7TH INTERNATIONAL ACADEMIC CONFERENCE ON PLACES AND TECHNOLOGIES

Proceedings

EDITORS

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KEEPING UP WITH TECHNOLOGIES TO ACT RESPONSIVELY IN URBAN ENVIRONMENT

PLACES AND	
TECHNOLOGIE	S
2020	

7th International Academic Conference on Places and Technologies Proceedings

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WORD OF THE CONERENCE DIRECTOR

_ Aleksandra Djukić

Associate Professor, Ph.D, Faculty of Architecture, University of Belgrade Director of the Conference

This Proceedings from the 7th International Conference Places and Technologies: Keeping up with Technology to act Responsively with Urban Environment, which was held in Belgrade in October 2020, contributes to the discussion about the future of society and places and the role of technology in it and discussions with respect to strategy for responsive quality environment. More than 70 papers from 18 countries were presented during the conference. The organizers of the conference were: University of Belgrade (Faculty of Architecture) and Professional Association Urban Laboratory (UrbanLab). The aim of the conference was raising the questions about the future of our cities and environment, understanding from the critical aspect, the importance and role of technology in designing creative ideas to improve places. The stated general objectives point to the necessity of a multidisciplinary approach to this matter and comes under the framework of different disciplines: engineering and technical sciences, humanities and social sciences that share the same visions and goals. However, new urban and building concepts have been created mostly relaying on ICT. Furthermore, the main focuses of the articles are related to what extent the technologies could provide responsive development of built environment. In contemporary progressive practice, urban environments have been designed to act responsively to climate change, energy efficiency, protection of heritage, identity, and the main goal of successful urban development is to provide responsive urban plans and urban designs supported with new technologies as the most powerful tools for their implementations.

The Proceedings is organized into the five parts: responsive urban and territorial planning, responsive urban design, responsive architecture, responsive heritage protection and responsive technologies in architecture.

The part with the papers debating about responsive urban and territorial planning is dealing with: shrinking cities; the position of towns in digital construction technology environment; public transport; potential of maker movement on sustainable development; the impact of economic factor on transforming the urban form; segregated neighbourhoods and their integration attempts; physical planning information system; relationship between changes in technological cultures and spatial development of cities; improvement of life quality using nature based solutions and design of cultural trails.

The part dedicated to responsive urban design is dealing with: re-invented water-related spaces in the built environment; urban form evaluation; shared spaces; the sustainable construction of the old communities; spaces that stimulate innovation and creativity and provide a sense of community; pedestrian mobility and visual integration; street co-design; inspiration and cultivation of ideas in urban design; identity and resilience of open public spaces; security aspects of urban planning and design; an urban design technique regarding active aging in outdoor spaces; the challenges of dockless cycling; the use of digital technologies in creating the places of collective memory; transitioning the public space; the restorative effects of multi-sensory open space design and urban living labs for sensitive city. The part about responsive architecture has the collection of the papers arguing about: regionalism and low-tech in contemporary vernacular architecture; temporary accommodation facility for asylum seekers; BIM based project and digital building model management; rethinking a public institutes of assistance and charity; cultural, methodological and economic aspects of the laboratory; dwelling with the water; architectural analysis of therapeutic canters for drug addicts; human comfort in artificial place; collective housing as new identity in rural areas the architecture-machine origins and frameworks of machinic line of thinking in architecture and challenges of designing remote communities.

The fourth part, responsive heritage protection is dealing with: digital design techniques to assist in the composition of traditional urban buildings; visualization of architectural heritage; systemic approaches in revitalization of old city heritage site; future development of former fortress; a responsible approach model for regeneration of spatial identity; heritage perceptions; preserving the material authenticity; sustainability and resilience in rural areas and revitalisation of the industrial heritage along waterfront.

The fifth part, responsive technologies in architecture is dedicated to: application of veneer based panels in exoskeleton architecture; raising climate resilience in buildings; digital planning, construction submission and approval processes; integration of architectural and structural aspects through the design process; indoor environmental quality; models for contemporary exploitation of balneological potential; nearly zero energy building co2 emissions; open BIM for citizen engagement in sustainable renovation projects; new technologies of construction on Serbian waters; evolution of technologies for construction of apartment buildings; origin of citizens and impact on city; conventional vs prefabricated buildings; computational method to assess the impact of urban climate on the buildings' energy performance simulations and algorithm-based BIM model analysis methodology at urban level.

The significance of this conference lies in the pressing need for the integration of smart technologies and contemporary urban concepts which provide sustainable city development. Different problems in the domains of urban design and planning, architectural design, building technologies, urban sociology, ICT, transport and traffic studies, resilience of place, climate change, adaptive reuse, cities and health, landscape architecture, identity, heritage etc. are presented and discussed in more than 70 conference papers made by professors, researchers and PhD students from all over Europe and the world.

We are committed to our initial goal to improve the level of scientific status of Serbia and the region. Places and Technologies conference become traditional international event gathering researchers all around the world and has provided an opportunity for them to advance their positions in the academic hierarchy, to build their research networks and to develop new scientific projects. Presentation and the quality of the papers that are results of new studies, debates and research strengthen our ambition to keep the importance of our conference among many European ones.

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SKOPJE PUBLIC SPACES EVALUATED: ANALYSIS AND TYPOLOGIES

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ABSTRACT

In order to influence the design agenda locally in the city of Skopje the municipalities have adopted a range of strategies, standards, guidelines and control practices for quality public spaces which in many cases accommodate 'generic' and 'globalized' design principles and are not always appropriate to the local context and peculiarities. For better understanding the requirements of the different public realm spaces and guiding local communities' decisions on future responsive planning solutions it was necessary to structure proper public realm typologies created for a locally recognised purpose and based on criteria relevant to that purpose. At this juncture, although broad comparisons across extremely diverse spatial classifications and versatile framework are made, we primarily refer to one of the most recent international definitions in this area which is offered by The Charter of Public Space, while the valuation to the analysis and findings presented in the Public Space Profile for the city of Skopje, a study which was supported by the UN Habitat (Enhanced Right to the City for All) as a brief overview of the current practices of public space development and management in Skopje.

The presented study was focused on understanding and analysis of the existing system of public spaces in Skopje in relation with relevant municipalities and local peculiarities. In-depths analysis has been performed on selected public spaces with focus on selected indicators through a combination of cadastre maps, city and municipal GIS platforms and site visiting. Definition of urban public space, of quantitative and qualitative indicators relevant to public space and the methodology for measuring of the quantitative and qualitative parameters of public spaces in Skopje has been performed relevant to the SDG 11.7 developed by UN Habitat (Target 11.7: By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities) and site analysis. The results and the findings from the research are supported by a set of recommendations, which provide solid basis for future discussions and improved urban policy on public space development and management.

KEYWORDS _ public spaces, public space typologies, sustainable development goals-target 11.7, Skopje public space profile

INTRODUCTION

In the city of Skopje there is a wide variety of public spaces resulting from its discontinued development which was a consequence of changing planning paradigms, major societal changes and natural disasters. On the other side, recent urban interventions, densification of built environment and architectural incidents in line with Skopje 2014 project (Grcheva, 2018) are challenging complex historical and sociological situation threatening to reflect on the long-history-development and values of the inherited buildings and escorted ever worse abuse of public space. Violation of public property and public space is the cause of destruction and shrinkage of these areas that were historically clearly articulated as public spaces - streets, squares, river banks.

A brief overview of the current practices of public space development and management in Skopje was made by the researchers from the Faculty of Architecture, University Ss. Cyril and Methodius, Skopje. The research was commissioned by UN- Habitat and performed according to the suggested methodology and typology, adapted to the local characteristics and conditions. The study was focused on understanding and analysis of the existing system of public spaces in Skopje in relation with relevant municipalities and local peculiarities. In order to respond properly to the rich variety of public spaces in the city of Skopje different characteristics were examined, such as activity and use pattern, access and flow, safety and comfort.

Typologies and Definitions in Theory and in the Charter of Public Spaces

At the very beginning, we would like to stress that the typology for the public spaces we have used in the survey are mostly based on the Charter of Public Spaces (Biennale Spazio Pubblico, 2019) and locally adapted to Skopje's characteristics and our intention was not to make broad comparisons and definitions across diverse spatial classifications of open spaces which have been differently evaluated by theorists considering the formal, functional, social, political, and physical health significance to the urban residents.

Although public access is common for many types of open spaces, it does not automatically imply public access which is important notion for the valuation of the friendly use and safety issues we wanted to discuss in Skopje. It is certain that their public accessibility can closely determine their cultural and economic functionalities. There we arrive to the category and definitions of public realm. Carmona et al. (2008, p. 5) find that "public space (narrowly defined) relates to all those parts of the built and natural environment where the public has free access. It encompasses: all the streets, squares and other rights of way the open spaces and parks; and the 'public/private' spaces where public access is unrestricted."

No matter of different approach and focuses which different definitions and typologies evolved, any public space has three characteristics: physical, social and cultural. To make a successful city, it should provide a sense of place that strengthens community's identity, which improves community relation while creating a place for all types of people to congregate. In this regard Richard Sennett's remarks (Sennett, 2010, p.2), who attributes himself to the so-called "performative" school in approaching the issue of public, are very important.

However, when we look at these famous definitions, we realize that most of them understand public space as the one of gathering, encountering – not of "moving through". On the other hand, social scientists admit that space is getting more and more often expressed not through the "place" but through the "mobility" the place itself is less characterized by the stability, and more often - by the movement and flows, as well. (Castells, 1998)

In support of this discussion, The Charter of Public spaces was adopted at the Second Biennial of Public Spaces in 2013. In order to make a significant contribution to the preparatory process of the third Conference of the United Nations on Human Settlements 2016 this document immensely contributed to the definition of public spaces. The broad and comprehensive definition of public space in the Charter of Public Spaces elaborates that: "Public spaces consist of open environments (e.g. streets, sidewalks, squares, gardens, parks) and in sheltered spaces created without a profit motive and for everyone's enjoyment (e.g. public libraries, museums). Both when they possess a clear identity can be defined as "places". The objective is that all public spaces should become "places".

(Sennett 2010, p.2)

The Global Public Space Toolkit is prepared to become a user-friendly quide towards a quality of public spaces, produced by UN-Habitat in cooperation with Instituto Nazionale di Urbanistica (INU) and other partners, using The Charter of Public Spaces as one of the main reference definitions of public spaces. In this document: "The notion of public space as a common good implies its accessibility by all with no direct cost to the user, and also its spirit of public service without any purpose other than contributing to the overall quality of urban life. The term 'place' is used to allude to the quality all good public spaces should possess." (Biennale Spazio Pubblico 2019, p.24) Under this definition the document distinguishes a variety of different types of public space, which can be regrouped into five main categories, starting from those that guarantee maximum access and versatility. The types are subdivided into three main categories, while the fourth category is for the "non-physical" public spaces. The first (I) category of "Streets as public space" is subdivided into: Streets, avenues and boulevards; Squares and plazas; Pavements; Passages and galleries; Bicycle paths. The second (II) category of "Public open spaces" is subdivided into: Parks; Gardens; Playgrounds; Public beaches; Riverbanks and waterfronts, and the third category of "Public urban facilities" consists of: Public libraries; Civic/community centres; Municipal markets; Public sports facilities, as specialized urban spaces.

PUBLIC SPACES SAMPLES EXAMINED

Following the elaborated typology in the Charter of Public Spaces and the Global Public Space Toolkit, the Public Space Profile for city of Skopje was completed as part of the UN-Habitat project "Enhanced right to the city for all" (UNKT, 2018). Measurement of quantitative and qualitative parameters of public spaces has been performed according to the SDG 11.7 developed by UN Habitat and indicator 11.7.1 which was calculated for each of the five chosen sample areas (UN Habitat, 2018). The in-depths analysis has been performed on selected public space with focus on selected indicators through a combination of cadastre maps, city and municipal GIS platforms and site visits. Research of five sample sites with size of 10 hectares each, provides an opportunity for measuring and making a comparative analysis of the parameters in five different sites in city of Skopje. The samples differ in urban morphology, relation to public and private property, scale and position, and equipment. In all five samples comparative overview on quality of public spaces based on Indicator 11.7.1. was made measuring the proportion of total surface of land allocated to streets (street and pavement); proportion of total surface of open public spaces (parks and green areas, children and sport playgrounds, squares, etc.); proportion of total open public space; proportion of open public space per capita. In this paper are presented only two samples, both being part of the same and most common typology of public space: street and square.



_ Figure 1: Five investigated samples (10 ha) (Source: UN HABITAT, 2018. Skopje Public Space Profile)

#1 TYPOLOGY: STREETS AS PUBLIC SPACE

The very well-known neighbourhood "Debar Maalo", located on the western fringes of the central core of the city of Skopje, in its layout is a heritage of post-ottoman planning of the Skopje when the development was oriented towards building a European city, while its built form is a combination of that same traditional town architecture and today's architecture. Programmatically, "Debar Maalo" is a predominantly residential neighbourhood with ground level of its buildings usually used for mixed uses such as: cafeterias, bars, restaurants, local shops, galleries and other service-oriented facilities that make "Debar Maalo" one of the most vibrant, diverse and attractive parts of the city. The street network is composed of residential streets with sidewalks and tree lines that do not allow heavy and fast traffic. They are quite straight and linear in their layout, and form rectangular or triangular urban blocks.

The calculations made for this sample show a lack of any open public space dedicated for specific use, as: parks and green areas, children and sport playgrounds, squares, etc. The result is 0 %. On the other hand, the result obtained for land allocated to streets is 37,45 % and it is to some extent above the expected 30%. Proportion of total open public space is 37,45 %, which is less than expected 45 %.



_ Figure 2: "Debar Maalo" map with the measuring points: Aminta III Street, Miroslav Krleza Street, Antonie Grubishikj Street and Square Krug.

In spite of its residential character, "Debar Maalo" hosts diverse activities in which participate the local people as much as participate the people from the whole city, of all generations and genders. The vicinity to the inner city centre core, the city park and stadium, and the disposition between important city boulevards "Partizanski Odredi", "Kliment Ohridski", "Ilindenska" and "Ruzveltova", make "Debar Maalo" streets part of important network that connects assets and places together, and as such accommodates dynamic and multi-layered flow throughout the whole day, regardless if it is a working or non-working day.



_ Figure3: Aminta III Street (by Authors)

With lack of designated public parking zones, the cars have completely acquired the pedestrian domain. Namely, all sidewalks with no street bollards are occupied by parked cars in addition to extensive use of the sidewalks by the bars/restaurants, including tables, decorative elements and shading structures. This superiority of cars parked and bars' outdoor areas, leaves the pedestrian completely out of sidewalks and puts them on the asphalt surface together with cars and cyclists. Amenities and equipment comprise of street lights, waste bins, traffic signs and parking notice boards, and they are mainly in good shape, but not sufficient in quantity though.

Aminta III Street is the busiest street with bars and restaurants, used dominantly during the coffee brake hours 12-18h. All aspects apply same to both working days and weekend days. The cul-desac Miroslav Krlezha Street has lowest car frequency, which turns the asphalt of the street into a promenade used by people walking, alone or with kids and prams. Being the street that leads to the food market of "Bunjakovec", makes the female users of age category 15-64 principal users in the mornings, while in the later hours male overtake. There is no significant difference between the use of the street in working days and weekend days. Antonie Grubishikj Street, besides engagements in bars, fosters kids play in kindergarten "Kocho Racin" which can be seen between 10-12h. Like Miroslav Krlezha Street, Antonie Grubishikj Street is also used by people who visit the local food market. Along the sidewalks, there are jardinières with greenery. Antonie Gribishikj Street demonstrates similarities with Miroslav Krlezha in all three differentiation aspects of activities and flows. Vicinity of the primary school "Kole Nedelkovski" and kindergarten "Kocho Racin" (both on the street itself) on working days, in working hours show prevailing female users of age category 15-64.



_ Figure 4: Miroslav Krlezha Street (by Authors)

Based on measurements taken on four streets i.e. public spaces in "Debar Maalo" we concluded that the streets are part of the permeable neighbourhood with great accessibility and connectivity, which brings dynamic and multi-layered flow throughout the whole day. But, in terms of traffic, the critical evident domination of the cars either parked or in motion, is in conflict with many other non-motorized uses, pedestrians or cyclists, of the streets as a public space. Other than cars, side-walks are "conquered" by outdoor areas of every bar/restaurant. Consequently, safety and comfort come into question! In spite of the issues of mobility and maximizing cars capacity, "Debar Maalo" streets manage to function as a place well known in the city's cognitive map. However, possible multiple activities are not developed because socializing in the bars and restaurants, or to transiting activities, dominate.

#2 TYPOLOGY: SQUARES AS PUBLIC SPACE

Skanderbeg Square, located between Skopje's old Bazaar on north, and the Inner city core on south, is a highly heterogeneous and stratified space inherited form the post-earthquake development of Skopje, set upon an existing urban form of an ottoman town. The calculations made for this sample show a high amount of land allocated to pavement, 44,32 %, and 26,84% to streets or in total surface 71,12 %. This result is much above the expected 30%, due to the fact that this part of the city is more pedestrian as a part of Old Bazaar and new city square – Skanderbeg Square. Proportion of total

surface of open public space dedicated to parks and green areas, children and sport playgrounds, squares, etc., is very limited 6,11 % and is less than expected 15 %. Proportion of total open public space is 77,28 %, which is much more than expected 45 %. Given its location, the Skanderbeg Square is very permeable and therefore allows very dynamic flow of public space users.

The whole complex of Skanderbeg square accommodates various types of public spaces.

Towards Goce Delchev Boulevard and Filip II Makedonski Street there is a small Piazza that extends into public parking. On its western part there is tall equestrian bronze statue of Skanderbeg of 2007, complemented with ethnocentric murals and symbols. This open public space operates primarily as transitional space between the Skanderbeg Square and the Old Bazaar and the public parking.



_ Figure 5. Skanderbeg Square with it measuring points: Public Parking / Piazza; Pavement of Mixed-use Street; Skenderbeg Square; and Entrance to Skopje Old Bazaar

The Piazza is equipped with urban equipment of moderate quality such as: light poles, concrete flower boxes and notice boards and the lack of services and amenities onsite makes it a quite underutilized public space.

The Skanderbeg Square is a large public space – elevated surface, that covers over 8,000 square meters, gained by enclosing part of the Old Bazaar and accessed by massive staircases. The elevated square offers open vistas of the surrounding Old Bazaar, the fortress Kale, Macedonian Philcharmony, Macedonian National Theater and the Ottoman Daut Pashin Hamam, as well as other areas in the city centre. It is complemented with centrally located, sphere-shaped canopies that provide shade from the sun. On the western side it is accessed through massive "cavea" like staircase that open up towards the Department Store Most. Similar staircase has been erected on the opposite corner of the elevated plateau, which faces the Skanderbeg Piazza. The northern and southern edges of the square provide urban terraces.

In spite of that, the square is highly non-contextual, incoherent with the already establish urban monuments (Daut Pashin Hamam and the Old Bazar) and uses.

Even though it is designed as Public Square, its fairly restricted access which runs solely through stairs and elevators makes it isolated from the natural pedestrian flows which run underneath. The flow measurements of the place have confirmed that the number of users is extremely low for a

place of such size, capacity and urban significance. Namely, most of the users are limited to tourists and deliberate local visitors, with no significant change in pattern of use over the day, regardless of working or rest days.

The urban equipment is comprised of notice boards, street lights, waste bins and standardized benches. The quality is good, standardized and sufficient in number. Natural elements are limited to jardinières with greenery. In terms of safety and comfort, there are no particular remarks, however the overall perception of the place is underwhelming.



_ Figure 6. Skenderbeg Piazza (by Authors)

In terms of traffic, it is limited to pedestrians. The flow measurements have shown significant flux that tends to intensify over the business days as opposed to rest days. The numbers vary over the course of the day and the number of users which simply pass through the place is significantly larger as opposed to the users that actually engage with the public space and its amenities.

The analyses and measurements of this case-study area around Skanderbeg Square show that its integration in the urban fabric and the mental memory of the city varies significantly. While the entrance to the Old Bazaar Plateau, Piazza / public parking and the pavements of the large boulevards and streets are morphological continuation of the present physical structure and its urban properties, the newly imposed Skanderbeg Square do not establish relevant contextual relationships.

CONCLUSION

The study provides an opportunity for comparative analyses of the parameters in five different sites and public places in the city of Skopje. The samples besides the fact they have been chosen for their difference in typology, out of which only two typologies were presented in this paper, they differ in urban morphology, provision of public space stock, relation to public and private property, scale and position. Baseline analyses of supply and quality of public spaces examined in the study, were concentrated on pedestrian count and flow patterns, and on use pattern. As an outcome of the performed observations and calculations, three differentiated groups of valuable data have been provided concerning: activity and use, access and flow, safety and comfort.

The results and the findings from the research have provided solid basis for recommendations for future discussions and improvement of urban policy on public space development and management. The overview leaded to a conclusion that the approach to public space design in the city of Skopje must employ different concepts in order to respond properly to the rich variety of public spaces. Public space in the city should be perceived as an integrated network of different types of public space, rather than dispersed and isolated spatial elements, and they should be hubs of multipurpose spaces integrating different activities, spatial features and modes of transport.

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