urban development and housing development has experienced a process of permanent adaptation to the requirements of current social needs, environmental requirements, and spatial planning conditions. In Poland after the fall of communism, housing development has gone a long way of unwanted and uncontrolled transformation. However, currently there is a tendency to return to the estates dating from the times of the communist era. Buildings from this period are very often located near old city centers and are well-connected with other districts of the city. They are well-equipped with social and service infrastructure and have a lot of freely accessible green recreational spaces. The study refers the legal possibilities of transforming housing estates to the current needs of sustainable development. It turns out that the spaces of multi-family housing estates, built according to the regulations in force at that time, meet the contemporary needs of residents. These spaces also have a great potential to implement the principles of sustainable development of housing estates.

The main objective of this work is to offer answers to the following questions:
What is the potential of the urban heritage of modernist housing estates in the contemporary structures of the city? What are current qualitative requirements with regard to the spatial and social conditions of “socialist” housing estates? What extent do “socialist” housing estates meet qualitative requirements resulting from sustainable development? Finally, can modernist housing estates be an inspiration and creative continuation in the contemporary city?

The undertaken issue of modernist housing estates, both its theoretical and empirical aspects, deserves attention because this area has not been widely explored and it is viewed from the perspective of many stereotypes which should be verified in different spatial scales and using various research methods. The process of changes in the modern housing estates, the image of such estates and their social perception and their position in the spatial structures of cities are of key significance to their future in the context of their share in cities’ housing resources.

Dr hab. inż. arch. ANNA BAĆ, prof. PWr,
Wrocław University of Science and Technology, AUPC PAS;

Didactics for smart cities – academics perspective

The article addresses the issue of an educating architecture students on how to design wise cities. Wise, meaning responsive to current global issues and adaptable to broader changes. Sustainable, adaptive, resilient, and regenerative approaches to architecture and urban design requires changes in teaching methods. The author's method and the results achieved through it will be presented.

In recent years, major problems have emerged regarding students position in the education process. They have unlimited access to the knowledge without being able to understand and feel the difference between truly sustainable architecture and so-called greenwashing. Because of the lack of own value system. The second problem is the lack of open communication skills on both sides – students and teachers.

By establishing a Living Transdisciplinary Laboratory of Sustainability – GreenLab we are able to better teach smart city design. Understood as smart solutions made by wise people. The GreenLab is about green design technology such BIM and a high level of awareness.

More than 20 years of experience as the teacher let the author to an assumption, that teaching is about helping each student find their own mastery. The teacher's role is to help students create their own values system and to challenge them at the highest level, by training their communication and time management skills. The teacher's responsibility is to support students and create a save space for them to grow and shine.

The GreenLab is based on a transdisciplinary teaching and learning process. In addition to the leader - teachers outside the Faculty of Architecture are invited. Guest specialists are: sustainable design practitioners, landscape and smart city designers, an accessibility expert, an HVAC engineer, an energy efficiency and LCA calculations evaluator, a structural engineer, a technician.

During the studio a conditions of a group activity and dynamics are followed. Group dynamics strategies are used: getting to know each other, defining roles and responsibilities, integrating the team, ensuring open communication, paying attention.

The teaching approached is based on a Action Research & Service Learning. Interactive teaching and learning methods, such as Design Thinking, Learning by Doing and Design by Research are used. Non-violent communication, sharing and feedback technics occur. In order to better understanding and internalization of knowledge by students, their first step is to study the given know-how which is followed by question-and-answer sessions. This is called – up side down,

instead of an ex cathedra lecture. Time keeping and time management plays the great role here.

Each group of students has to establish its own Code, such as Mission & Vission and Risk & Concerns, which are followed during the whole semester.

So far the methodology is very successful. Students have received many awards.

Prof. dr hab. inż. arch. AGATA BONENBERG AUPC PAS,
Dr inż. arch. AGNIESZKA KASIŃSKA-ANDRUSZKIEWICZ,
Mgr inż. arch. EWA ANGONEZE-GRELA,
Poznań University of Technology;

Ecological District of Innovation and Technology in Poznań (EDIT Poznań) – strategy and pilot studies.

Currently, smart cities are entering the fourth-generation stage, i.e. Smart City 4.0. It assumes the use of advanced technologies (Smart City 1.0), involvement of public administration (Smart City 2.0) and activation of civil society (Smart City 3.0). It focuses on achieving the goals of Sustainable Development UN (SDG). Moreover, smart city 4.0 assumes close cooperation with the public and private sectors. The aim of this cooperation is obtaining new and more effective forms of financing. The pilot project named „Porto Alegre Sustainable Innovation Zone", was a harbinger of this type of action. This project was carried out by the international organization Global Urban Development in the capital of the Brazilian state of Rio Grande do Sul, starting in 2015. Its task, among others, was to engage the creative potential of the academic community to create innovations. And on the other hand, engaging the private sector and NGOs for their implementation. Taking into consideration challenges facing the smart cities of the future, Faculty of Architecture, Poznan University of Technology established cooperation with GUD and researchers from the Federal University of Porto Alegre, to have opportunity to use their experience of this experiment. This cooperation consists of regular online meetings with members of the project. The part of the cooperation is the visit of the CEO of Global Urban Development, Marc Weiss, scheduled for May 2023 in Poznań. As a result of these actions, in Poznań was created the initiative, named Ecological District of Innovation and Technology (EDIT Poznań). It gathers employees of the Poznań University of Technology and the University of Adam Mickiewicz. Recently, it focuses on building strategies and carrying out pilot projects carried out during academic classes at both Poznań universities. The task of EDIT Poznań is to intensify innovative and pro-ecological activities in the designated area of the city and to strengthen the climate awareness of the inhabitants of Poznań. The aim of the research is to review and present the recent achievements and to present the results of a survey conducted among users of the nearly zero-energy building of the Faculty of Architecture and the Faculty of Management Engineering of the Poznań University of Technology.

Saturday, May 13th 2023

4th SESSION 10:00 – 11.50
Warszawska street, No. 24, "Kotłownia" building

Moderators: **Prof. dr hab. inż. arch. ANNA JANUCHTA-SZOSTAK,** Poznań University of Technology; **Prof. Dr. EMANUELE NABONI,** Royal Danish Academy, KADK; University of Parma; **Prof. dr hab. inż. arch. MATEUSZ GYURKOVICH,** Cracow University of Technology

Prof. dr hab. inż. arch. PIOTR LORENS,
Gdańsk University of Technology, AUPC PAS;

Flexible planning. Local government experiences

Dr hab. inż. arch. KINGA RACOŃ-LEJA, prof. CUT,
dr inż. arch. KRZYSZTOF BARNAŚ,
dr TOMASZ JELEŃSKI;
Cracow University of Technology;

Leveraging late-twentieth-century standardised housing technology in the struggle against climate change

In a world where climate change changes energy usage patterns and fossil fuels have become a tool of exerting political pressure, it is imperative to find ways to slash energy demand across all sectors of the economy. One of the means by which this can be achieved in the housing sector is by leveraging standardised, prefabricated housing from the 1960s and 70s, whose architectural and urban features allow for their comprehensive thermal retrofitting, leading to predictable energy efficiency outcomes. Our study presents the findings of the Green Neighbourhood research project, which explored how a 1970s panel-block multi-family residential building located in Krakow, Poland, can be subjected to thermal retrofitting and accessibility-focused remodelling, accompanied by a renewal of greenery in its general vicinity. The retrofit included elements of the RESHeat system as well as Nature-Based Solutions, which, together with accessibility enhancements, were assembled into packages which were then assessed in terms of cost and energy savings. The building for which the solutions were prepared for had been selected using an original identification method that incorporated Geographical Information System (GIS) software, urban morphology analysis, architectural analysis, social analysis, and the TOPSIS multi-criteria decision-making support method. It was found that the most extensive solutions package had a prohibitive return on investment period when compared against construction work and energy prices from late 202 but nevertheless offered a significant improvement in overall energy efficiency and accessibility. The approach proposed can, to a degree, be used to identify typical historical buildings whose energy retrofit may yield the highest energy savings while using solutions that can realistically be termed as standardised.

Prof. dr hab. inż. arch. ANNA KANTAREK,
Cracow University of Technology, AUPC PAS;

Temperate City

The Latin concept of temperantia (temperance) is a theme of reflection on the condition of contemporary cities and our efforts to make them better.
The term is associated with the concept of virtue or otherwise efficiency, rooted in European culture, and referred to the conformity of actions to accepted principles or such actions that are effective. Temperantia (temperance) as one of the cardinal skills has its origin in Greek culture.

The article poses a series of questions that may help to realise the extent to which our actions related to shaping the built environment are likely to be the basis for a realistic approach to the proposed development.

Despite pessimistic predictions about the twilight of cities, contemporary cities are growing at a remarkable pace. Today we are witnessing the creation of multi-million organisms, and often our reflection does not keep up with the processes of urban growth or decline. Too often, the construction of new living environments is the result of unrealistic ideas or biased political decisions. Too often our actions are not so much about the design of a new space as they are about the need to repair an already realised one. Increasingly, too, it is revitalisation processes that are the key to rational action.

Certainly, a Wise City is one that is the result of actions that are not only temperate, but also prudent (Latin: prudentia), just (Latin: iustitia) and courageous (Latin: fortitudo). Reflecting on temperance is a simple consequence of thinking in terms of equilibrium, which is understood as emphasizing balance in actions. This is a proposition of actions in a different perspective of thinking than sustainability – not focusing on a long-range goal or vague principles of prospective good, but on possible states of balance.

Prof. YURIY KRYVORUCHKO,
Zaporizhzhia Polytechnic National University,

Dr hab. inż. arch. BOGUSŁAW PODHALAŃSKI,
Podhale State Vocational University in Nowy Targ;

Urban design in the context of warfare and natural disasters

Is contemporary urban planning resilient to the scale of observed war damage? Are contemporary designed spatial structures able to withstand the effects of war? Ideal cities were designed taking into account the potential destruction resulting from warfare. Modernist cities did not take these problems into account at all, but were they? Maybe Le Corbusier was right to leave very large distances between buildings as green spaces? Should the aftermath of recent earthquakes indicate the need for a new look at current trends in the design of urban structures? The article is a first attempt to find probable answers to the questions posed.

Assoc. Prof. Arch. MARCO LUCCHINI,
Politecnico di Milano;

Can Continuity Between Housing Design and Urban Spaces Stop the Urban Crisis? The Study Case of Milan

Prof. Dr. MICHAEL PETEREK,
University of Applied Sciences Frankfurt;

Cultural Heritage and Protection of the Environment in the Urban-Rural Nexus: the Community-Based Tourism Approach for the Cu De River Valley in Da Nang, Vietnam

With regards to the processes of global urbanization, cities and their surrounding regions cannot be seen separately anymore, but only in an adequate consideration of the systemic urban-rural nexus. Therefore, the objective of the research project "emplement! Empowering Urban Regions for Implementation and Resilience Strategies Considering the Urban-Rural Nexus", which is funded by the German Federal Ministry for Education and Research (BMBF) from 2019 to 2025, is to develop transferable tools and the needed capacities that enable administrations and relevant stakeholders in the city of Da Nang and the adjacent Quang Nam Province in Vietnam to implement existing strategies and plans into practical, efficient and sustainable measures that interact synergistically on a city-regional scale. Both at the planning and the practical level, the emplement! project thereby focuses on the following four fields of action: tourism, agriculture, industry, and built environment.

Within the larger consortium of the emplement! research partners, both from Germany and Vietnam, Frankfurt University of Applied Sciences has taken the lead in the action field of a sustainable, community-based tourism (CBT), scientifically accompanying a CBT pilot project in the Hoa Bac commune and along the Cu De River valley in Da Nang. The goal is a culturally adapted and ecologically sensitive tourism that brings with income security, socio-economic improvements and a resilient infrastructure. In general terms, CBT is considered an integral part of sustainable tourism due to the affinity of its principles with the pillars of sustainability. CBT initiatives are focused on community and economic empowerment, preservation of cultural heritage and protection of the environment as well as biodiversity.

Dr inż arch. DOROTA WANTUCH-MATLA,
Cracow University of Technology;

Dr SŁAWOMIR DOROCKI, Dr RAFAŁ KROCZAK,
Pedagogical University of Krakow;

Spatial, functional and landscape changes of a medium-sized postindustrial town based on aerial photo analysis. The case of Gorlice.

The paper presents an analysis of the spatial and functional transformation of a medium-sized postindustrial city in the context of the multifaceted issue of the city's resilience to the crisis of the decline of its industrial function. The experience of becoming an industrial city and then a city from which the industrial function starts to withdraw is often an experience of social, spatial, and functional trauma. It is a kind of shock caused by the transition from prosperity to decline and unemployment and the leaving of "post-industrial scars"[1] in the city space also in its landscape (Storm, 2014). The research attempts to answer the following questions: what has been reflected in the spatial and functional development of the city and its landscape by the dynamic transformations in the industrial sector that have been taking place since the 1970s, playing out in the broad context of specific political and socio-economic conditions [1]; how is the city coping with its post-industrial legacy - are we dealing with a 'post-industrial scar' or a process of adaptation? [2]; whether the city has shown 'resilience' to the crisis and decline of local industry over recent decades [3]. The research was supposed to identify differences in spatial and landscape structure from 1966 to the present. Based on available cartographic, literature, planning, statistical and geo-information materials, an urban analysis of the spatial development of Gorlice was carried out. GIS software was also used in the study to analyze changes of the land cover based on available sets of aerial photographs taken in four selected years within the study period, as well as to calculate an coefficient of change.

[1] Storm A. (2014), Post-Industrial Landscape Scars, New York: Palgrave Macmillan.

Mgr inż. arch. JAROSŁAW PIESIK,
University of Zielona Góra;

Increasing the environmental capacity in the vertical space of the city center using vines on the example of the "Niebuszewo" district of the city of Szczecin

Dr inż arch. ERNESTYNA SZPAKOWSKA - LORANC,
Cracow University of Technology;

Exploring narratives in the city's cultural heritage. A cross-disciplinary exploration

The issue of narrative has been increasingly emerging in the discourse of the discipline of architecture in recent years. However, the direct link between architectural narrative in the 21st century and the space of the city as a palimpsest layer of built heritage, analyzed together with the perception of it by users, influencing the popularity of this space is still a research gap. The goal of the presented explorations is to develop a method for analyzing spatial narrative in public urban space, and through the use of this method to demonstrate that architectural narrative is an essential element of city space. The study is descriptive in nature, adding data and instrumentarium to the current knowledge on the "storytelling" of urban spaces. Five cases in Prague and Krakow were examined using a mixed methods approach, combining spatial-functional analysis with literature and media queries, behavioral mapping and space syntax analysis: the Marianske Namesti in Prague vs. the Small Market in Krakow, the Holesovice Town Brewery in Prague vs. the Lubicz Brewery in Krakow, and the Lennonova Zed in Prague. In the presented research, the narrative potential of the selected city spaces is associated with social potential (against exclusion), functional flexibility and characteristics of a sustainable urban environment. The analyses made it possible to identify the following types of architectural narrative: historical, contemporary, tropes, costume, and informal narrative. The method has application potential, but it is worth supplementing it with questionnaires of users' perception of space.

Saturday, May 13th 2023

5th PARALLEL SESSION 12.30 – 14.00
Warszawska street, No. 24, "Kotłownia" building

Moderators: **Dr hab. inż. arch. Kinga Racoń-Leja, prof. CUT**, Cracow University of Technology, **Prof. Dr. MICHAEL PETEREK**, University of Applied Sciences Frankfurt and **Prof. dr hab. inż. arch. AGATA BONENBERG,** Poznań University of Technology, AUPC PAS

Prof. dr hab. inż. arch. ANNA JANUCHTA-SZOSTAK (contributor inż. arch. Paulina Otto)
Poznań University of Technology;

Water-wise Polish cities according to Water City Index

The ongoing climate and water crisis is prompting cities to review their development policies in terms of reducing water-related risks and using water resources more sustainably.

The International Water Association (IWA) has developed 17 principles for water-wise cities (WWC) to encourage local governments to take integrated actions based on a common vision for managing all waters of the city. One of the goals is to ensure water is integrated into planning and design in cities to provide increased resilience to climate change, livability, efficiencies, and a sense of place for urban communities.

The Water City Index (WCI) - ranking of the efficiency of use of water resources in Polish cities has similar goals. The ranking has been developed annually since 2019, and its methodology is gradually improved. The leaders of the ranking of metropolises for the last 3 years have been: Gdańsk, Kraków, Wrocław and Bydgoszcz.

The aim of the article is to compare the assessment criteria on which the WCI is based with the 17 principles of water-wise cities, as well as to analyze the achievements of Polish cities that are leaders in the ranking. The author asks the following questions: Do Polish cities leading in the ranking meet the IWA requirements for water-wise cities? Do the evaluation criteria reflect the objectives of the ranking? What is the key challenge in the assessment improvement process?

A comparative analysis of the WCI methodology in terms of meeting the WWC requirements showed, among others, that environmental aspects are included in the Polish ranking to a very limited extent. In particular, principle 1: Replenish Waterbodies and Their Ecosystems is not reflected in the assessment of Polish cities. The results indicate that we underestimate or do not have data on catchment retention, the quantity and quality of greenery and the scale of implementation of NbS - nature-based solutions, as well as monitoring of water quality and the condition of ecosystems. There is also a lack of an integrated approach to urban water management, including databases and information flows between different city units and integration of goals. Sometimes it is not the amount of "water outlays" that determines the effects, but the synergy of activities. Unfortunately, the lack of measures is a serious methodological limitation.

A serious challenge is not only the measurability of effects, but also the unavailability of reliable and comparable data in different cities.

Dr inż. arch. KRYSTYNA ILMURZYŃSKA,
Warsaw University of Technology;

Possibilities and needs of transformation of a large housing estate in the face of demographic change and social background

The paper deals with the spatial transformations of large housing estates regarding infill development. The presented research aimed to answer the following questions: 1/ Is there a real need for new infill development? 2/ What are the reasons for the hostile reception of new investments in housing estates? 3/ How can design activities positively contribute to the existing dispute over the transformation of large housing estates? The research on the first two questions involved the analysis of planning and statistical documents and press and Internet materials. An attempt to answer the third question consisted of design analyses of a selected part of the Ursynów Północny housing estate in Warsaw. The conducted analyses show that further development of housing estates creates an opportunity to create a socially, economically, and environmentally sustainable urban organism. Sustainably transformed large housing estates would create an attractive alternative to dispersed urbanization and intensive suburban development. Inflexible formal and legal solutions and lack of balance between the process participants condition the current dispute over the densification of housing estates. Variant design analyses on an urban and architectural scale can serve as a framework for negotiations between residents, authorities, and investors regarding the shape of new investments. The specific spatial and functional proposal may also be the basis for introducing changes in legal and administrative solutions conditioning further development of housing estates. The above conclusions can contribute to determining the direction of social, research, and design activities regarding large housing estates.

Assoc. Prof. PhD OLHA KRYVORUCHKO,
Lviv Polytechnic National University;

Revitalization and reconstruction of urban spaces in the context of natural, social, epidemiological, and military threats, on the example of Lviv

In Lviv in recent years before the war, a number of reconstruction and revitalization projects of public spaces were implemented. Some of them took place in the old city and faced the problems of preserving not only the material heritage, but also the memory of the place and its transmission into the future. Interesting data was also provided by archeology, which clarified the already available information about the development of the city and also added data on this territory, which was subject to reconstruction. The availability of such data required the use of certain methods of visualizing this information in urban space.

An important point was also the consideration of multiculturalism, present throughout the entire period of the city's historical development. As well as the involvement of local residents and representatives of these cultural and national communities in the discussion of projects and the development of solutions to reflect multiculturalism in the public space of the city.

These projects took place taking into account climate change and a sharp increase in summer temperatures in the city and overheating of the city, an increase in the length of the rainless period in the region. Also, these projects were already developed under the influence of the conclusions that were made during the quarantine and forced isolation of residents. Attention to public spaces in the city became even more urgent during the quarantine, as the open public spaces of the city became open-air living rooms that provided opportunities for communication and socialization, while the usual public institutions were very limited in their functions.

Now, during the war, the role of public spaces was re-evaluated and criticized. New projects will certainly require taking into account new requirements and expectations from users regarding physical and psychological safety.

Dr hab. inż. arch. PATRYCJA HAUPT, prof. CUT,
Cracow University of Technology;

Dr inż. arch. LEA KAZANECKA-OLEJNIK,
Wrocław University of Science and Technology;

A comparative study of active transformation of public spaces on the border with commercial and cultural architectural infrastructure

Public spaces undergo a process of constant transformations resulting among others from changes in usage. Those transitory interventions can be functionally unrelated to surrounding architecture, but they can also be a way to temporarily expand space dedicated to a service provided within a ground floor of a building adjacent to a public space. Furthermore, those interventions can also be a way to generate diverse and changeable relations with surrounding public spaces or they can promote provided services and encourage potential users to come inside. Utilizing public spaces in favor of commercial usage is a well-known and established practice visible through such actions as creating summer restaurant gardens, setting people stoppers or additional stands for sold products. Nonetheless, this practice does not seem to be so often incorporated within cultural infrastructure, even though it can be beneficial for activisation of local communities and for broadening of activities offered by a given institution.

The primary goal of this research is to establish potential ways cultural initiatives can effectively inhabit public spaces to promote and broaden functional programs that they offer. The developed potential ways of propagating culture are a result of a comparative analysis between temporary transformations of public spaces, generated in relation with commercial and cultural infrastructure. Structural forms, functions, and extent of use are considered to establish commonly functioning strategies. Research is based on changes of public spaces on the border with commercial and cultural functions on the ground floor of adjacent buildings. Areas chosen for the analysis are located in centers of two major polish cities, Wrocław and Kraków.

Prof. dr hab. inż. arch. MAGDALENA ŻMUDZIŃSKA-NOWAK,
mgr inż. arch. MAGDALENA WAŁEK, PhD candidate,
Silesian University of Technology, Gliwice;

Losing Genius Loci: cultural heritage in the face of 21st-century challenges, on the example of medieval defensive objects

Dr inż arch. AGNIESZKA MATUSIK,
Cracow University of Technology;

Multi-attribute analysis of waterfront public spaces in historic core of the city. Case study of Wisła River embankment in Kraków

For most riverfront cities, their waterfront public space has simultaneously become one of the main public domains. Waterfronts, which are often protected heritage areas, constitute the identity of a city - they are its landmark. Based on the richness of their heritage, do they develop an equally wise functional offer addressed to the contemporary user of urban space?

This presentation presents the results of a study of the functional quality of the public space of the Downtown Vistula Park in Krakow. The research method made it possible to determine the level of functional complexity of the Park by defining the types of its sections in spatial-functional and historical terms, and then subjecting them to the author's multi-criteria valorization. The results of the valorization of the functional resources of the riverside public space made it possible to derive conclusions for determining the potentials and threats to the studied riverside public space.

Dr inż arch. ANNA SULIMOWSKA,
Dr inż arch. MAGDALENA KRAUSE – ŚWIERCZYŃSKA,
Silesian University of Technology, Gliwice;

Exemplary thermal diagnostics together with an assessment of the maintenance condition of selected residential buildings of the Bobrek Estate in Bytom in the context of the possibility of their modernization

The subject of the speech is the historic workers' settlements of the Upper Silesian Agglomeration, which are an important and inseparable part of the region's industrial heritage. After the closure of their parent industrial plants, they have been undergoing progressive degradation since the 1990s.

Currently, there are about 240 settlements in the Upper Silesian Agglomeration - most of them in a very poor technical condition. Some of them are large, well-organized complexes equipped with additional service and cultural facilities, forming entire neighborhoods, while others are small enclaves inscribed in the urban fabric of the city. Despite their exceptional importance for the character and shape of the Upper Silesian cultural landscape, their survival is under threat.

The detailed scope of the study included selected residential buildings within the Bobrek estate in Bytom - in one of the largest and most characteristic Upper Silesian workers' estates. The estate, which was built in several stages from 1888 until the 1920s, shows the full extent of the region's patronal construction history. Today, it is in it, as in a drop of water, that all the negative phenomena associated with the thoughtless and planless restructuring of industry, which began in the 1990s, are concentrated.

All of these factors, together with the many years of use of the buildings, the lack of repairs carried out and especially the lack of funding, have affected the technical condition of the buildings and their aesthetics.
The purpose of this study was to attempt to assess the maintenance condition of existing buildings along with thermal diagnostics based on thermal imaging surveys. The assessment of this condition appears to be crucial for determining the feasibility, scope and economic viability of their preservation and modernization. It also gives a broader view of the level of complexity of the problem related to the need to preserve valuable industrial heritage on a regional scale, and the analysis carried out gives the possibility of adopting appropriate design solutions taking into account the conduct of conservation work.

Mgr inż. arch. DARIA PAWLACZYK-SZYMAŃSKA,
Dr hab. inż. arch. AGNIESZKA GĘBCZYŃSKA-JANOWICZ,
University of Technology in Gdansk;

Parks and gardens of psychiatric hospitals as therapeutic urban areas

Mgr inż. arch. MICHAŁ PURSKI,
Warsaw University of Technology;

Resilient public spaces in the Kielce City

Saturday, May 13th 2023

6th PARALLEL DOCTORAL SESSION 12.00 – 13.30
Faculty of Architecture building, 1st floor, room no.08

Moderators: **Dr hab. inż. arch. KATARZYNA HODOR, prof. CUT,** Cracow University of Technology; **Prof. Dr DENIS BOCQUET,** École Nationale Supérieure d'Architecture de Strasbourg, Laboratoire AMUP; **Dr hab. inż. arch. PATRYCJA HAUPT, prof. CUT,** Cracow University of Technology;

Mgr inż. arch. PAULINA NAGEL,
Academy of Silesia, Katowice;

Possibilities for the renewal of the Katowice City Market in student visions

Mgr inż. arch. WERONIKA WLAZŁY,
Prof. dr hab. inż. arch. AGATA BONENBERG (patron),
Poznań University of Technology, AUPC PAS;

Eye tracking study of greenery in interior spaces of public libraries

Living in the city detaches humans from nature. It has a negative impact on one's well-being. Recently created concept of biophilic design aims to restore the primal connection between human and nature within the spaces we live in. Most common way to achieve that is incorporating greenery into design. Crucial role in the restoration of the connection with nature play public spaces. They are visited by a significant number of people and can positively influence them if they are designed according to biophilic design guidelines. The connection between human and nature interacts with all the senses: sight, hearing, touch, taste and smell. This study focuses on analyzing the sight in public spaces such as public libraries that incorporate greenery into their interior spaces enabling the visitors to reconnect with nature. The analysis is based on a quantitative study using eye- tracking device. A group of respondents was shown a number of photos depicting different library interior spaces. All of them had specially designed places for plants. The libraries included greenery in various setups, from setting a place for a tree to designing a green wall. The results show the sight fixation points presented on heat maps that describe the relationship between the presence of greenery in the interior and the actual sight path of the observers. Moreover they show similarities and differences between actual sight paths in various greenery setups. Conducted research aims to provide information for biophilic design that could help understand how to consciously and in the most efficient way include greenery in the public interior spaces.

Mgr inż. arch. EWA SZYMCZYK, PhD Candidate,
Cracow University of Technology;

Does urban form matter? Growth and shrinkage of Polish medium-sized cities from urban planning perspective

Urban shrinkage is a complex process in which the cause-and-effect relationship is very difficult to distinguish. Researchers most often use population indicators to measure this phenomenon and point most commonly to economic and demographic causes. While urban shrinkage in Eastern European states is strongly linked to boom of transformation and de-industrialization, it is also based on spatial and social dependencies. Among spatial factors influencing shrinkage are urban sprawl, suburbanization, and lack of or neglected city center. Researchers widely study urban morphology and development of urban structures worldwide. However, city physical form is rarely analyzed in the context of urban shrinkage. Its capture, especially on a large scale both longitudinal (time) and spatial (urban regions or national scale) poses a major empirical challenge. Finding additional spatial and dependencies will help to better understand the complexity of shrinkage process and to plan it to avoid a "downward spiral" (Milbert, 2015) or "vicious circle of shrinkage" (Jaroszewska, 2019).

Presented study shows approaches to measure physical aspects of cities' shape as well as its relation to other cities in the urban system to later relate them to cities' growth and decline measured in a multifactor approach. The research focuses on medium-sized cities that have experienced a sharper downturn than larger cities, according to a study of Eastern European cities between 1960-2005 (Turok and Mykhnenko, 2007) and are the dominating size type among all shrinking cities after a study of all Polish cities in 1990-2010 (CIRES).

This study uses Urban Informatics including GIS and data analytics to process and analyze big volumes of data in an efficient and reliable manner. The results show that medium-sized cities are still a dominant type of shrinking cities in Poland. It presents intermediate outcomes of research on relation between urban form and shrinking. The outcome will contribute to growing body of knowledge on shrinkage in order to plan wiser urban futures.

Mgr inż. arch. KRZYSZTOF KLUS, PhD Candidate**,**
Cracow University of Technology,

Impact of urban planning on accessibility to educational institutions in the city residential complexes

Nowadays the economic, social and political success of cities and entire countries depends on a large extent on an educated society. We can observe an extremely rapid development of new technologies, which is not possible without having appropriate staff at various levels of the entire economy. Without them, individual cities may be at the risk of failure in the global race and social and economic regression. The development of science is also our fundamental opportunity to overcome other global challenges, such as climate change and its results. To meet the demand for educated staff, common access to education is crucial. The Polish constitution guarantees the right and even imposes the obligation to educate children and youth. Unfortunately, this does not always translate into accessibility to educational institutions, which is visible not only in villages, but also in large cities such as Kraków.

A common problem of many contemporary Polish residential complexes, especially those built in areas not covered by local spatial development plans, is the lack of educational facilities in the immediate vicinity. They often differ from the standards found in older, post-communist housing estates. A perfect example of this type of situation is the comparison of residential complexes in Krakow's Ruczaj and Nowa Huta. The first estate, created mostly after the political changes, without any plans imposed from above, has an extremely poor educational offer. The second one gives opposite situation, where central planning led to the creation of a rich and diverse educational and cultural offer. What is worth emphasizing, the housing development in Ruczaj increased in response to opening the university campus, while Nowa Huta is an example of a workers' city for a large metallurgical plant.

The issue of access to educational institutions in selected housing complexes was examined by the Author considering various factors. Attention was paid to ensuring the appropriate number of educational institutions per number of inhabitants. Real areas of pedestrian accessibility to them were also verified. The research concerned public nurseries, kindergartens and primary schools. Due to the large variety of secondary schools and the greater independence of their students, they have not been included in detail in this work.

It should be remembered that the availability of an educational institution near the place of residence is part of the answer to the present challenges of the cities. The proximity of the school and a safe route to it allow children (of appropriate age) to travel to it on their own. It also reduces the need to travel by car and public transport. Thus, it prevents the consolidation of the pattern of daily travel by individual transport in the child's mind. In addition, it significantly contributes to building the local community and neighbourly bonds. Thus, it is in line with modern city development strategies such as sustainable development, limiting car traffic or the 15-minute city.

Mgr inż. arch. ALEKSANDRA PALMER, PhD candidate,
Wrocław University of Science and Technology;

Didactics for smart cities – students' perspective

M.Sc. SABENA THOMAS, PhD Candidate,
Frankfurt University of Applied Sciences, Global Urbanisation Research Team**;**

Socio-Ecological Resilience and its Role in Cities in the Global South: A Case Study of Tshwane, South Africa

The ever-increasing complex challenges of the Anthropocene require a more transformative and evolved approach to sustainable city development. Social and Ecological Systems (SES) research is seen as a solution towards addressing these complexities by offering an approach that considers the intrinsically built linkages between social and ecological systems. The underlying principle of SES suggests that social and cultural contexts will shape ecosystems and vice versa, and their processes are interconnected and should therefore be treated as inseparable. An SES lens approach to the concept of resilience in cities ensures that the diverse responses due to changes as a result of stressors and uncertainties can be not only adaptive but also transformative.

Therefore, Socio-Ecological Resilience (SER) acknowledges the role of various systems and processes at work and the necessary value of factors such as politics, governance, culture and local knowledge. This approach is beneficial in cities of the Global South as they face numerous complex challenges and uncertainties, including rapid urbanisation and climatic upheaval, which necessitates the critical need to plan and build resilience for an equitable future. SER serves, therefore, as a driver of sustainable development through its approach towards transformative change, which offers a more nuanced and enriched approach to developing responses to unexpected shifts. Cities of the Global South are also disproportionately reliant on ecological goods and services for their well-being and livelihood, making SER all the more important as a concept to be applied in these cities. However, despite its critical importance, the discourse surrounding SER in Global South cities still needs to be improved. More critically, this knowledge gap ensures that institutional dynamics are neglected, which is the case with the normative understanding of resilience.

Based on an understanding of the importance of SER within the Global South, this research aims to understand SER on a smaller scale within Tshwane, a rapidly developing city in South Africa, by exploring how the theoretical knowledge of SER can be transferred into practice. Tshwane contends with numerous stressors on resilience, such as urban sprawl, an energy crisis, floods, droughts and socio-economic inequities. Several strategic policies have been developed within the city to navigate resilience; however, a critical gap between policy and reality exists. An SER approach to develop integrated, multifaceted responses for a resilient future in Tshwane is worth investigating. The perspectives gained

from Tshwane can provide a framework of approach towards SER in other cities in the Global South, further broadening the discourse on this vital branch of sustainable development research. The more proactive the approach to managing the fast-paced growth of these cities, the higher the likelihood that cities can be transformed into systems that protect and improve the livelihood of communities and the most vulnerable of people within.

Mgr inż. arch. JUDYTA RDUCH,
PhD candidate, Cracow University of Technology;

The city's housing policy in the revitalization of socially excluded zones

The industrialization and later the deindustrialization processes taking place over the course of the 19th and 20th centuries had an impact not only on the degradation of the natural environment, but also on the destruction of the architectural and urban fabric of many European cities. Long-term negligence in the management of urban space and ineffective housing policy have contributed to the degradation of urban tissue and the creation of socially excluded zones.

The aim of revitalization processes should be to strengthen the cities' capacity for sustainable development and to improve the quality of life of its inhabitants. In addition to investments in infrastructure, the city's housing and social policy is crucial to revitalizing of the city. The right to have a place to live has been sanctioned both in global, European and national regulations. In Western European countries, housing policy is a key element of urban revitalization.

In Poland, the growing "housing gap" was strengthened by the negligence that was made during the times of the Polish People's Republic. Socialist ideas, assuming equality and the superiority of collective identity over individual identity, abolished private values, eliminating privileged classes and introduced the principles of equality, which were intended to lead to non-discrimination and no social segregation.

In 1990, in according to the Constitution of the Republic of Poland, a local government was established. One of the consequences of this Act was the transfer of part of the state property to the local governments, in order to equip the local governments with all the necessary assets. In this way, the local governments obtained a wide range of powers and tasks. However, it was not taken into account that a significant part of the housing stock, especially in Old Town structures, required large financial outlays for renovation and adaptation of flats to current living standards. Tenement houses as a result of many years of bad housing policy, have become degraded and socially excluded areas, characterized by a number of problems, both social and infrastructural. According to communal and local revitalization programs, these are areas with a high intensity of permanent unemployment, poor technical infrastructure, crime, and high poverty. Despite the huge potential of post-industrial urban centers, their possibilities remain unused.

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Structural characteristics of the socialist satellite cities. Comparison of Tychy and Havířov

The presentation is a result of research on socialist planned cities established in Central Europe during the process of reconstruction and modernization carried out after the Second World War. Most of them were founded in poorly urbanized areas along with new factories. However, some were situated within the existing metropolitan areas and for non-industrial purposes. The study aims at making a comparison among that group of cities in terms of the spatial structure of the built environment, street network structure and functional profile. The parameters mentioned above were discussed in the context of the existing research on resilience and shrinkage of post-socialist cities. Two case studies: Tychy in the Upper Silesian conurbation and Havířov in the agglomeration of Ostrava, were selected and compared through the lens of urban morphology, demographics, and functional dependencies. Analyses of the structure of the development, transportation network and population fluctuations were prepared for both. Relative spatial compactness, clarity of the original layout of the settlements and similar architectural typologies were identified in each of the two cities. Both experienced shrinkage after reaching the population maximum on the verge of the political transformation of 1989. While the depopulation of Tychy was more abrupt, analogous process in Havířov only accelerated after the accession of the Czech Republic to the European Union. The proximity of both cities to the metropolitan centers did not lead to the loss of autonomous urban functions. Despite the morphogenetic similarities, the shrinkage of Tychy and Havířov followed different trajectories. The reasons behind that divergence is an interesting topic for further investigation.

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