spatium

urban and spatial planning, architecture, housing, building, geodesia, environment

December 2021

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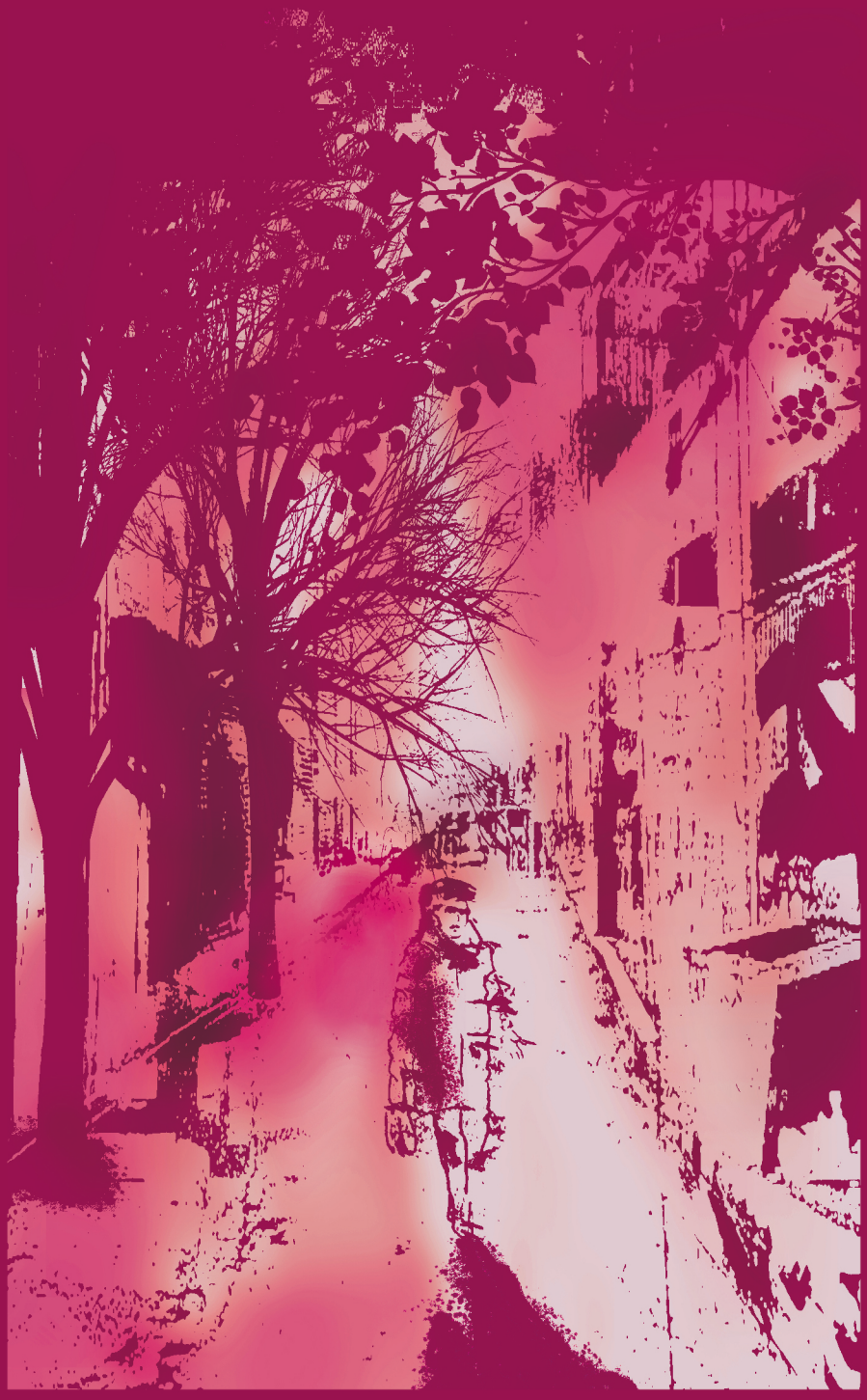

spatium
No. 46, December 2021, Belgrade

ISSN 1450-569X
ISSN 2217-8066 (Online)

SCOPE AND AIMS

The review is concerned with a multi-disciplinary approach to spatial, regional and urban planning and architecture, as well as with various aspects of land use, including housing, environment and related themes and topics. It attempts to contribute to better theoretical understanding of a new spatial development processes and to improve the practice in the field.

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SUPPORTED BY
Ministry of Education, Science and Technological Development of the Republic of Serbia
Spatium is indexed in SCOPUS, SCImago, DOAJ and Avery Index.

Printed in Serbia by
"PLANETA PRINT", Belgrade, Serbia
Number of copies: 200

Spatium is published half-yearly.

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EDITORIAL

Dear readers,

Even though the first association with the title of our journal *Spatium* is spatial planning, this intuitive inclination has never guided the selection of papers we applied. Instead, selection is based on quality and scientific standards, as well as on multidisciplinarity and interwoven links of spatial, regional and urban planning, architecture, housing, and environmental studies. Oddly enough, some months ago a colleague of mine who is an architect by vocation, said to me after looking at the previous issue of *Spatium* that the majority of its content was from the field of urban design and architecture rather than from spatial planning. Personally, I do not consider this remark to be an issue. There will always be individuals who look at things in a binary way, following the basic urge to dichotomise, with nothing but an empty gap in between two distinct groups. On the other hand, real life actually demonstrates the 'yin-yang' principle, meaning that things can never be completely 'black' or 'white'. Therefore, I feel free to (ab)use this limited space of the editorial to emphasise once again the interdisciplinary character of *Spatium* and unity of different themes and topics in the papers, which will only raise the bar of the journal's scientific excellence.

The latest issue of *Spatium* continues the thread from the previous issue in 2021, by communicating interesting research related to international and domestic urban and architectural-design practice, as well as the umbrella topic of planning in the context of post-socialist transition and an exploration of uncertainties that accompany the self-perceived potential of professionally trained planners to be employed after finishing university. One of the papers depicts the Serbian context of presenting a new urban model that uses brownfields (former military complexes to be precise), which can be valorised in terms of cultural heritage protection, from the city of Niš. The quality of urban spaces with regard to the security of their users, especially vulnerable groups, and in particular women, is the area analysed in the paper from Iran (the city of Jiroft). Accessibility is considered as the ultimate goal of any modern transportation system; however, it is often difficult to measure it in practice. Still, one of the papers from the latest issue of *Spatium* successfully deals with this matter and shows the efficacy of open-source technology to support spatial planning and accessibility analysis, especially in the emerging region of a new capital site candidate in Indonesia. In the sphere of architecture, the special significance of access in museums, where the custom of passage is juxtaposed with security elements, has been explored in a paper which encompasses experience from world famous museums. Another interesting topic covered by one of the papers casts light on the openness of public spaces to skateboarding culture, and in general, to the feeling of belonging as an essential part of building social capital. Finally, the paper which concludes this issue of *Spatium* takes us to Kazakhstan and the transformation of its modern architecture.

Lastly, I would like to announce that starting from next year, our journal will be introducing another convenience for authors, and that is OnLine-First. This will benefit us all in terms of the visibility of the journal's articles much before they are published in the electronic or paper format of the complete issue of *Spatium*.

Jasna Petrić
Editor-in-Chief

SPATIUM
No. 46, December 2021, pp. 1-10

UDC 711.4(438)"20"
711.1(497.2)"20"
Review paper
DOI: https://doi.org/10.2298/SPAT2146001C

PATHS OF THE URBAN REGENERATION PROCESS IN CENTRAL AND EASTERN EUROPE AFTER EU ENLARGEMENT - POLAND AND BULGARIA AS COMPARATIVE CASE STUDIES

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The enlargement of the EU towards Central-Eastern Europe in the years 2004 and 2007 and the related EU funds provided new opportunities and created new challenges to both big metropolitan cities and smaller settlements. One of the particularly important challenges was to define appropriate national and local policies for the urban regeneration of neglected areas, which were abundant in this part of Europe. The objective of the paper is to analyze and evaluate actions taken in Bulgaria and Poland at the national and local level in the field of urban regeneration after the countries' accession to the EU. The paper compares the general national and local planning approaches and capacity building for urban regeneration in the context of regulative and procedural issues. The local case studies represent two types of urban areas under regeneration: the metropolitan core cities Poznań and Sofia and medium-sized non-core towns of Piła and Gabrovo. The results are in the form of a concurrent evaluation of both the achievements and negative effects resulting from the national and local processes in the envisaged and the recently implemented activities with regard to the regeneration of deprived urban neighborhoods and areas.

***Key words*: urban regeneration, EU funds, Central and Eastern Europe, Poland, Bulgaria.**

INTRODUCTION

Common urban policy activities in the European Union have been going on for many years. This has not yet been reflected in community law, but instead in numerous instruments in the form of grants, loans and consultancy influence initiatives undertaken in the field of the sustainable and integrated development of European cities (Dąbrowski, 2014). The EU accession of Central and Eastern European countries in 2004 and 2007 coincided with the intensification of activities in this area. The New Athens Charter was adopted in 2003 and the Leipzig Charter in 2007. New Community initiatives such as URBAN, URBACT and JESSICA were implemented. As a result, the new EU member states had a broader range of possibilities for supporting urban development. In Central and Eastern Europe (CEE), the needs in this area, especially in relation to urban regeneration, were very high. Systemic transformation after 1990 led to the decline of city centers, the outflow of people to the suburbs, and the creation of numerous post-industrial and post-military areas (Scott and Kühn, 2012; Kubeš, 2013; Tsenkova, 2014; Stryjakiewicz *et al*., 2012; Hlaváček *et al*., 2016; Doğan, 2019). The countries of Central and Eastern Europe had not succeeded in developing instruments to support problem urban areas before joining the European Union. For this reason, urban policy has taken an important place in financing development with the use of European Union funds.

Our paper aims to analyze and evaluate the actions taken at the national and local level in the field of urban regeneration after the EU accession of Poland and Bulgaria. The paper compares the general national and local planning approaches and the capacity building for urban regeneration in the context of regulatory and procedural issues. The local case studies represent two types of urban areas under regeneration: the metropolitan core cities of Poznań and Sofia and medium-sized non-core towns of Piła and Gabrovo. The results are in the form of a concurrent evaluation of both the achievements and negative effects with regard to

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the regeneration of deprived urban neighborhoods. The discussion and conclusions address the impact of the EU regional policy framework and funding upon the national urban planning and regeneration policies.

The paper is structured as follows. Following the introduction, in the second section we present the changing role of the European Union in urban development and regeneration in Europe. In the third section, we focus on the spatial transformations taking place in CEE after the systemic transformation in 1990. The fourth section is devoted to the presentation of source materials and methodology. In the fifth section, we analyze regeneration pathways in Poland and Bulgaria at the national and local levels. The sixth and final section provide an overview of the issues at hand.

THE ROLE OF EU FUNDS IN URBAN DEVELOPMENT AND REGENERATION IN EUROPE

Urban development and regeneration have for years been the subject of hot debate within the European Union. However, to date it has not been formally reflected in the *acquis communautaire* (Cheshire, 1987; Parkinson, 1992; Hachmann, 2000; Van Den Berg, Braun and Van Der Meer, 2018). This is due in particular to the opposition of those member states which have regarded the common urban policy as a breach of the subsidiarity principle (Van Den Berg, 2005; Frank, 2006). This principle assumes that the European Union should intervene in a given matter only if actions at a lower, i.e. national, level, have proven ineffective. The European Union's activity in relation to urban areas under the common cohesion policy is therefore limited exclusively to promoting social and economic development in cities through a system of financial aid, consisting of grants and occasionally loans. In the first few years of its existence, the European Economic Community intervened little in urban development. It was only in 1988 that a report by P. Chashire highlighted the collapse of many important urban centers within the Community (Parkinson, 2005). The creation of Urban Pilot Projects (UPPs) was a breakthrough moment. The program referred to the idea of area-based initiatives and aimed at working out an integrated, i.e. multifaceted, solution for economic, environmental or spatial problems in a strictly defined area. The effectiveness of the intervention was additionally increased by the accumulation of maximum financial resources in a specific time and place. In 1994, the problems of urban areas were singled out and covered by the Community Initiative Concerning Urban Areas (URBAN). This was a dedicated financial instrument to address problems that were widespread throughout the European Union, regardless of whether they concerned a backward or a well-developed region. The main objective of the initiative was to achieve integrated regeneration and internal cohesion in European cities. The URBAN program is considered to be the first initiative aimed at supporting cities to gain the unanimous support of all the EU Member States. In the early 2000s, the European Commission launched another program, known as Urban Audit. This initiative was the outcome of a reflection on the working document *Towards an Urban Agenda in the European Union* as presented by Commissioner M. Wulf-Mathies. The 1998 document entitled *Sustainable Urban Development. A Framework for Action*, in turn, outlined the objectives to be set to achieve effective and sustainable urban development. Furthermore, the report highlighted the need to achieve better coordination of community policies and to develop a future financial framework with greater emphasis on the role of cities. In the following years, encouraged by the positive results of the UPPs and URBAN-I, the European Commission decided to continue with a single program under the name of URBAN II. New funds were also earmarked for the second edition of Urban Audit, which became known as Urban Audit II. In 2002, a new URBACT program was launched to stimulate and finance the creation of thematic urban networks for the mutual exchange of information and best practices. The adoption in 2003 of the New Athens Charter by the European Council of Town Planners was a major event. The document set out the vision for the future of 21st-century cities, determined the most important urban development trends and identified key problems and challenges that should guide urban policy. In 2005, a decision was taken to terminate URBAN II and extend support to urban areas by mainstreaming it into community-wide programming under two objectives: "Convergence" and "Regional Competitiveness and Employment". The urban dimension of the European Union thus took on a completely new and more important shape. In addition, the European Commission decided to launch a new financial tool in 2009. Known as JESSICA, it stood for the Joint European Support for Sustainable Investment in the City Area. The program is an innovative solution for regeneration measures through a system of convenient, low-interest loans, mostly from renewable structural funds. At the same time, the URBACT III and Urban Audit programs were continued.

As a result, when the CEE countries joined the European Union in 2004-2007, urban issues had been quite well-ordered and had clearly gained more importance in the community policy. The common approach to urban development was further strengthened by the adoption by EU ministers in 2007 of the Leipzig Charter on Sustainable European Cities. The charter contains common and coherent principles of sustainable urban development in Europe. In the programming period 2014-2020, the development and regeneration of cities was an element of mainstream European Union funding. At the same time, successive editions of existing programs such as URBACT, JESSICA and Urban Audit were in place (Dąbrowski, 2015) and the next generation of these is upcoming, providing opportunities for better distribution of knowledge and funding. In 2016, the Urban Agenda for the European Union was developed, which aims to create partnerships for improvement in urban areas to meet the key challenges faced by cities. These range from employment and social inclusion through mobility, regeneration, the environment, and climate change. Many of these challenges in Central and Eastern European cities are particularly important.

TRANSFORMATION AND REGENERATION IN CENTRAL AND EASTERN EUROPEAN CITIES AND TOWNS

Prior to 1989, the practice in CEE was in line with the postwar reconstruction of city centers throughout Europe.

The growth of the urban tissue through more compact and high-rise housing and centrally planned services in socialist times, and even the construction of some large panel housing estates, took the place of already urbanized bourgeois areas with varying levels of urban development and equipment. Moreover, there was much emphasis on large-scale flagship interventions of public character, such as multipurpose complexes, monuments, squares, and parks. The changes, transformation and regeneration that have taken place in CEE cities and towns in the last 30 years of transition and EU integration through the establishment of market-based urban economies and democratic institutions of urban governance and planning have been the focus of multiple publications during this period. These processes and their impact are generally described and analyzed in the body of literature partially outlined here in three chronologically distinguished stages, for every decade from 1989 onwards.

The first decade of 1989-1999 is marked by the reconstruction of the long-term patterns of urbanization in the countries under scrutiny (Węcławowicz, 1992; Thornley, 1993; Musil, 1993; Strong *et al*., 1996; Bertaud and Renaud, 1997). The transition from a centrally-planned totalitarian system to a market-oriented democratic one was accompanied by a rapid and prolonged decline of traditional industry, and the related social marginalization and strong migration. Overall regional and urban environmental changes related to abandonment, decay, fragmentation, emerging congestion, and suburban sprawl were qualitatively described. Demographic dynamics with parallel growth of major cities and shrinkage of most of the other regions in the countries in transition were observed and analyzed. The social stratification and patterns of socio-spatial segregation in cities and towns, the economic restructuring from industry to services and their reflection on central and peripheral locations and land markets were studied as separate cases, limited comparisons or broader scope studies.

In the second decade (2000-2009), after the transformation of the political and economic regime, the focus was on the impacts of the more mature transition, as well as the expectations and immediate effects after EU accession and the globalization of urban economies, societies, environment, and spaces (Staddon and Mollov, 2000; Dimitrova, 2000; Dimitrovska-Andrews, 2002; Tsenkova, 2003; Hamilton, *et al.*, 2005; Parysek and Mierzejewska, 2006; Tsenkova and Nedović-Budić, 2006; Stanilov, 2007; Hirt and Stanilov, 2009). The initial impacts from the faster or slower opening up to foreign direct investment associated with exponential growth of commercial developments, such as offices and shopping malls, were an important part of the urban transformations, capturing the bigger picture of the scene in the region prior to the global financial crisis. In parallel, some of the themes found in the professional discourse of the first years after the new millennium were: the search for new glocal identities; "the tragedy of the commons" (Hardin, 1968), especially the overall poor urban environmental quality; and the mismanagement of public amenities, infrastructure and collective housing.

The development paths during the transition and the first years of integration are described as retrospectives in the third decade (2010-2019). This is paralleled with the trajectories and perspectives that CEE cities and towns faced, as well as their regeneration strategies and actions in the context of the legacy of the recent past and the newly emerging environmental, socio-economic, cultural, and power-related challenges and their representation in the urban space (Scott and Kühn, 2012; Kubeš, 2013; Kaczmarek and Marcinczak, 2013; Tsenkova, 2014; Tasheva-Petrova, 2016; Stryjakiewicz *et al*., 2018; Dimitrova *et al*., 2019). Various visions and performances are shaping the current transitions and adaptation capacities. The development and regeneration perspectives are set within a complex puzzle of urban networks and urban tracts moving at very different speeds. This is in the context of the advantages or disadvantages of macro connectivity, the common market and the free flow of capital. All of the above themes and processes can be traced back in the urban development and regeneration paths of the various cities and towns in both countries. The case studies of Poland and Bulgaria provide particularly interesting observations in this regard as ground for studying similar yet divergent paths, especially in the urban regeneration domain addressed in the following chapters.

METHODOLOGY AND DATA COLLECTION

Various research methods were applied in the article. The desk research approach was supported by a qualitative content analysis (Mayring, 2000) and participant observation, coupled with a comparison of qualitative and quantitative secondary data. The first step analyzed the national paths of the regeneration process in Poland and Bulgaria after their EU accession. The strategic documents regarding socio-economic and spatial development prepared at the national level were taken into account, along with the operational programs constituting the basis for spending European funds, and the legal regulations regarding the development of cities, with emphasis on their regeneration. On this basis, the approach to the renewal of degraded areas in Poland and Bulgaria was determined, covering four case studies. The selection of cities was based on a comparative case study selection approach (Seawright and Gerring, 2008). The cities covered by the analysis are examples of primary cities and lower tier towns. In this regard, we used the Lagendijk (2000) core/non-core concept, which assumes that core cities are located in metropolitan areas and the non-core cities are located 'outside the principal metropolitan areas' (Lagendijk and Lorentzen, 2007). One of the most important factors for selecting the case studies was that both authors had had the opportunity to be either participants and/or observers during the stages of the planning process for regenerating the four urban areas.

Poznań and Sofia, which are metropolitan areas in both countries, were selected as core cities. Piła and Gabrovo were selected as non-core towns (Table 1).

We analyzed the nature of the actions taken, the main actors in this process and the most important effects. In this way, we verified how the national path of regeneration activities was implemented at the local level in various types of cities. The cases and the comparison are not exhaustive but indicative.

For the comparative analysis we used the criteria that were described in the work of Stohr (1989), Lichfield (1992) and Roberts (2000) in the characteristics of the evolution of regeneration in Western European countries. Therefore, we took into account the following: the major strategy and orientation, key actors and stakeholders, spatial level of activity, economic focus, social content, physical emphasis, and the environmental approach. These categories of study were found to be helpful for the purpose of the study and to articulate the sustainable urban development and regeneration notion around the EU and national policies for regional and urban development and their planning and implementation.

On this basis, we determined the regeneration paths followed by Poland and Bulgaria at the national level and their implementation at the local level.

being the first country in the European Union to decide to utilize it. In the 2014-2020 programming period, the importance of regeneration increased again. It is currently estimated that by 2023, within the framework of EU and national financial resources, approximately EUR 6 billion will have been allocated for the regeneration of problem areas (National Regeneration Plan, 2014). The value of regeneration projects financed from the European Union funds in 2014-2020 amounts to EUR 1.8 billion (Mapa dotacji UE, 2021).

The organizational and financial support of the European Union triggered systemic changes in the area of urban regeneration in Poland. Currently, this is a major element of the strategic policy of the state, expressed in the so-called Strategy for Responsible Development (Ciesiółka, 2018). EU guidelines helped to create a legislative framework via

Table 1. Comparative information about selected case study cities (Source: Eurostat, 2017; GUS, 2018; NSI, 2018)

Country	**Poland**		**Bulgaria**	
City	**Poznań**	**Piła**	**Sofia**	**Gabrovo**
Type	Core city	Non-core town	Core city	Non-core town
Population (2011; 2018)	550,742; 536,438	74,930; 73,398	1,208,097; 1,241,675	58,367; 52,169
Degree of urbanization LAU 1 level (2011; 2018)	High density cluster	High density cluster	High density cluster	Urban cluster
First regeneration initiatives with EU funds (year):	2005	2004	2011	2010
Current document regulating regeneration (year of preparation)	Municipal regeneration program (2017)	Municipal regeneration program (2017)	Integrated plan for urban rehabilitation and development (2013) and investment program (2016)	IPURD (2013) and investment program (2016)
Main type(s) of regeneration area	City center	City center, post-military area	Zones with public, social and economic character	Zones with public, social and economic character

URBAN REGENERATION: CASE STUDIES IN POLAND AND BULGARIA AT THE NATIONAL LEVEL

The case of Poland

After Poland joined the European Union in 2004, it did not accede to the URBAN Initiative. However, it took advantage of the URBACT II initiative and decided to introduce the financing of urban development and regeneration into the mainstream programming of funds. Under the 2004-2006 Integrated Regional Development Operational Program (IROP), urban regeneration was to receive over EUR 96 million, which accounted for approximately 3.3% of all the available resources from the European Regional Development Fund (ERDF) in Poland. In the 2007-2013 programming period, sixteen regional operational programs (ROPs) were established, supplanting the IROP. As Churski (2008) notes, this was evidence of a greater regional focus of the planned measures and a clear devolution of regional policy in Poland. In this period, the total allocation of ERDF funds for urban regeneration in Poland rose significantly and amounted to approximately EUR 1.1 billion (Ciesiółka, 2014). Since 2011, the JESSICA Initiative has also been used to promote regeneration among entrepreneurs, Poland the adoption in 2015 of the first legal act regulating the issues of renewal of degraded areas, i.e., the Regeneration Act. As a result, over 53% of communes and over 69% of municipalities in Poland have adopted regeneration programs (Central Statistical Office of Poland, 2018). The principles of their creation, implementation and monitoring are unified. To date, the effects of regeneration activities have focused on spatial changes, which in larger cities have led to their gentrification (Kaczmarek and Marcińczak, 2013). Therefore, since 2014, emphasis has been placed on the implementation of social measures, which are accompanied by spatial, economic or environmental steps. A participatory approach to regeneration has been promoted, in which local authorities stimulate other stakeholders, in particular residents, entrepreneurs and NGOs, to engage in relevant activities. At the same time, European Union funds have continued to be the principal source of financing regeneration. For this reason, the main barriers to regeneration in Poland are as follows: the lack of a national financing program guaranteeing a long-term, systematic regeneration process in degraded areas, as well as insufficient legal provisions concerning the protection of tenants' rights in areas undergoing regeneration (Stryjakiewicz *et al*., 2018).

The case of Bulgaria

After EU accession, during the first programming period for Bulgaria in the EU, 2007-2013, sustainable and integrated urban development received approximately 22.8% of the total budget of ERDF in Bulgaria through the Operational Program Regional Development (OPRD). The amount was over EUR 0.7 billion. The sustainable and integrated urban development axis is 53.6% of that operational program, and the other resources from the ERDF have been distributed along with resources from the cohesion fund in other more sectoral or specific programs dealing with transport, the environment, competitiveness, and technical assistance. Since 2010, the JESSICA Initiative has also been used to promote regeneration among entrepreneurs and public authorities.

There has been no clear devolution in terms of regional policy, except for the creation in 2008 of regional development advisory councils. Lower tier district and municipal authorities are being represented there to provide consultations on the regional development plans at the NUTS 2 level. During the pre-accession and early membership period, gradual Europeanization of the planning system took place (Yanchev, 2012), along with the inherited legacy from the transition period.

Integrated plans for urban rehabilitation and development (IPURD) were introduced in the Regional Development Act in 2012, prior to the second programming period of Bulgaria as an EU Member State. They became the major planning instrument at the urban level for the allocation of EU regeneration funding. The IPURD are backed by several short provisions in the Regional Development Act and by the Methodological Guidance for their elaboration and implementation (MRRB, 2012). A National concept for spatial development 2013-2025 was approved, defining the priority polycentric network of cities and towns to be supported by the sustainable integrated urban development approach. Currently, 39 cities and towns receive such funding after negotiations with the European Commission.

In 2013, the MRRB made an effort to promote a more integrated approach towards funding for the programming period 2014-2020, but there was resistance from some of the other ministries that were redistributing ERDF and ESF resources. In parallel, the national government did not choose the option for application of the community-led initiatives approach in urban areas during the 2014-2020 programming.

In the 2014-2020 programming period, the importance of sustainable and integrated urban development increased slightly to 54.5% of the Operational Program Regions in Growth (OPRG). The value of regeneration projects financed from the European Union funds in 2014-2020 amounts to EUR 531 million.

Thanks to the introduction of IPURD and the financial engineering instruments, demand for more sophisticated planning practice has emerged, although various deficiencies in the quality of the planning content have been recognized (Dimitrova *et al*., 2017, 2018), partially attributed to formalism. To date, the activities from both programming periods have stressed the physical environment and infrastructure, which has had a major effect on the comfort of local communities. Nevertheless, this has had a limited impact on environmental performance, social cohesion and economic innovation. Some of the larger upgrading projects had gentrification effects over areas with concentration of vulnerable groups (Venkov, 2014).

The currently implemented IPURD include zones for intervention of three types: (a) of a social nature: housing estates and slums; (b) of public character and high societal significance: city centers and major public spaces such as parks and gardens; and (c) with economic potential: old brownfields of military or industrial sites for conversion or new mixed-use greenfields. These zones for intervention have their own implementation programs and apply an area-based approach. There are no specialized management structures to care for the coordination and integration aspects during the implementation of these programs. Instead, the usual administrative practice of implementing EU-funded projects is followed, which has limited application in complex issues.

Up to now, there has been no official plan to adopt a separate urban regeneration act. Indirectly, the issues of urban regeneration (rehabilitation) are addressed in the Regional Development Act, where integrated territorial strategies, plans and investments are under consideration at the regional and local levels. In the current proposed amendments of the act from October 2019, the IPURD are removed and the urban rehabilitation is envisaged as part of more general plans for the integrated development of municipalities.

URBAN REGENERATION CASE STUDIES IN POLAND AND BULGARIA AT THE LOCAL LEVEL

The case of Poznań (Poland)

Poznań is located in western Poland and has a population of 536,400 (2018), which makes it the fifth largest Polish city in terms of population. Together with the surrounding municipalities, it makes up the Poznań agglomeration, inhabited by about 1.1 million people. It should be noted, however, that more than 8% of residents left the city between 1999 and 2018. The city is a thriving service center and boasts many international enterprises and universities.

Regeneration activities in Poznań began in 2005, with the establishment of the Regeneration Office within the structures of the City Hall. Its task was to coordinate work on the program and regeneration projects. Local non-governmental organizations, cultural organizations and small entrepreneurs have also been actively involved in regeneration. A regeneration committee, in operation since 2018, is an advisory body to the mayor of the city on behalf of the city residents. One of the key reasons for embarking on regeneration in Poznań, in addition to emerging socio-economic and spatial problems in the city, was the new possibility of financing the regeneration from European Union funds, which emerged after Poland's accession to the European Community in 2004 (Ciesiółka, 2010).

Since 2006, regeneration programs in Poznań have been

associated with the idea of moving regeneration, planned as a long-term process of gradual change. The entire downtown area of the city was recognized as degraded, with a high concentration of socio-economic problems (high unemployment, poverty) and spatial ones (poor technical state of the buildings). However, a decision was taken to first carry out activities in pilot areas on the outskirts of the downtown area. In subsequent years, the relevant projects covered the following areas:

- tasks activating and integrating urban communities, involving the organization of periodic cultural events, i.e. concerts, theatrical performances, multimedia shows, exhibitions, and social events;
- minor improvements in the form of road and pavement renovations, rearrangement of public spaces, creating small green areas, introducing elements of small architecture; and
- public investments, which included, above all, the reconstruction of the bridge to improve the connectivity of the regeneration areas, the construction of a museum about the beginnings of Polish statehood, the creation of the New Gasworks culture center and a city beach on the bank of the River Warta, and renovation of municipal housing resources. More than EUR 61.1 million from public funds was spent on regeneration activities in the period 2004-2013.

The activities of public authorities were increasingly accompanied by private investments. They mainly concerned the renovation of private tenements and the construction of new residential and service buildings and hotels in so-called "seals", i.e. undeveloped spaces between buildings, as well as the development of post-industrial areas (e.g. Stary Browar/Old Brewery Shopping Center, Baltic Tower) and post-military areas. The JESSICA initiative was of great importance in this regard. However, the transfer of poorer inhabitants to other parts of the city, not covered by regeneration, was an unintended effect of the regeneration process (Ciesiółka and Maćkiewicz, 2020).

In 2017, in connection with the entry into force of the Regeneration Act and new opportunities for financing regeneration from European Union funds, a new regeneration program was adopted in the city, which already covers the entire downtown area. Furthermore, the scope of the planned public activities is much broader and includes large-scale investments related to the renovation of the city's main streets, the construction of a new tram route and a new pedestrian crossing over the River Warta, construction of cultural centers in housing estates, etc. The wider spatial scope of the regeneration program is associated with increased interest from the private sector in regeneration matters. The regeneration stimulated by the local authorities, previously confined to small areas, has now been extended to the entire downtown area, becoming an element of strategic thinking about the city's development. It is based on diversified sources of financing, including EU funds, city financing and private money. The value of regeneration projects financed by the European Union funds in Poznań in 2014-2020 amounts to EUR 34 million (Mapa dotacji UE, 2021). At the same time, gentrification is taking place in the areas regenerated previously; there are no legal and financial instruments in place to prevent this process.

The case of Sofia (Bulgaria)

Sofia is the capital and the biggest city in Bulgaria, with a population of more than 1,236,000 inhabitants (NSI, 2018). It is located in the western mountainous part of the country. The municipality of Sofia (*Stolichna obshtina*) enjoys a special status and its limits correspond to those of the Sofia (*stolica*) district. The functional urban area (FUA) of Sofia includes a significant number of municipalities in the two adjacent districts of Sofia and Pernik, making up an agglomeration of almost 1.5 million inhabitants. The city has both lost and gained many residents during some of its more turbulent years during the 1990s and it continues to attract people from all over the country. The capital offers a range of opportunities, e.g. in globally integrated outsourcing services and the ICT sector, national public administration, academic bodies and the headquarters of commercial companies, along with networks of creative and knowledge-intensive industries.

More than EUR 158.3 million was spent on regeneration activities in the period 2007-2013 from EU and national public funds on top of over EUR 500 million for the construction of the underground. Pilot urban regeneration initiatives include a number of major projects, apart from separate buildings or infrastructure elements in Sofia: a) The "Integrated capital city transport project" funded by OPRR 2007-2013; b) The "Reconstruction and major overhaul of Zhenski Pazar, Sofia" – funded by OPRR 2007-2013 through JESSICA and Fund for Sustainable Urban Development; c) The "Science and Technology Park" (Sofia Tech Park) through the Operational Program "Development of the Competitiveness of the Bulgarian Economy" (OPDCBE) 2007-2013; and d) The "Demonstration renovation of multi-family residential buildings" by the United Nations Development Program (UNDP), MRRB and the integrated STACCATO project within the European Concerto initiative. The strong citizen or stakeholder dissatisfaction in the case of the first three of the above projects or, on the other hand, a lack of interest in participating in the last case were important lessons. They can be attributed to the lack of more advanced project management and inclusive communication with stakeholders, beneficiaries and interested citizen groups from the planning stage to the implementation.

Today, no mature regeneration structures exist as part of the administration. Some of the major projects and interventions are horizontally coordinated. A key role is played by the Architecture and Urban Planning Directorate and its Urban and Spatial Planning and Immovable Cultural Heritage Department. The Department was added to the structure of the directorate as late as 2016. Its addition is a formal response to the more specific guidance for the establishment of a management structure found in the IPURD, in which this approach is supported as a first step. This unit's mandate, functions and capacity for wider integration and coordination through the provision of the plans is disputable. Its preparation role is clearer, including the administrative support for physical intervention projects under the IPURD and its investment program agreed by the Managing authority of the OPRG 2014-2020. The synergetic effect outlined in the methodological guidance

for the IPURD (MRRB, 2012) and the demand for more innovative and adequate urban development, planning and regeneration stressed by many local experts (Forum for urban development, 2016) seem more attainable in the new programming period.

The scope of planned activities and interventions currently being realized or to be started in the remainder of the period include the following: a) the second phase of the "Integrated capital city transport" project with the reconstruction of tram lines and other rolling stock and traffic management related measures; b) the "Building and rehabilitation of zones for public leisure, parks, green areas, pedestrian alleys, subways and sidewalks, cycling alleys, sports playgrounds" in Zone 2 and Zone 4 of the historic city center within a public character zone; and c) the renovation of Zapaden and Vladimir Zaimov parks, the former in a zone with a public character and the latter in a zone with a social character. Several other projects are included in the program as reserves. Intensive critique of the immediate results has attracted public attention, but the long-term impacts are much more important. The amount spent on regeneration projects funded by the European Union altogether with the national co-financing in Sofia between 2014 and 2020 is EUR 92 million (CMRB, 2021a). It is doubtful whether any of these and other projects, focusing predominantly on physical improvement, will lead to more favorable conditions for the deprived urban neighborhoods.

The case of Piła (Poland)

Piła is located in the northern part of Wielkopolskie Voivodeship and has a population of 73,398 inhabitants (2018). In recent years, the city's population has declined slowly. Between 1999 and 2018, 2.2% of the population left the city. Piła was seriously damaged during World War II and after the war it was rebuilt almost from scratch. Services are the dominant branch of the city's economy.

Regeneration activities in Piła started as early as 2004 and were coordinated by the City Hall. Other actors involved in regeneration activities are primarily educational institutions. The private sector and non-governmental organizations were only slightly interested in the renewal of degraded areas. A regeneration committee has been operating in the city since 2018. To date, its activity has had little impact on the direction of regeneration of the city.

After Poland joined NATO in 1999, its army was restructured. This led to the liquidation of many military units, including those stationed in Piła. For this reason, the first regeneration program concerned post-military areas. Undoubtedly, the possibility of financing activities in post-military areas from European Union funds had an impact on this decision. The regeneration program for residential areas was created in 2013 and covered the city center. So far, it has been implemented to a limited extent. Therefore, regeneration projects implemented over the years have focused primarily on the adaptation of post-military facilities to new educational, recreational and sports functions. By the end of 2013, a total of EUR 25 million was spent on regeneration.

The new regeneration program drafted in 2017 covers both downtown areas and post-military and post-industrial areas. Training modalities and workshops for residents from different age groups are a strong focus of the program. In addition, plans have been made to regenerate green areas in the city center, modernize residential buildings, create new cultural facilities, and prepare former industrial areas for new production investments. The value of regeneration projects financed by the European Union funds in Piła in 2014-2020 amounts to EUR 4.2 million (Mapa dotacji UE, 2021). Regeneration financing is still based on European Union support and on the national assistance program called Package for medium-sized cities losing socio-economic functions.

The case of Gabrovo (Bulgaria)

Gabrovo is the center of a municipality and district by the same name, located in the North Central region, with a population of almost 54,000 inhabitants. The town has been shrinking since the late 1980s from a peak of more than 80,000 residents. Gabrovo was one of the first industrial centers, called the Bulgarian "Manchester". It continues to have an industrial profile, being the location of a technical university and schools specializing in mechanical engineering. It is trying to both specialize and diversify its economy, including in the mix of its activities creative industries and cultural tourism.

Pilot renovation activities started through demonstration projects and strategic planning for the energy efficiency of various types of public buildings, collective housing, public infrastructure and facilities such as lighting. An Energy Management Unit was established in 1999, consisting of representatives of various departments and working with multiple internal and external users. However, the renovation of separate buildings or facilities, basic water and sewerage infrastructure and public spaces such as parks or gardens are different from the area-based regeneration approach. One of the reasons is the dispersed character of urban decline and deprivation. Still, there are clear signs for areas with a concentration of decline. One example is the historic core with its small-scale fragmented physical structure and a large number of legal heirs of real estate. Other examples are the several bigger industrial sites restituted or privatized, yet not part of the local economic or social life. By the end of 2013, a total of EUR 19.3 million was spent on regeneration.

The 2013 IPURD contained various recipes for an integrated approach towards the regeneration of deprived zones. The municipality is trying to encourage citizen and business participation in the process through many soft measures such as the web-GIS portal, Gabrovo innovation camp, etc., yet interpersonal and socio-cultural challenges prevail.

The investment program stemming from the IPURD gives priority to public works (Koleloto Park and the adjacent neighborhoods, as well as parts of the town center with the Shivarov Bridge) and new construction of public infrastructure (the Eastern urban street). The reserve projects are oriented towards public works and open spaces in several housing estates, a park and reconstruction of the central square. The amount spent on regeneration projects funded by the European Union funds altogether with national co-financing in Gabrovo in 2014-2020 is EUR 10 million (CMRB, 2021b).

The strenuous efforts of the municipality to combine all sources of funding and to mix hard and soft measures in order to pull more opportunities are grounded in its severe demographic shrinking, but something more is needed for the synergy to happen.

COMPARISON

Research results indicate both shared features and differences in the regeneration paths in Poland and Bulgaria (Table 2). In both countries, EU funds are key to financing regeneration. Local authorities play an important role yet, with the exception of large cities, there is little interest of the private sector in regeneration activities.

of cities in several aspects. First, regeneration has been integrated in the strategic regional and urban policies of the two member states. There has been mobilization of public funds by national and local co-financing but also by supplementary public resources, especially at the local level. The gradual creation of a legal regeneration framework differs in the two countries, as in Bulgaria it is less focused on addressing integrated urban development. An increased interest in regeneration, its orientation and impacts, can be seen among various actors in the process. While private sector actors have become more involved in the regeneration activities thanks to the financial mechanisms, local government continues to play a decisive

Table 2. Main features of regeneration in Poland and Bulgaria
(Source: own compilation based on the criteria described in Stohr (1989), Lichfield (1992) and Roberts (2000))

Country	Poland	Bulgaria
Major strategy and orientation	Regeneration as one of the main strategies of urban development of the country. Striving for an integrated approach to regeneration, with an emphasis on solving social problems.	Regeneration as part of the national polycentric and integrated local and urban development approach. Emphasis on the physical problems for larger scale and multiple layers.
Key actors and stakeholders	Local authorities supported by residents, entrepreneurs, and representatives of NGOs.	Local authorities supported by many stakeholders at the strategy level, but implementation is strongly criticized.
Spatial level of activity, degree of devolution and empowerment	Emphasis on the local level; regional and national levels have a supervisory role. Mainly renewal of city centers, less importance of regeneration of post-industrial and post-military areas, promotion of community-led approach.	Strong links between national and local levels with priorities and a unified approach settled by the former. Rehabilitation and renewal of city and neighborhood public spaces and lack of a community-led approach.
Economic focus	Crucial role of EU funds larger than the local budgets, except for biggest cities. Weak integration of private capital.	Crucial role of EU funds larger than the local budgets, except for biggest cities. Weak integration of private capital.
Physical emphasis	Improving housing conditions, adaptation of buildings to new social roles, modernization of public spaces.	Infrastructure, public space and buildings rehabilitation, especially educational and cultural facilities.
Social content	Crucial in regeneration. Focused on counteracting poverty, unemployment and crime, as well as building a sense of community.	Few attempts to analyze more deeply social disadvantages. Several cases of social discontent due to poor communication in planning or political struggles.
Environmental approach	Little importance given to regeneration, emphasis on preventing air pollution in city centers.	Noise and air pollution indirectly addressed through emphasis on better pedestrian access.

The approach to physical and environmental issues is similar, yet in Poland much more emphasis in regeneration is placed on solving social problems. In both countries, the renewal of degraded areas is considered a major element of the countries' development policy, although in Poland regeneration clearly stands out from other public policies, and in Bulgaria it is an element of integrated urban development, although what was said in 2007 (ESPON, 2007, p. 127) that "Bulgaria's theory and practice could not be further apart" is still relevant to some extent in terms of the application of an integrated comprehensive approach of governance and planning.

CONCLUSIONS

The research carried out proved that the EU accession of Poland and Bulgaria has influenced the regeneration

role in regeneration programming and implementation. Despite attempts to create social advisory bodies (especially in Poland), the importance of social actors in regeneration is insufficient. For instance, there is no leadership capable of involving different social groups in regeneration. The priorities in the regeneration approaches in both countries are shifting slightly, from just being physical towards the involvement of social issues, although more practical evidence for this trend is needed to prove that the relevant impacts take place. In parallel, environmental justice for the most deprived neighborhoods and reuse of more peripheral industrial brownfields are not as high as necessary on the urban regeneration agenda. Although the rules set by the central government are unified, in Poland regeneration in larger cities is more advanced than in peripheral towns; in Bulgaria the opposite is more often the case. At the same

time, gentrification symptoms are emerging, especially in the core metropolitan areas. They are a result of regeneration in the absence of economic and social mechanisms which might alleviate such effects. Finally, the prevailing formalism and the conduct of national and local institutions, focusing on the absorption of EU funds, needs to move to the next stage. At that stage, the social and ecological problems and the potential of deprived urban neighborhoods should be addressed in earnest, bearing in mind the inequality patterns and creative destruction from the circulation of public and private capital.

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Received March 2021; accepted in revised form September 2021.

SPATIUM
No. 46, December 2021, pp. 11-21

UDC 378.6:72(94)"20"
316.644-057.875:331.5(94)"20"
Original scientific paper
DOI: https://doi.org/10.2298/SPAT2146011G

UNDERSTANDING PLANNING STUDENTS' SELF-PERCEIVED EMPLOYABILITY IN AN UNCERTAIN FUTURE

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Planning students are entering an increasingly competitive professional labour market. To understand their self-perceived employability and identify the employability-enhancing strategies they engage in to improve their graduate employment prospects, this paper analyses survey data collected from 106 undergraduate students at a large Australian university. Three key themes are identified as important for graduate employability from the perspective of planning students: education; personal attributes and assets; and appropriate professional experience. This study finds that many respondents were critical of the extent to which they believed their university studies were positively positioned for the real world of planning and positively positioned them to succeed in the graduate employment market relative to other planning graduates. To address these limitations, respondents emphasised the importance of developing personal and professional networks with peers and engaging in skills-enhancing activities, and revealed an expectation that they may need to engage in unpaid professional work experience. However, notwithstanding these efforts to actively moderate the impact of self-perceived personal skills and experiential deficits on their employability, there was a nascent acknowledgement that despite investing significant effort into developing networks, getting professional experience, and modelling appropriate attitudes and professional traits, they may become highly employable yet still fail to secure graduate employment as a planner due to structural constraints beyond their control.

***Key words*: graduate employability; higher education; planning education; self-perceived employability.**

INTRODUCTION

Employability outcomes and performance are not uniform across disciplines, and there is high student demand for discipline-focused employability-enhancing initiatives within higher education (O'Leary, 2017). In recent years, graduate employment outcomes for planning students have been in decline due to several structural factors, including a decrease in the availability of, and greater competition for, graduate positions more generally (Grant-Smith and Mayere 2017). In response, improving graduate employability has become an increasing focus in planning and geospatial sciences education (Arrowsmith and Cartwright, 2019; Bosman and Tomerini, 2019; Dowling and Ruming, 2013; Jackson *et al*., 2017; McCarthy and Bagaeen, 2015; McLoughlin, 2012). Employability in this context is a function of objective employability (i.e., actual labour market success) and subjective or self-perceived employability (Okay-Somerville and Scholarios, 2017) related to an "individual's perception of his or her possibilities of obtaining and maintaining employment" (Vanhercke *et al*., 2014, p. 593). In the case of graduate employability, this is usually qualified by reference to employment in a specific and desired discipline and at a level commensurate with one's qualifications (Yorke, 2006; Rothwell *et al*., 2008).

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The work it takes to enhance one's employability in the tightening graduate labour market is an analytically underappreciated dimension of employability and graduate employment debates (Smith, 2010). It is therefore important that studies of graduate employability be conducted within a specific disciplinary context and that these include consideration of the employability-enhancing strategies students deploy in efforts to become more competitive applicants for graduate employment opportunities (Grant-Smith and McDonald, 2016, 2018).

This paper explores the factors influencing undergraduate planning students' self-perceptions of their employability and the employability-enhancing strategies they deploy to address perceived deficits and become more competitive applicants for graduate planning employment opportunities. This paper commences with a review of the employability literature to establish key factors believed to influence employability (and employment outcomes). This is followed by an analysis of survey data collected from students enrolled in planning subjects at a large Australian university, in order to understand undergraduate planning students' self-perceptions of their employability and to identify the strategies they pursue to improve their graduate employment prospects. Finally, the paper concludes by considering the implications of these findings for planning education and identifying areas for future research.

GRADUATE EMPLOYABILITY

Education and training were once believed to provide access to graduate employment markets, however, models of employability focussing on the individual have adopted a more nuanced approach which includes skills, experience and personal qualities and attributes as important factors in creating employability (Figure 1). The dominant employability models focus on creating employability through a mix of transferable hard and soft skills, qualifications and experience, combined with competencies such as self-appraisal and professional identity (Gedye *et al*., 2004). In such models, self-efficacy, self-esteem and self-confidence are considered "the key" to successfully translating these into employment outcomes (Dacre Pool and Sewell, 2007, p. 281). Self-perceived employability in undergraduate students thus incorporates the self-evaluation and deployment of a wide range of human capital, including social, cultural, psychological, scholastic, and market-value capital (Donald *et al*., 2019). The ability to identify and realise career opportunities through the capacity to define oneself in a career context, alongside personal attributes, such as adaptability and emotional intelligence and the possession and deployment of social networks, have also been identified as defining attributes of employability (Fugate *et al*., 2004). Students who possess a strong sense of their career goals and a positively-oriented, yet realistic, understanding of their skills and abilities are more likely to perceive they possess high levels of employability (Bridgstock, 2009).

Despite the dominance of employability discourses in higher education, a common critique is that they tend to overemphasise individual responsibility and agency while understating the influence of social inequalities on employment outcomes (McDonald *et al*., 2020; Moreau and Leathwood, 2006; Tomlinson, 2017). This individualised focus may work to obfuscate the role of structural (Tholen, 2013) and intersectional (Qenani *et al*., 2014) factors in influencing both employability and employment outcomes, which may have potentially damaging consequences for students (Osborne and Grant-Smith, 2017). Planning graduates are entering an increasingly competitive labour market that is strongly dependent on economic cycles (Grant-Smith and Mayere, 2017). Employability must therefore be understood as "relational, contextual, and, most importantly, conflictual" because employment outcomes are dependent not only on the capabilities and actions of a graduate, but also on those of other graduates and labour market aspirants (Tholen, 2013, p. 770). Literature examining planning graduate transition into work identifies professional, educational and structural issues and misfits experienced by these aspirants that challenge entry into professional roles (Willson, 2018; Taşan-Kok *et al.*, 2018). Employability is shaped not only by the actions, capabilities and self-perceptions of an individual graduate, but also by factors outside their immediate control such as the capabilities and relative advantages possessed by other graduates, alongside structural, economic and social factors (Suleman, 2018). A more holistic understanding of graduate employability must therefore recognise the contributions of both individual and contextual factors (McQuaid and Lindsay, 2005), including individual attributes and behaviours and the graduate labour market (Clarke, 2018).

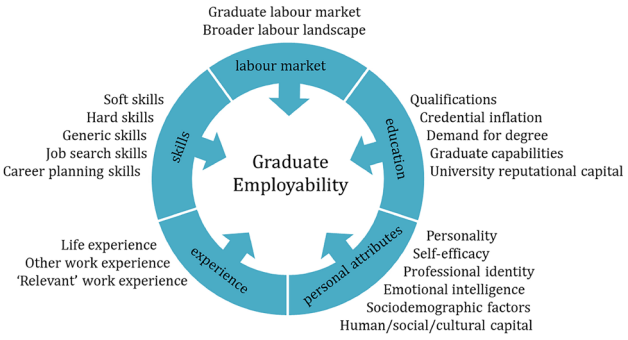

Figure 1. Key contributors to employability

This broader and more contextualised and integrated understanding of employability suggests that graduate employment outcomes are shaped by a combination of educational, structural, experiential, organizational, and personal factors (Guilbert *et al*., 2016). However, the extent to which planning students recognise this complex interplay and the potential impact on their employability remains unclear. A deeper understanding of planning students' self-perceived employability and the extent to which they recognise or attempt to mitigate the influence of factors that may impact their labour market success is required.

METHODOLOGY

Accessing student voice is imperative for understanding self-perceived employability and the personal and professional strategies adopted to enhance individual employability

(Tymon, 2013). Taşan-Kok *et al*. (2018) also identify a need to give voice to young practitioners in planning. Data was collected using a paper-based survey administered to students enrolled in planning at a large Australian university. One unit from each level of study in a four-year undergraduate planning program was selected and the survey was administered to students during a lecture for that unit. Participation was voluntary and students were able to opt out of participation by returning all surveys (completed, partially completed or not completed) to an envelope collected by a research assistant. Institutional ethics approval was granted to conduct this research. A total of 106 students completed the survey. There was a relatively even spread of respondents (54% identified as female, 44% identified as male and 2% identified as other or chose not to disclose their gender).

Informed by the work of Rothwell and Arnold (2007), Rothwell *et al.* (2008, 2009), and Smyth *et al*. (2015) on self-perceived and graduate employability, scaled questions focussed on perceptions of planning as a discipline, the reputation of their university, the state of the external labour market, and confidence in securing employment, as well as measures associated with paid and unpaid work experience. Respondents rated their agreement with a series of statements on a five-point Likert-type scale of strongly agree to strongly disagree with a neutral option to measure respondents' attitudes to each statement. Because using the mean as a measure of central tendency has been questioned for analysing ordinal data (Sullivan and Artino, 2013; Jamieson, 2004), the distribution of responses for each statement was calculated as a percentage of total responses.

Qualitative data was collected through four open-ended questions (Table 1), soliciting responses about perceptions of the required skills, barriers and other factors influencing the ability to secure paid employment as a planner, and advice to commencing students for maximising their employability and graduate employment outcomes.

Table 1. Open-ended questions

Please list the skills you think are required to get a job as a planner
In your opinion what are the most important factors in gaining graduate employment as a planner?
What do you think the barriers will be to you gaining a job as a planner?
What advice would you give to someone starting their degree so that they can maximise the chances of gaining employment in their chosen profession? Your advice can include work, study, and anything else you think is important.

As shown in Table 2, qualitative data were analysed through a phased process of thematic analysis via hand-coding (Saldaňa, 2012) using the anchor codes (Adu, 2019) of skills and attributes, barriers, and advice. A hybrid approach of inductive and deductive coding and theme development has been advocated for understanding social phenomena (Fereday and Muir-Cochrane, 2006) within a specific context (Azungah, 2018). Because many students responded with lists and short phrase responses, these were first deductively coded using codes that emerged from the employability and graduate employment literature (Linneberg and Korsgaard, 2019). Interpretive codes were then applied through an analytical reading of the data. A subsequent axial coding process refined the codes into three categorical themes: educational, personal, and experiential. The findings of both qualitative and quantitative analysis are reported against these themes.

Table 2. Thematic Analysis Strategy

Initial inductive descriptive codes *(coding)*	**Interpretive codes *(sorting and categorisation)***	**Themes *(synthesising)***
capital (human/ social/cultural) degree/qualification discipline skills/ knowledge discipline status education/training emotional intelligence generic/soft skills hard skills/technical knowledge job search/career planning skills labour market/ competition life experience personality traits professional identity self-efficacy/self-confidence sociodemographic factors university status work experience (relevant) work experience (other)	academic performance degree/discipline reputation/status graduate labour market industry/ professional experience job seeking/career planning skills non-professional work experience personal qualities/ attributes social capital university reputation/status	Educational Personal Experiential

THE PERCEIVED INFLUENCE OF EDUCATIONAL FACTORS ON EMPLOYABILITY

The demand for urban and regional planners has been stable and is projected to continue to grow over the next five years (JobOutlook, 2019). For occupations like planning, participation in formal education is an increasing expectation to access labour markets; indeed, the latest Australian data reports that 100% of urban and regional planners possess either a bachelor-level degree (66%) or postgraduate qualification (34%) (JobOutlook, 2019). As a result, by virtue of their enrolment in and expected completion of a planning degree, most respondents perceive themselves as meeting the educational requirements for securing employment as a planner. Possession of a degree is not a guarantee of labour market success because formal qualifications have become "declining currencies" (Tomlinson, 2017, p. 15) due to the massification of higher education, making it more difficult for employers to use the possession of credentials alone as a selection tool (Roulin and Bangerter, 2013; Tomlinson, 2008). Additional credentials can be required, which creates difficulties for graduate planners. For example, the national professional body, Planning Institute of Australia, promotes

Registered Planner accreditation based on five years of experience, and continuing professional development (Buzsko, 2017). Additionally, according to JobOutlook (2019), most employers sought at least five years of experience despite graduates being available for work. Table 3 reports on the perceived influence of three key educational factors on employability: academic performance, university reputation, and disciplinary status.

majority agree that possession of the degree alone is not enough to secure employment. A compensatory strategy was the strategic decision to offer employers a broader skills-set developed through taking '*a subject that teaches you to use programs such as InDesign, Photoshop and Illustrator*'. Such an approach was seen to provide a competitive advantage by possessing more than the standard planning skills set as a result of tailoring their education through the selection of

Table 3. Perceptions of the contribution of educational factors to graduate employability (%)

	strongly agree	agree	neither agree nor disagree	disagree	strongly disagree
Academic performance					
A degree/qualification is important in gaining graduate employment as a planner	55.7	40.6	2.8	0	0
Having a degree is not enough to get a good job	39.6	34.0	14.2	8.5	3.8
Academic performance is important in gaining graduate employment as a planner	18.9	59.4	15.1	6.6	0.0
I achieve high grades in relation to my studies	27.6	59.0	11.4	1.9	0.0
I regard my academic work as my top priority	24.5	56.6	12.3	6.6	0.0
University reputation					
University attended is important in gaining graduate employment	22.6	51.9	19.8	4.7	0.0
My university has an outstanding reputation in my field of study	25.7	52.4	21.0	1.0	0.0
The status of my university is a significant asset to me in job seeking	17.9	61.3	18.9	1.9	0.0
Employers are eager to employ graduates from my university	15.2	59.0	21.0	4.8	0.0
Employers target my university to recruit individuals from my subject area	8.6	43.8	41.9	5.7	0.0
Disciplinary status of planning					
A lot more people apply for my degree than there are places available	4.8	12.5	51.9	21.2	9.6
My degree leads to a specific career perceived as highly desirable	8.6	45.7	38.1	5.7	1.9
Being a planning student is important to me	38.1	46.7	12.4	1.9	1.0
I would rather NOT tell people that I am a planning student	0.0	2.8	14.2	19.8	63.2
Planning students have a lot to be proud of	22.6	51.9	22.6	2.8	0.0
I have a lot of respect for students in my field of study	27.4	55.7	14.2	2.8	0.0
Planning ranks highly in terms of social status	2.9	21.0	60.0	12.4	2.9

A way of mitigating the perceived declining value of formal qualifications is through high levels of academic performance. A sizeable proportion of respondents agree that academic performance is important in gaining graduate employment. This emphasis on the importance of good grades is perhaps connected to its relationship with the virtue of '*studying hard*', whereby achieving good grades could be understood as a proxy for demonstrating a strong work ethic, performance potential and reliability to potential employers. Grades can thus be perceived as both an indicator of academic performance and of possession of the personal qualities that an employer may value, as the non-planning electives, in order to exceed workplace needs and expectations for planning graduates.

The classed and subjective nature of the graduate labour market (Tomlinson, 2012) means that factors outside the control of the students influence the value of their education and qualifications (Qenani *et al*., 2014). This includes the university's reputation (Pitan and Muller, 2019). The majority of planning students surveyed agree that the reputation of the university attended plays a significant role in their employability. Although planning students in this sample agreed their specific university conferred reputational advantage and status (which they believe

to be relatively high), they also indicated a high rate of neutrality (or uncertainty) (42%) about whether employers specifically target graduates of their university, compared to 52% agreeing or strongly agreeing that this was the case. This is also reflected in student comments, which state that other universities offering planning programs in the local area are perceived as having better industry links. Competition between planning students and the reputational advantage conferred to planning students of elite universities was noted and based on '*connection to top institutions compared to [my university]*'. It, therefore, appears that there may be a disconnect between the importance that students place on academic reputation, particularly institutional reputation, and the relative lack of importance that employers have been found to place on this when hiring graduates (Finch *et al*., 2013). Based on interviews with employers and recruiters, Finch *et al*. (2013) found that when hiring new graduates the highest emphasis is placed on the possession of soft skills, and the lowest on the academic reputation in terms of university attended, program completed and individual academic performance (grade point average). However, it is also important to note that attendance at an elite university may also confer unobservable attitudes such as self-confidence and self-efficacy (Drydakis, 2015), as well as access to professional networks.

Respondents showed signs of a nascent professional identity, with a strong level of agreement that being a planning student is important to them. However, they are more ambivalent regarding the status of planning as a profession and the competitiveness of entry into the degree, with more than half neither agreeing nor disagreeing that more people apply for the degree than there are places available, and a further 30% of respondents disagreeing and strongly disagreeing that it is competitive. Despite this, the majority of respondents indicated they disagreed or strongly disagreed with the statement that they would rather not tell other people they are a planning student. Indeed, a sizeable majority agree or strongly agree that planning students have a lot to be proud of, and express respect for other planning students. These responses indicate that planning students may be seeking a career in planning for reasons other than social status and that the profession remains a source of professional or social identity.

TRANSLATING EMPLOYABILITY INTO EMPLOYMENT OUTCOMES THROUGH PERSONAL ASSETS

Individual traits and disposition, such as personality and personal adaptability (Clarke, 2018; Fugate and Kinicki, 2008), combined with self-efficacy, self-esteem and self-confidence are believed to be important personal assets in self-assessments of employability (Dacre Pool and Sewell, 2007). Table 4 reports respondents' self-perceived employability alongside a self-assessment of their capacity to translate these into employment outcomes against three measures: personal attributes and qualities; job-seeking abilities; and social capital.

Planning students appear to be most confident that they possess the requisite personal qualities and attributes and to 'sell' these to potential employers. However, this level of confidence is only marginally strong. They expressed the least confidence in their possession of the requisite professional knowledge to be competitive on the planning job market and their ability to convincingly communicate this to potential employers. This was perhaps also connected to their lower levels of confidence in their ability to perform well in recruitment activities. An example of this is anticipated or experienced difficulties in communicating their value to planning employers, with one respondent commenting, '*my barrier is selling myself, my qualities and my skills. I think I am a great student and professional but I struggle to communicate that*'. However, even students who possessed a greater level of confidence in their ability to do so noted an implicit tension in '*being able to be confident and reasonable with abilities without coming across as arrogant or overly confident*'. This tension suggests graduates are endeavouring to fit into employment cultures they perceive as expecting them to stand out but not too much.

Bridgstock (2009, p. 31) suggests that the ability to "proactivity navigate the world of work and self-manage the career building process" is an essential component of employability. It is of concern therefore that another area where planning students appeared to be lacking confidence was concerning their broader job-seeking abilities, with the lowest level of confidence across all categories being the ability to easily find out about planning job opportunities. Central to this ability is identity work, which supports "learning about growth sectors, about demands for new skills and how to acquire them, understanding how to access pathways to 'good' jobs, finding jobs and holding onto them" (Smith, 2010, p. 284). However, exercising this identity work also requires high levels of social and cultural capital (Smith, 2010), which students seek to develop through networks. Professional networks are perceived by respondents as being more influential than personal networks in shaping employability, but the reality is that there is often little difference between these in the early stages of a career in planning, because students seek to turn to their advantage the professional networks of their friends, families, lecturers and tutors. The strategic use of these relationships was clearly articulated by one respondent, who advised others they should attend *'networking events [and] make friends/connections with your cohort, those relationships will be important later in life!'*. This emphasis on cultivating a professional persona and connections early on was also evident in advice to establish a professional social media presence and to develop (and promote) stand-out qualities that set them apart, by communicating both suitability and uniqueness to create a competitive edge.

EMPHASISING THE EXPERIENTIAL ELEMENT OF EMPLOYABILITY

Brown *et al*. (2003) argue that, ultimately, employability is about the state of demand for labour and the amount of competition from other applicants rather than the inherent personal and educational characteristics of the individual alone. Table 5 reports planning students' assessments of the contribution of these factors to their employability.

With employment prospects and demand for graduates, as indicative of labour market dynamics, planning students express significant uncertainty about their graduate

Table 4. Self-assessed influence of personal assets on employability (%

	strongly agree	agree	neither agree nor disagree	disagree	strongly disagree
Personal attributes and qualities					
Personal qualities are important in gaining graduate employment	53.8	34.9	11.3	0.0	0.0
I am confident I have the personal qualities and attitudes required	35.2	50.5	13.3	1.0	0.0
The skills and abilities I possess are what employers are looking for	14.6	60.2	21.4	2.9	0.0
I feel I could get any job if my skills and experience are reasonably relevant	21.9	50.5	16.2	10.5	1.0
I am confident I have the skills required to secure graduate employment as a planner	21.0	62.9	12.4	2.9	1.0
I am confident I have the professional knowledge required to secure graduate employment as a planner	14.3	53.3	25.7	6.7	0
Job-seeking abilities					
I can easily find out about job opportunities in my chosen field	11.3	43.4	19.8	21.7	3.8
I am generally confident of success in job interviews and selection events	11.4	42.9	30.5	13.3	1.9
I am confident I can sell my personal qualities and attributes to a potential employer	26.7	47.6	21.0	4.8	0.0
I am confident I can sell my skills to a potential employer	18.1	54.3	18.1	9.5	0.0
I am confident I can sell my professional knowledge to a potential employer	14.3	42.9	36.2	6.7	0.0
Social capital					
Personal networks are important for gaining graduate employment as a planner	43.4	47.2	9.4	0.0	0.0
Professional networks are important for gaining graduate employment as a planner	61.3	34.9	3.8	0.0	0.0
Professional memberships are important for gaining graduate employment as a planner	8.6	48.6	31.4	10.5	1.0

Table 5. Perceptions of the contribution of labour market and experience to graduate employability (%)

	strongly agree	agree	neither agree nor disagree	disagree	strongly disagree
Labour market					
There are plenty of job vacancies in the geographical area where I am looking	2.8	15.1	49.1	25.5	7.5
There is generally strong demand for graduates at present	3.8	23.8	45.7	24.8	1.9
Planners are in high demand in the labour market	3.8	42.5	44.3	9.4	0.0
Luck is important in gaining graduate employment as a planner	19.8	44.3	20.8	8.5	6.6
Industry experience					
Prior professional work experience is essential to getting a good job once you graduate	50.9	38.5	8.5	4.7	0.0
Employers prefer to employ graduates with relevant professional work experience	58.5	33.0	8.5	0.0	0.0
Paid work experience prior to graduating is common in my chosen profession	9.5	25.7	45.7	17.1	1.9
Unpaid work experience is common in my chosen profession	37.1	29.5	25.7	6.7	1.0
No one should have to work for free	27.4	24.5	30.2	16.0	0.9
Everyone should expect to have to do some unpaid work at the beginning of their career	23.6	42.5	20.8	10.4	2.8
Gaining professional experience is more important than getting paid	40.6	37.7	16.0	4.7	0.9
I will probably need to do some unpaid work experience to get a job in my chosen profession	51.9	35.8	7.5	3.8	0.9
Non-professional work experience					
Prior non-professional work experience is important in gaining graduate employment as a planner	19.8	38.7	28.3	7.5	4.7
Employers value the skills gain through non-professional jobs such as working in a supermarket or fast-food restaurant	7.5	43.4	26.4	17.9	4.7

employment prospects. Many are unsure about the labour market they will enter into or the opportunities available to them. Fewer than half of the respondents agreed that there is a high demand for planners and believe this demand is even weaker for graduates. This recognition of the objectively worsening graduate employment outcomes for planning students and local labour market shrinkage in Australia (Grant-Smith and Mayere, 2017) is combined with acknowledgement that labour markets are also increasingly competitive as the pool of graduate job opportunities is limited and unevenly geographically distributed. They are most pessimistic about the availability of planning job vacancies in the local area (south-east Queensland), which could be connected to the intense competition for jobs in a region where there are six universities across eight campuses offering undergraduate planning degrees, graduating over 100 planners each year. This should be understood in the context of the broader planning labour market, in which in 2019 there were only 14,300 planners employed in the whole of Australia (ABS, 2020).

Within our sample, there was a strong level of agreement that employers prefer employing graduates with relevant professional work experience, and within this crowded labour market, these expectations are largely realized. This expectation for the possession of experience before gaining paid employment was articulated by one student who said *'graduate jobs these days ask for two years' experience [but] how do you get that whilst studying full time?'.* It is important to note that in this context, work experience specifically refers to relevant industry experience. Graduating students enter the labour market with significantly less industry experience than the two years identified by a student and five years favoured by employers (JobOutlook, 2019), with 19 of 44 final year student respondents achieving 60 or more days' industry experience, and a further 11 students indicating they had no industry experience. Although most of the students in the sample had non-professional work experience, they did not believe that planning employers valued the skills gained through non-professional work experience, such as working in the retail or hospitality industries. This view is supported by interviews conducted by Grant-Smith and McDonald (2016, 2018), who found that many planning students had experienced limited success translating their non-professional work experience into a commodity that appealed to planning employers.

To redress these employer work experience expectations and enhance student employability, increasing numbers of planning courses have incorporated experiential learning into their programs (Baldwin and Rosier, 2017; Brooks *et al*., 2002). The current emphasis on employability as an individual responsibility (Sin *et al*., 2016) elevates student behaviour, attitudes and skills as the dominant factor in determining employment outcomes, and positions employability as a quality the graduate must work to cultivate in order to achieve graduate employment. In recent years, this has involved an increasing focus on the importance of participation in pre-graduation professional work experience as a key employability-enhancing strategy (Grant-Smith and McDonald, 2016). Work-integrated learning activities such as a planning practicum enjoy high levels of institutional and student support (Coiacetto, 2004; Freestone *et al*., 2006). In addition to formal work-integrated learning opportunities provided through practicum placements, students are also choosing to engage in a range of paid and unpaid professional work experience activities to enhance their employability (Grant-Smith and McDonald, 2016). Indeed, work experience, whether paid or unpaid, is believed not only to enhance personal capital, but to also compensate for differences in reputational capital between universities (Grant-Smith and McDonald, 2018).

Perhaps as a direct result of this push, some of the planning students in our sample emphasised the absence of sufficient experience being a factor against which their employability would be judged. This resulted in a tension where students overwhelmingly advocated the need for professional work experience, but also noted that while unpaid work experience opportunities are somewhat common in planning, being paid for this experience was less common: *'take the time and make the effort to get work experience. If it's unpaid, yes it sucks but you need to suck it up. Unfortunately, students who are green in the field are essentially not worth much'.*

While more than half of the planning students surveyed agreed that no one should have to work for free, most agreed that they would probably need to undertake some unpaid work experience to gain professional employment and agreed that gaining experience was more important than getting paid. Indeed, some students suggested that gaining professional work experience should even be prioritised over study, based on the belief that experience is the defining factor in securing graduate employment as a planner: *'Quite often the professional industry no longer looks towards tertiary qualifications. When applying for jobs 9/10 employers rejected my application due to lack of industry experience. I believe practical and loggable hours is seen as more desired rather than a degree of qualification'.*

DISCUSSION

Planning students perceive and construct employability in a context that is unclear to them, and in which they perceive graduates and geographic areas to be disadvantaged, forming their perceptions and expectations as they interact with and encounter changing contexts. Planning students assert agency in their responses to demonstrate their worth as integral to employability, even though they are uncertain about the labour market; they identify and are attentive to where they exert agency and act per their employability-enhancing strategies. This includes not only how hard they work in their studies and how they present to prospective employers, but also in the shaping of strategies to compensate for or diminish perceived deficits. As such, they are constructing their employability in response to their subjective experiences and perceptions of their education and employment prospects.

The all-pervasive focus on employability requires students to "construct and continuously reconstruct their 'self' to render them attractive on the labour market" (Precarious Workers Brigade, 2017, p. 8). This was evident in this research, where planning students' employability-enhancing strategies reflect a subjective and interpretive attempt to make sense

of their fit in the labour market in relation to others. Through these strategies, students seek to position themselves as graduate planners, yet they do so with some uncertainty about a changing employment landscape and a relatively low level of working knowledge of the industry they seek to enter. Facilitating this transition requires significant self-invention and self-improvement through the acquisition of professional work experience, evidence of disciplinary skills and knowledge through educational qualifications, and the demonstration of selective personality traits to gain a positional advantage. This self-interrogation process results in planning students cataloguing their perceived deficits and attempting to enact employability-enhancing strategies to overcome them.

Students' responses reveal tensions between 'deficits' – such as lack of professional networks or specific skills – and their exertion of agency to address those deficits. The relationship between perceived deficits and doubt can be overwhelming (Willson, 2018). However, the catalogue of assets and deficits presented in Figure 2 suggests that respondents have taken on the task of enhancing their graduate employability and are somewhat satisfied with the results. However, the assessment would also suggest that planning students are aware of structural factors which impact their employability, such as the graduate labour market. There are also deficits that students cannot remedy alone, and which planning education may have a role in addressing as societal challenges mount and provoke transformative industry responses (Frank and da Rosa Pires, 2021). For example, career planning and management skills could be better embedded in planning education, particularly in courses where participation in an industry-based practicum is an expectation. Career planning for planners, as Willson (2018) describes, should be reflective and adaptive. In the curriculum, this could focus on assisting planning students to 'translate' for an industry audience the value that their non-professional work experience brings to planning work. Greater attention could also be paid to increasing students' awareness of their professional knowledge, which may simply require a more explicit connection to be drawn between real-world applications and what they have learnt in class, rather than simply offering more and longer unpaid work experience.

Given their self-reported lack of real-world experience and reliance on seeking advice from and accessing the professional contacts provided by academic staff, future research should consider the extent to which planning students make judgements about employability and the employment labour market based on their own experiences of job seeking or feedback from peers (including those who have graduated before them) and academic staff, which students may have internalised as 'fact'. We concur with Johnston (2003) that further research is required which compares the extent to which students' self-perceived employability is realised in their postgraduate employment, that is, there is a need to engage with graduates regarding their actual employment experiences and outcomes rather than their pre-graduation perceptions alone. As this research was undertaken before the outbreak of Covid-19 and the ensuing shocks experienced by the higher education sector, the labour market and the economy more generally, it is possible that student perceptions of their employability may have further deteriorated. However, it is also possible that economic recovery programs built on construction and infrastructure may potentially result in more positive conditions for planning graduates. The question remains whether planning education is sufficient to meet the changing and complex societal challenges thrown up by the pandemic, and graduates' capacity to respond to these (Frank and da Rosa Pires, 2021). As such, further research into student and graduate perceptions of employability during such volatile conditions is warranted. In this context, a potentially fruitful area of inquiry is in relation to developing a deeper understanding of students' intentions to pursue a career in planning in relation to both professional identity and self-interest dimensions (Tsakissiris and Grant-Smith, 2021). Further, as planning is not a wholly vocationally-oriented degree, another potentially productive line of inquiry surrounds the transferability of planning education to other occupational outcomes.

Figure 2. Self-identified assets and deficits of planning students in the context of graduate employabilty

Planning students are perhaps accurate in their assessment that employers have a high level of expectation that graduates will have most of the soft skills and attributes required to perform a role at the time of appointment, but contrary to the planning students' expectations, Hinchcliffe and Jolly (2011) find that employers are prepared to wait for up to a year for some technical skills to develop. Of course, Hinchcliffe and Jolly are quick to point out that this does not mean that employers necessarily rate soft skills as more important than hard skills, but rather that they are perhaps more influential in initial hiring decisions for graduate roles. Hinchcliffe and Jolly (2011) similarly found that the possession of soft skills, such as written communication and interpersonal skills, was rated more highly than work experience, and that non-professional work experience, such as 'vacation jobs', were valued as they demonstrated that capacity and opportunity to exercise soft skills in a work environment. Of course, this would need to be tested

with planning employers, but it may suggest that there has been an overemphasis on professional work experience, particularly unpaid work, as an employability-enhancing activity. However, given the current emphasis by students, employers and institutions on the importance of professional work experience, much of which could be expected to be unpaid, it is imperative that planning education include information about students' rights and responsibilities as members of the planning workforce (Grant-Smith and McDonald, 2016).

Recent research has explored the impact of sociodemographic factors on employability (e.g., see O'Leary, 2021). Future research should explore the impact of intersectional factors such as gender, ethnicity and class on the self-perceived employability of planning graduates. Finally, administering this survey to planning students from other universities or national contexts could contribute to a more general understanding of the self-perceived employability of planning students and provide the opportunity to tease out differences between different national contexts and educational regimes.

CONCLUSION

Despite regarding their formal education as an essential element of graduate employability, planning students perceive the possession of professional experience as being key to translating that employability into graduate employment, and are largely resigned to undertaking extended periods of unpaid work to positively position themselves in the employment market relative to other planning graduates. The extent to which this increasing focus on facilitating more and longer work-integrated learning experiences and unpaid work experience may be a contributory factor in the loss of paid graduate opportunities by conditioning both employers and graduates to expect that unpaid work is the only path to paid employment is unclear (Osborne and Grant-Smith, 2017). But what is clear in this research is a troubling undercurrent of student commentary that without this work they were '*not worth much*'. Consequently, perceptions of their employability are significantly weighted by self-assessments of deficits. This is concerning given the importance of self-confidence in employability (Dacre Pool and Sewell, 2007).

The very concept of employability has been subject to debate, especially around the notion of achieving higher levels of employability for graduates without focussing on structural barriers to positive graduate employment outcomes (Tholen, 2013). Students, educators and employers need to get past the idea that a 'positive' attitude (Andrews and Russell, 2012) combined with participation in unpaid work experience will somehow launch graduates into employment (Jackson *et al*., 2017). Indeed, Brown *et al*. (2004) have noted that graduates can be highly employable but remain unable to secure gainful employment in their desired career. Certainly, it is the job of planning education to ensure that its graduates possess the skills to pursue multiple career paths, but perhaps it must also recognise its responsibilities in educating the employers of planning graduates to have realistic expectations about what to expect in and from a graduate, rather than placing an unachievable employability burden on its students.

Acknowledgements

This research received funding from a Queensland University of Technology Learning and Teaching Grant.

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Received March 2021; accepted in revised form August 2021.

SPATIUM
No. 46, December 2021, pp. 22-35

UDC 725.1:355/359(497.11)
711.4(497.11)
Original scientific paper
DOI: https://doi.org/10.2298/SPAT2146022J

THE REDEVELOPMENT OF MILITARY BARRACKS BETWEEN DISCOURSES OF URBAN DEVELOPMENT AND HERITAGE PROTECTION: THE CASE STUDY OF NIŠ, SERBIA

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Areas of disused military barracks are commonly exploited as a land resource that is attractive for redevelopment, within the urban city area. Their commercial potential is high on the list of attractiveness, primarily based on the value of the site's disposition, size, and capacity for redevelopment in terms of rebuilding. Contemporary architectural practice is often directed towards urban redevelopment projects in military areas whose position and other characteristics are valued by investors as crucial commercial benefits. These sites may be places of tangible cultural heritage based on recognized architectural heritage and social memory. The paper presents a comparative study of the redevelopment of two former military barracks in Niš - Bubanjski Heroji and Filip Kljajić. These sites share the same disposition within the city but diverge in terms of their size, historical importance, and discourse of redevelopment. The comparison is presented from four perspectives: planning, built heritage, public perception, and cultural meaning. By examining the transformation of the complexes, the paper aims to perform a critical review which compares the reality of urban transformations in Serbia with the theoretical background and current urban regeneration policies promoted worldwide. This paper exploits the HUL approach, an integrated approach to urban management promoted by UNESCO, by extracting and analyzing four principles: the historical layering of cultural and natural heritage and attributes, dynamic character of urban space, promotion of social diversity, and balanced relation between artificial and natural. The conclusions highlight the difference between the local practices of commercially- and heritage-led redevelopment in order to suggest some improvements for similar redevelopment projects in the future.

Key words: **urban redevelopment, built heritage, HUL approach, military barracks, Niš.**

INTRODUCTION

New urban models using previously built areas that have lost their original purpose, known as brownfields, have been intensively considered in recent decades (Tang and Nathanail, 2012). Western countries have faced brownfields mostly as a result of deindustrialization processes (Sýkora and Bouzarovski, 2012). Industry has vanished from densely built-up urban areas because of better business opportunities elsewhere (cheaper land, construction costs, and labor with fewer ecological requirements), moving production dominantly into less developed countries and leaving former facilities empty and unused. On the other hand, in the states of the former Eastern Bloc, industrial production collapsed as a consequence of political changes that transformed state-directed economies into free markets, leading to the closure of numerous unprofitable and uncompetitive production sites (Hirt, 2013). Despite different narratives between East and West, the brownfields left in cities are their common problem. Brownfields can be found both in central urban areas and on the periphery. While older sites, with richer history and heritage, are more

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common for central urban areas, more recent developments (post-WWII industry) are distributed on the periphery of cities. Brownfields degrade the urban environment visually, economically, socially, and ecologically (Bullen, 2007). Their existence causes a decrease in the economic value of real estate in neighboring areas, an increase in insecurity, environmental pollution and the loss of identity of the city, which often leads to the exodus of the surrounding local population (Perović and Kurtović-Folić, 2012; Špirić, 2015).

The redevelopment of former industrial, military, traffic, or other types of brownfield areas has been noticeable in cities since the end of the 20th century as a part of sustainable urban regeneration strategies and policies. Sustainability has leaned on brownfield redevelopment, focusing on the clean-up of toxic industrial residues, adding value to the sites by building new or reusing old structures, and providing job and housing opportunities within transformed urban areas. This has also been justified because it reduces urban sprawl, promotes and protects the built and industrial heritage, maintains the identity of the place, and provides affordable space for both commercial and non-commercial uses (Oevermann and Mieg, 2015). Thus, brownfield regeneration creates local economic prosperity and employment, whilst increasing the land value and eliminating environmental pollutants (Malek and Matev, 2014). Sometimes the area is simply converted into green space (Atkinson *et al*., 2014; Kristianova *et al*., 2016). From the spatial aspect, the main benefit of redeveloping brownfield areas is to form opportunities for their reuse, existence, revival, and integration into the inherited and new landscapes, changing their physical and functional structure while preserving the urban and built heritage (Jevremović and Turnšek, 2011; Doleželova *et al*., 2014).

The culture-led (heritage-led) and commercially-led approaches are the most prominent regeneration policies, established throughout decades of redeveloping brownfield areas (Sacco *et al*., 2014; Jocić, 2020). While in the early days, preservation policies focused on the conservation and preservation of particular monuments and buildings, contemporary urban regeneration policies are striving for more balanced and sustainable concepts of managing the built heritage (Goncalves *et al*., 2020; Guzman *et al*., 2017). Also, since the 1970s the importance and need for holistic approaches in overall urban management has grown (Gonzalez Martinez, 2017), and challenges faced at the turn of the millennium pushed UNESCO to take a more active role in mapping the road for sustainable development (Erkan, 2018). Its focus shifted from heritage conservation to heritage management, resulted in adopting the Recommendation on Historic Cultural Landscapes (HUL) in 2011, acknowledging that urban areas are dynamic entities in which development and conservation are supposed to supplement each other in a joint process (Martini, 2012). The HUL Recommendations are the first instrument developed after 35 years to manage problems arising from rapid urban development, and they propose an integrated approach that would place development and the conservation of urban heritage on the same plane (UNESCO, 2011).

The emergence of military brownfield areas in cities is connected with the well-known geopolitical changes at the end of the 20th century (the fall of the Berlin Wall in 1989, the end of socialist regimes in almost all Eastern Bloc countries). Due to military reorganization and policy restructuring, many military areas and defense bases, once built on the periphery of cities and towns, today belong to the urban core, but they have lost their original function and purpose (Jauhiainen, 2007; Simonović and Ilić, 2013). Cities that have previously undergone complex transformations caused by industrialization, urbanization, and later deindustrialization and suburbanization are now faced with demilitarization processes. In Eastern Bloc countries, transitional reforms announced after the fall of the ruling socialist regimes resulted in the formation of post-socialist cities (Hirt, 2013). In the political sense, in order to achieve a democratic system, the transition to a multi-party government system and decentralization occurred. The former socialist countries of Eastern and Central Europe went through two phases of demilitarization: 1) between 1988 and 1995, marked with wars, the disintegrations of former Soviet republics (USSRS, SFRY, Czechoslovakia) and the demobilization of military units, and 2) from 1995 until the beginning of the 21st century, when the size of the national army decreased (Glintić, 2015). These circumstances have resulted in the abandonment of military premises and a reduction in the number and size of military bases. In recent decades, these areas and properties in post-socialistic countries have also become the subjects of redevelopments projects (Jarczewski and Kurylo, 2010; Hercik *et al*., 2014; Glintić, 2015).

International research so far has mainly focused on examining the principles and possibilities for the revitalization and adaptive reuse of military areas, with the emphasis on barracks and garrisons (Gatti and Cacciaguerra, 2014; Hercik *et al*., 2014; Morar *et al*., 2016; Zagroba, 2015), as well as the preservation of military heritage (Gawryluk, 2016; Klupsz, 2008; Camerin *et al*., 2021). However, few domestic authors have dealt with the topic of redeveloping military areas. Some authors have discussed deliberative planning strategies for regenerating military brownfields in Serbia (Miljuš, 2018; Perić and Miljuš, 2021). Others have tackled the issues of abandoned fortifications in the form of bunkers and their potential for revitalization and conversion (Turnšek *et al*. 2020; Krzović, 2011). Only a few authors have discussed the issue of military barracks in Serbia and their potential for redevelopment (Mirić and Kurtović-Folić, 2016; Staničić, 2014). The notion of military legacy may be avoided by many researchers because of mixed emotions among the population towards recent political history (Bakić, 2011).

In this paper, we investigate the case study of two former military barracks in Niš - Bubanjski Heroji and Filip Kljajić, which have a rich and dissimilar historical background, including a building of outstanding architecture in a complex and favorable location within the city. The paper examines the sites through a comparative analysis, aiming to investigate the scope and results of urban redevelopment processes and the compatibility of the approaches used, putting into practice globally promoted agendas in this field. We compared the transformations of these barracks in Niš using UNESCO's HUL approach to analyze these areas from

four different perspectives: *planning; land use, urban form & function; heritage protection; and public reception and cultural meaning*.

TOWARDS THE HISTORIC URBAN LANDSCAPE (HUL) APPROACH

Urban spaces are affected by a large array of new challenges, such as urbanization and globalization, which on one hand provide economic, social, and cultural advancement and opportunities to enhance the quality of life. On the other hand, unmanaged and poorly managed changes in urban density and growth can undermine the sense of place and the integrity of the urban fabric. Urban cultural heritage is an important human and socio-cultural element that retains the identity, integrity, and continuity of the city (Girard, 2013). The primary task in the protection and revitalization of abandoned urban areas is to enable a new lifecycle with a sense of contemporary standards and quality of life. The term Historic Urban Landscape (HUL) was first mentioned at a conference under the auspices of UNESCO: *Vienna Memorandum on World Heritage and Contemporary Architecture - Managing the Historic Urban Landscape*, in Vienna in 2005. This term was later defined as "an urban area understood as the result of a historic layering of cultural and natural values and attributes, extending beyond the notion of historic centre or ensemble" in the Paris Recommendations on the Historic Urban Landscape, adopted at the General Conference of UNESCO in 2011. This document defined the HUL approach as one of urban management. In Article 11, the Recommendation on HUL states:

> "The historic urban landscape approach aims at preserving the quality of the human environment, enhancing the productive and sustainable use of urban spaces while recognizing their dynamic character, and promoting social and functional diversity. It integrates the goals of urban heritage conservation and those of social and economic development." (UNESCO, 2011).

UNESCO promotes the connection between contemporary architecture, sustainable development, and the integrity of the urban landscape, based on preserving the existing historical layers, built environment, and the context (Araoz, 2008).

Otherwise, the concept of the landscape has become widely accepted through other international instruments such as the European Landscape Convention (ELC, 2000), which introduced the landscape as "a resource favorable to: a) economic activity and whose protection, management and planning can contribute to job creation; b) the formation of local cultures, being a basic component of the European natural and cultural heritage, contributing to human wellbeing; c) being an important part of the quality of life for people everywhere: in urban areas and the countryside, in degraded areas as well as in areas of high quality, in areas recognized as being of outstanding beauty as well as everyday areas; and d) being a key element of individual and social wellbeing, and its protection, management, and planning entail rights and responsibilities for everyone." This shift, at the turn of the millennium, replaced the practice of dealing with historical monuments as isolated heritage artifacts (established by ICOMOS's Venice Charter in 1964), instead seeing them as an integral part of the dynamic, built and natural environment, known as the landscape (Bandarin, 2019).

The HUL Recommendations is not a binding document, but it still reflects the common attitudes of UNESCO member states regarding the current and common challenges that cities are facing despite their geography and history. The quality of this approach (HUL) is its applicability to all urban areas, regardless of their size and context (Rodwell, 2018). HUL promotes a comprehensive and integrative approach to the identification, assessment, preservation, and management of historic urban landscapes within sustainable development. Based on a balanced relationship between the urban and natural environment and the needs of present and future generations, the HUL approach aims to preserve the quality and recognize the dynamic character of urban space and promote social diversity (Figure 1 left). Historic urban areas are aesthetically attractive and historically significant clusters of buildings and monuments, which need to be preserved. They create the local identity, expressed by a specific immaterial cultural dimension (Sonkoly, 2012). The HUL recommendations combine a traditional and modern understanding of heritage, aiming at urban and socio-economic development while respecting inherited values and traditions. Pereira Roders (2018) emphasized the advantages of the HUL Recommendation in broadening the resources that should be conserved: "today, every resource could become listed as heritage, as long as they are held in common and deemed valuable by their communities … there is no limit to attributes and/or values, only the common aim to conserve them for future generations". The process of planning interventions in the historic urban landscape requires careful consideration of the potential and anticipation of risks to ensure balanced development (Figure 1, right). Contemporary architecture is complementary to the values of HUL and should not compromise the historical peculiarity of a given area. At the same time, the new structures should be designed to improve the visual character and richness of HUL.

Reports on implementing the HUL Recommendation (Pereira Roders, 2019) showed that 160 cities in the world (Serbia excluded) are currently participating in and/or hosting nearly 350 activities fostering the implementation of the HUL Recommendation. As "diffusion of innovation" (Rogers, 2003), implementation of the HUL approach is expected to have several stages. Thus, five groups of cities have been defined according to the innovation diffusion stages: innovators, early adopters, early majority, late majority, and laggards. It may become essential to integrate the HUL approach into national and local development policy to ensure adequate architectural and urban intervention in the historic urban fabric and its surroundings. The cities and countries that started exploring the potential of the HUL approach became early innovators, willing to take a risk, to try new things even if they fail, but they accumulated an essential experience that may help other cities to improve their built environment and urban management.

This perspective of urban management and spatial transformation is used as a qualitative framework to evaluate the areas in the case study and identify the challenges even

though Serbia and the city of Niš do not formally implement the HUL approach. The main principles, promoted by the HUL, to be examined are (Figure 1, left):

- the historical layering of cultural and natural values and attributes;
- acknowledgment of the dynamic character of urban space;
- promotion of social diversity; and
- balanced relation between artificial and natural.

the process of demilitarization left behind more than 2000 military properties, and a small number of them have become the property of local governments (Glintić, 2015). By 2011, 32% of 342 identified post-Soviet properties had been reused, mainly with commercial and residential functions, but also in public services (Kadar, 2014).

As a post-socialistic country, Serbia faced democratic changes later than the rest of Central and Eastern Europe. After the last decade of the 20th century that witnessed war conflicts within the territory of the former Yugoslavia,

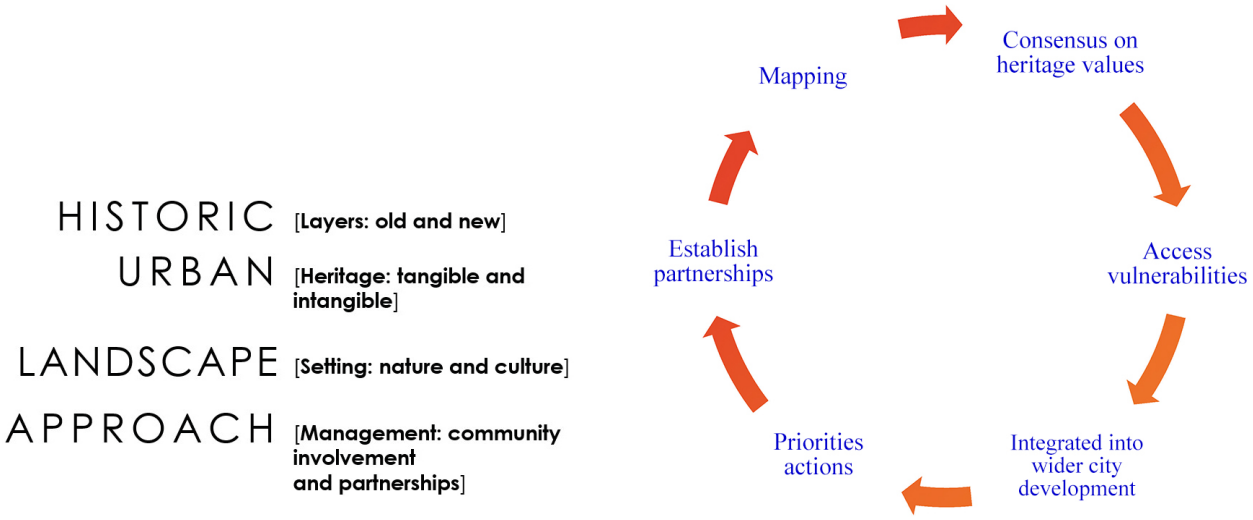


Figure 1. left: HUL approach and its attributes; right: Action Plan for HUL approach. (Source: Erkan, 2018)

MANAGEMENT OF MILITARY HERITAGE IN THE FORMER EASTERN BLOC AND SERBIA

Eastern and Central Europe, including the former Yugoslav republics, are characterized by numerous large areas of military barracks located within urban areas that were developed during the 19th and 20th centuries, but abandoned by the end of the 20th century. The end of the Cold War meant that many military estates in Europe became useless (Staničić, 2014). In Poland, most post-Soviet and post-Polish military land was demilitarized in 1992 and 1993 (Jarczewski and Kurylo, 2010). Most post-military facilities have been converted for civilian use, with the sites usually sold to the local authorities. There have been several directions of redevelopment for former military properties in Poland (Jarczewski and Kurylo, 2010) and military barracks have been: revitalized, upgraded, and converted into multi-family housing complexes; used for educational purposes; and converted into public administration buildings. Post-military areas are now being used for tourism, and former airfields have been adapted to become capital investment zones or civilian airports.

Similarly, in the Czech Republic, in 2007 many of the 151 military brownfields were successfully transformed into civilian purposes (Hercik *et al.*, 2014). These sites today are in the property of public administration, self-governance, and the private sector. Most of the military barracks have been converted into housing, by extending existing sites with new facilities (Hercik and Šery, 2012). In Hungary, democratic changes in 2000 brought a break with the socialist past (Bakić, 2011). With this political change, there were regressive events manifested in the reduction of the state size (fragmentation of the country), and also in the population, with additional demilitarization of the state (as part of the peace treaties ending conflicts in the region). This narrative has influenced the fact that in the 21st century, the legacy of military history in society is being experienced without consensus. The people have always had respect for the national military, but political elites have often referred to the history prior to them in a negative context (the communists disputed the legacy of the monarchist period, before World War II; or the democratic government concerning the communist legacy) (Bakić, 2011).

Upon establishing a democratic regime, the Serbian Army began the process of transformation. This change is described as "switching from quantity to quality" (Ponoš, 2007). In practice, this meant that the army began the professionalization process and abolished compulsory military service, reducing the number of military units. Two trends can be observed in this period of transformation:

- Decrease in spatial capacities due to the reduced size of the army (resulting from the reduced size of the state) and its professionalization; this is significant because it caused the underutilization of military assets (buildings and complexes) on a large scale; and
- Gradual relocation of larger military complexes from urban city zones. The new ones are built in strategic

positions outside of city cores (e.g., Jug – Cerotina military base), while at the same time, the existing urban military complexes are being sold. The availability of urban military assets for change of ownership was further increased due to changes in military doctrines that largely rejected the concept of a visible military presence in cities, which had previously been the idea since the restoration of modern Serbian statehood in the late 19th century.

The transformation of military properties for civilian purposes began in 2004 with establishment of the Fund for Defence System Reform based on the Decree of the Council of Ministers, which aimed to provide adequate financial resources through the commercialization of available military real estate (Tadić, 2012). As this fund did not bring the desired results, it was canceled two years later. In 2006, the Government adopted two documents: "*Real Estate Information on the Territory of the Republic of Serbia*" (Ministarstvo odbrane, Sektor za materijalne resurse, Master plan, 2021), regarding land no longer needed by the army, and the "*Master plan*" for real estate management (NALED, 2015). Using these documents, the commercialization of military real estate could be achieved through tender, sale or exchange with local authorities, following the enacted Law on Public Property. The main goal of launching the master plan was to acquire funds to solve the housing issue for members of the army, and such planning has been partially preserved to date. In the master plan, 447 buildings and complexes (of which 51 are barracks) unnecessary to the army, are stated.

By 2010, 22 facilities, and by 2013, 71 facilities were relinquished or sold (Manić *et al*., 2015). One of the leading problems that prevented the master plan's (2006) implementation was the lack of appropriate documentation, because army documents have always been inaccessible to the public, thus and data on military properties can still not be found in civilian records. Further, unlike the practice of other Eastern European countries, in Serbia, the sale of military property to local authorities is done by means of compensation, which complicates the process of attracting foreign investments. These problems were partially solved by adopting the Sub-Action Plan in 2010 and an Amendment to the Sub-Action Plan in 2011. They clarified the deadlines for the sale of military real estate, enabled a reduction in the initial price of a property if there is no bid after the first announcement, and made it possible to have other forms of reimbursement to the Ministry of Defence instead of payment (Tadić, 2012). Although the Republic Property Directorate published advertisements for the sale of army real estate in March 2016, November 2017, and several times in 2020, no buyers were found for most of the military property.

Previous researchers have highlighted the following challenges regarding the practice of managing unnecessary military property, presented here in three categories (Tadić, 2012, NALED, 2015):

- The motive of the army - the financial gains for the army, in order to solve the issue of housing for army members, initiated the process of commercialization;
- The Local Authority's role and perspective - the local authorities were the purchasers of military properties in 2/3 of the cases. The local authorities usually have a determining role in defining the land-use plans of an area, as this is a part of a formal procedure, despite possible speculative practice; and
- The real estate value - the value of a military property is vague due to the lack of market regulation and the potential high cost of remediation (demolition of unnecessary facilities, potential polluters).

According to the list of real estate sales available to the Ministry of Defence (Ministarstvo odbrane, Sektor za materijalne resurse, Master plan, 2021) and the Serbian army, today, there are 303 military complexes in Serbia, with 1,510 buildings covering an area of about 2,375 hectares of abandoned and unused military brownfield land (Ministarstvo odbrane, Sektor za materijalne resurse, Master plan, 2021). Military heritage management has gained importance in the last decade, with attention drawn to the barracks. The former Knežev Arsenal military and industrial complex of recognizable architecture in Kragujevac has been used since 2011 as a cultural center for music and other types of events and as a museum (Pavlović and Taranović, 2021). On the site of the former 4. Juli barracks in Voždovac in Belgrade, the complete demolition of military facilities freed the space for the construction of the Stepa Stepanović residential complex in 2012 (Staničić, 2014). Further, it is planned to convert the Arčibald Rajs barracks in Novi Sad into a university campus, but this has not yet been carried out (eKapija, 2017). In addition to barracks, usually vacated for new construction by demolition, many military facilities are being commercialized (e.g., airports have changed from military to civilian use).

RESEARCH METHODOLOGY: THE CASE STUDY OF MILITARY BARRACKS IN NIŠ

To perform in-depth research on the reuse of military property in Serbia, the paper focuses on the case study of two military barracks in Niš. Within the city area today are several military facilities (barracks, fortifications from the Middle Ages, and buildings of the modern Serbian army – Vojna komanda, Oficirski dom, Dom vojske) which are part of the city's image and are incorporated in the urban tissue. Their character defines them as military facilities, but it does not mean that those facilities still have military usage, especially those from the previous epochs – the Fortress, Oficirski dom. Construction of military facilities in modern Serbia began in Niš upon liberation from the Ottoman Empire at the end of the 19th century. Since then, two time periods can be defined: before WWII – the period of monarchy rule; and after WWII – the socialistic period. Both periods were characterized by the great importance of the army supporting the state system that, as a consequence, gave the army and its estates privileged status in the city. This privilege could be seen in the spatial distribution of military areas within the city area, in the quality and the size of particular military buildings (e.g., Inženjerska kasarna (Engineer's barracks), Vojna komanda) and in the special treatment of the areas of greenery within barracks. The political changes at the turn of the century have defined different approaches regarding these military areas. Today, it is possible to identify six military barracks, which

should all but one, according to General Urban Plan (GUP) 2010-2025 for Niš, be transformed and reused for different purposes (Sl. list Grada Niša, br. 43/2011; Sl. list Grada Niša, br. 136/2016a; Sl. list Grada Niša, br. 26/2018). Four of the six barracks are at the stage of this expected transformation (Table 1).

Table 1. Overview of the ownership status of barracks in Niš and their planned purpose

Name of the barracks	In the use by the army		Current ownership status	The planned purpose according to GUP 2010-2025 (Sl. list Grada Niša, br. 43/2011; Sl. list Grada Niša, br. 136/2016a; Sl. list Grada Niša, br. 26/2018)
	currently	future		
Bubanjski Heroji	No	No	Private	Residential, commercial uses
Filip Kljajić	No	No	transferred to Ministry of Justice	Cultural, commercial purposes
Stevan Sinđelić	No	No	Army, a separate part of the plot was sold	University campus; residential area
Knez Mihajlo	Yes	No	Army, a separate part of the plot was sold	Central city area; Mixed uses areas
Aerodrom (Airport)	Yes	No/Yes	Army, transferred to local authorities	Public Transport Terminal, No purpose change
Mija Stanimirović	Yes	Yes	Army	Army purpose, no change

The research is based on a comparative analysis of two former military barracks in the city of Niš (Bubanjski Heroji barracks and Filip Kljajić barracks), which are in the process of urban renewal. The cases were selected based on the following criteria:

- solved ownership status allowed the start of the urban redevelopment process;
- different current ownership status, original urban morphology, and built heritage status that has led to different approaches in urban redevelopment;
- the same shared disposition within the city area; and
- legacy of different periods.

These sites were analyzed from the planning perspective, the perspective of land use, urban forms and function, the perspective of heritage protection, and the perspective of public reception and cultural meaning. The research relies on a theoretical background, which includes a review of previous studies in the reconstruction of military complexes, a review of the development and transformation of military heritage management in Serbia, and an overview of UNESCO's HUL approach. The research methodology is based on several data collection techniques, the case study method, comparative analysis, and qualitative analysis. The source materials (data) for analysis included the following:

- data on the historical development and heritage protection of selected barracks, gained from published studies, historical archives, Institute for the Protection of Monuments, and planning documentation;
- site analysis using official city maps, orthophoto maps (Google Maps), Google Street View, and on-site exploration;
- data on planning perspectives, land use, and urban forms gained from official planning documents, urban projects, official statements by authorities, available photo-documentation, on-site investigation, and Google Maps; and
- qualitative data on public reception and cultural meaning regarding urban development plans and projects for selected areas, gained from around 90 articles in newspapers, national and regional internet news-portals, blogs, and social media, published from 2011 to 2020, using comment sections.

The data collection techniques exploited were: the observation method on-site (fieldwork), observation and analysis of photo-documentation and maps, content analysis of relevant documentation and texts (planning documents, historical documentation, published papers, and official statements by authorities). Fieldwork was carried out on several occasions in the period from 2018-2021, following the changes in the developmental strategies. Public perception and cultural meaning were researched by data collection and content analysis from various sources state above, then statistical analysis was used for processing the data and presenting the results. By comparative, qualitative, and quantitative analysis and then synthesis, the conclusions were formed.

COMPARATIVE ANALYSIS - THE TWO CASE STUDIES

This research focuses on the study of two military barracks – Bubanjski Heroji and Filip Kljajić. These barracks are situated in the south-western part of Niš, on plots separated by the Vojvode Putnika city road, which leads to Bubanj memorial park. The distance from the central city square to both areas is around 1.5 km, which is a walking distance of 20 minutes.

These complexes are legacies of different periods. Bubanjski Heroji barracks was established during the Ottoman regime. After the formation of the Kingdom of Serbs, Croats, and Slavs in 1918, the barracks was called Barracks of the 16th Infantry Regiment Car Nikolai II Romanov, and after reconstruction after WWII, it was changed to Bubanjski Heroji barracks which it has retained to date (Mirić and Kurtović-Folić, 2016). Filip Kljajić barracks or Engineer's barracks as it was originally called, was built at the turn of the 20th century, according to the project by architect Danilo Vladisavljević. Its recognizable building was constructed in the neo-Romanesque style, and since 1983 it has been under a protection regime as a cultural monument (Mirić and Kurtović-Folić, 2016).

Besides having different historical backgrounds, these complexes do not share the same morphology of building form. Bubanjski Heroji barracks was a complex of free-standing buildings situated within an open space with greenery. Its pavilions were built as simple utilitarian

buildings, unobtrusive in their architectural expression (Figure 3). Filip Kljajić barracks was developed as a semi-closed urban block, retracted in relation to the current boundary of the plot, thus creating a pre-garden (Figure 2, left and Figure 4). Its distinctive architectural expression and style made this building an iconic landmark easily visible and recognizable from the public streets. A comparative overview of the sites is given in Table 2 and a satellite image in Figure 2.

is a planning level at which the transformation process is noticeable. Lower planning acts follow the changes introduced in the (*ibid.)*, define developmental goals, and identify buildings under the protection regime (Table 3).

The Bubanjski Heroji barracks were sold to a private company in 2011 to create a new city center with high-quality dwellings and mixed uses (Živković *et al*., 2016). The company introduced the Novi Niš urban project in 2012. The site construction planned for 2012 started in April 2016 and

Table 2. General information about the military barracks

	Bubanjski Heroji barracks	Filip Kljajić barracks
Area	15.07 ha	2.93 ha
Location	south-west Niš, 1.5 km from center	south-west Niš, 1.5 km from center
Built Heritage	None	Engineer's barracks, 1899
Traffic connections	road; public transport; railway station, interurban bus stop - radius 500 m	main road; pub. trans.; railway station, interurban bus stop - radius 350m
Change in ownership	in 2009 to local authorities; in 2011 to a private company	in 2011 to local authorities; sales attempted in 2011, 2016; in 2020 to Ministry of Justice
Status	demolished, construction site	partial adaptation in the process
Amenities in radius 500m	an elementary school, two public faculties, a church, the Court of Appeal, Bubanj memorial park ...	

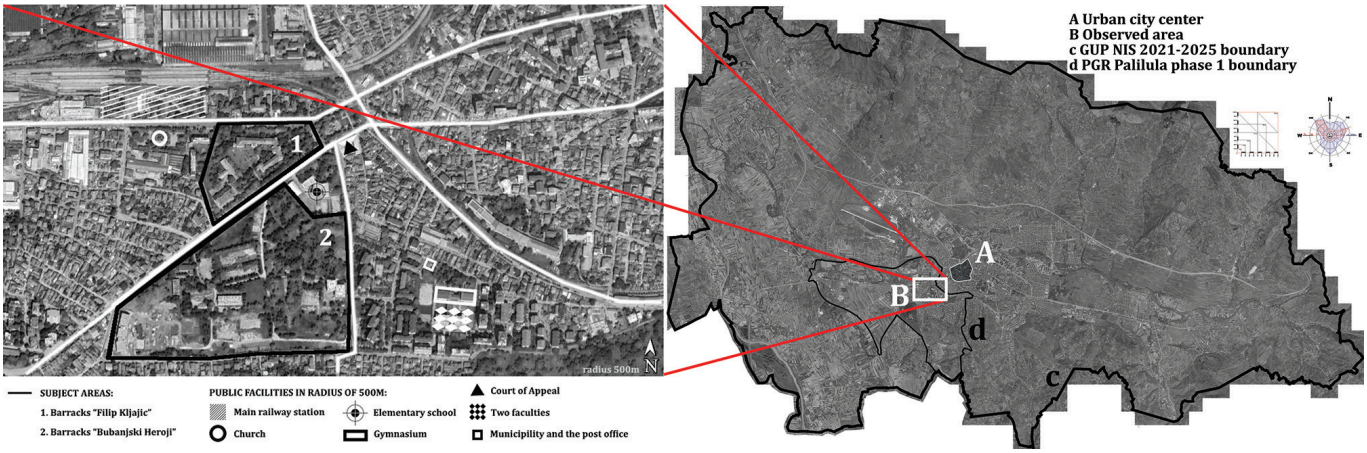


Figure 2. Areas of the two military barracks
(Source of the original: gis.ni.rs)

The planning perspective

The planning framework for development and construction in the observed areas includes: the Spatial Plan of the Administrative Area (RPAP) (Službeni list Grada Niša, br. 45/2011), General Urban Plan (GUP) 2010-2035 (Službeni list Grada Niša, br. 43/2011; Službeni list Grada Niša, br. 136/2016a; Službeni list Grada Niša, br. 26/2018), General Regulatory Plan of Palilula Municipality 1st phase (GRP1) (Službeni list Grada Niša, br. 111/2012; Službeni list Grada Niša, br. 90/2015; Službeni list grada Niša, br. 136/2016b) and the Urban Project Novi Niš for Bubanjski Heroji barracks, while Filip Kljajić barracks has so far not required a UP. The RPAP (Službeni list Grada Niša, br. 45/2011) did not deal with these areas in detail, but brownfield redevelopment was highlighted as a general developmental goal. The GUP (Službeni list Grada Niša, br. 43/2011; Službeni list Grada Niša, br. 136/2016a; Službeni list Grada Niša, br. 26/2018) is still going. So far building permits have been issued for several buildings (9), and construction of some of them has begun (7), although none of them are yet inhabited (Registar objedinjenih procedura od 01.03.2015. godine, 2015).

The ownership of the Filip Kljajić barracks has been recently transferred to the Ministry of Justice to be (re)used as a court building (Jugpress, 2020). Although the information is obscure, some work on the building is noticeable, while official and formal redevelopment plans are still absent. Until today there has been a lot of speculation in the media about the new purpose of this heritage building. In 2014, there were indications that Engineer's barracks would be turned into the Military Museum of the City of Niš, while an idea from 2017 suggested using it as a business (start-up) space for the IT sector (Jugpress, 2020). Still, this building has been empty for a very long period, which has spontaneously initiated informal debate among locals (in media and social

Table 3. Planning framework for the redevelopment of the military barracks

Planning document	Bubanjski Heroji barracks	Filip Kljajić barracks
GUP 1995-2010 (Službeni list Grada Niša, br. 13/95)	Military (Special purpose) area	Military (Special purpose) area
1st amendment to the GUP from 2001 (Službeni list Grada Niša, br. 2/2002)	The two peripheral plots changed to medium density dwelling zone	ditto
3rd amendment to the GUP from 2007 (Službeni list Grada Niša, br. 51/07)	City center – residential zone up to 20%; culture, tourism, education, business, and catering	Ditto; in the post-plan period to change into a center of culture, business, catering, and tourism (in planning documents denoted as city center)
GUP 2010-2025 from 2011 (Sl. list Grada Niša, br. 43/2011) **& 1st amendment from 2016** (Sl. list Grada Niša, br. 136/2016a)	ditto	ditto
2nd amendment to the GUP from 2018 (Sl. list Grada Niša, br. 26/2018)	ditto	Reuse as a commercial-trade center (western part) and public administration, education, culture (eastern part)
GRP1 from 2012, amendments from 2015 and 2016 (Sl. list Grada Niša, br. 111/2012; Sl.list Grada Niša, br. 90/2015; Sl. list grada Niša, br. 136/2016b)	General goals: - More intensive use of the land, achieving acceptable housing density and adequate communal and infrastructure equipment; - Strengthening of identity based on cultural and natural matrix; - Protection of the public interest, public goods, and public space;	
	the need for an Urban Project (UP);	Engineer's barracks under the protection

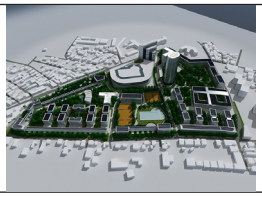
media) regarding the future of this famous building.

The perspective of land use, urban forms, and functions

The physical qualities and functional aspects of the selected cases were studied in the comparative analysis. Using this perspective, the details of the Novi Niš urban project were examined with regard to the Bubanjski Heroji barracks, while in the case of Filip Kljajić barracks, the conditions prescribed by the heritage protection of Engineer's barracks and the current planning documents (Službeni list Grada Niša, br. 111/2012; Službeni list Grada Niša, br. 90/2015; Službeni list grada Niša, br. 136/2016b) were taken as the basis for the analysis – see Table 4.

The Novi Niš urban project envisages the area, by form, as a closed super-block, forming a "fortress wall" structure

Table 4. A comparison of the planned spatial and functional aspects of the former barracks

	Bubanjski Heroji barracks		Filip Kljajić barracks	
Functions	planned	built/exists	planned	built/exists
Dwelling	+	Under construction	-	/
Business	+	No	+	No
Trade	+	No	+	No
Culture	+	Old building, not in use	+	No
Education	+	No	+	No
Sport	+	Old building, not in use	-	/
Healthcare	+	No	-	/
Administrative, law	-	/	+	Yes
Open spaces	+	No	+	existing (front of Engineer's barracks)
Greenery	+	Yes	+	Yes
Morphological characteristics of the complex	Closed super-block (fortress wall): full edge construction + high towers + big-box formats + semi-private & private open spaces		Semi-closed building block structure; the final composition is not quite clear (an assumed form* is given below) + public & semi-private open space	
Sources of the photos: left - UP "Novi Niš" 2012; right - gis.ni.rs (the original)				
* The sketch shows an assumed form of the new annexed building to the existing heritage building according to the announcements from the Ministry of Justice. Construction of an administrative building of 10 000 m^2 that is in line with the existing form is assumed. This shape would have 3 levels above the ground to fulfil the necessary building capacity.				

towards adjacent blocks, while constant blocks are opened to each other. According to the purpose of the envisaged buildings, the area is divided into seven sub-units – a zone of family and multi-family housing, a number of aboveground floors (3 to 7), an art center with an exhibition space, a recreational and sports center with tennis courts and a swimming pool, a private university center with a student dormitory, a medical business center, a zone of trade and hotel business and a zone of accompanying power plants. Most facilities are being built at the expense of vacant land after the demolition of the military structures. Only two smaller facilities are being retained, within which the accommodation of the art center and part of the sports facilities are planned. Urban parameters show that while the former barracks had an occupancy index of 7.62%, with 98,712 m^2 of 150,775 m^2 occupied by greenery, the new plan envisages an occupancy index of 31.88%, which is more than four times higher. That is still less than the average index values in the central urban area (around 60-70%).

According to the latest information from spring 2020, the Filip Kljajić barracks has been assigned to the Ministry of Justice. It is planned for housing all the judicial bodies based in Niš – Basic and Higher Court, Magistrates' Court, Public Prosecutor's Office (Jugpress, 2020). Although the necessary planning documentation for implementing decisions has not yet been announced, there is some official information regarding this conceptualization. According to the references, the protected building will be renovated and adapted to become a High Court and Public Prosecutor's Office in the first phase of the adaptation process. Then it will be followed by a final adaptation of the existing heritage building for the Magistrates' Court, Administrative center, and Commercial Court. The third phase of this undertaking will be the construction of a new facility of 10,000 m^2 on the site of the former parking lot (Jugpress, 2020, Ministarstvo pravde, 2020).

The built heritage perspective

The existing built structures in the two observed barracks have different treatments. Table 5 shows the status of the existing buildings in both areas. The basis for the analysis is the same as in the previous chapter, in addition to on-the-spot observations.

It appears that there was little concern with regard to preserving existing military buildings during the conceptualization of the Novi Niš urban project. While most buildings were demolished in the first redevelopment phase, today it is even hard to establish their position and the morphology of the previous complex. There are two buildings in the center of the plot, which will be preserved despite their lack of formal status as built heritage. That gesture may be valued as positive, although the proposed concept will lack a contextualization of the historical narrative of the site and preserved buildings (Figure 3).

Figure 3. The woodlands of the Bubanjski Heroji barracks and existing reused building (Source: https://bit.ly/2lMKlFE; https://www.juznasrbija.info/lat/drustvo/jos-nema-temelja-novog-nisa.html)

In contrast, the Filip Kljajić barracks has a protected building along with the complex gate and fore-garden (Mirić and Kurtović-Folić, 2016). Provided that the heritage protection rules enable the preservation of this area in its original form, this complex is going to preserve the original morphology and aesthetics of the place, since new additions are supposed to be planned in the backyard of the complex (Figure 4) (Jugpress, 2020, Ministarstvo pravde, 2020).

Figure 4. The Filip Kljajić barracks (Source: authors)

The perspective of public reception and cultural meaning

To get an insight into the public reception of the expected transformation of the former military barracks, articles in

Table 5. Comparison of built heritage treatment in the former barracks area

	Bubanjski Heroji barracks	Filip Kljajić barracks
Condition of buildings	Good	Good/Fair
Built heritage buildings (No. of buildings)	No (0)	Yes (1)
Planned for reuse (No. of buildings)	Yes (2)	Yes (1)
Currently in use (No. of buildings)	No (0)	No (0)
Demolished undesired buildings	Yes	No
Dismantled material recycling	Yes	-
Planned function for reused buildings	Culture, Recreation	Education or Culture
Type of functional category	Public, non-commercial	Public, administrative, non-commercial

newspapers and informative web portals, published from 2011 to 2020, were examined periodically as a reflection of the public interest in the future of these complexes. In addition to the information provided by the army, local and national authorities and representatives of private capital, the articles also expressed the attitudes of journalists. As a source of public opinion, the readers' comments on the informative web portals and forums were taken. More than 90 articles and blogs were analyzed in total. The results are in Table 6.

Table 6. Overview of public opinions on barracks

	Bubanjski Heroji barracks	**Filip Kljajić barracks**
Condition of buildings	Good	Good/Fair
Built heritage buildings (No. of buildings)	No (0)	Yes (1)
Planned for reuse (No. of buildings)	Yes (2)	Yes (1)
Currently in use (No. of buildings)	No (0)	No (0)
Demolished undesired buildings	Yes	No
Dismantled material recycling	Yes	-
Planned function for reused buildings	Culture, Recreation	Education or Culture
Type of functional category	Public, non-commercial	Public, administrative, non-commercial

At first, people were enthusiastic regarding the Novi Niš urban project that offered, from the billboards, new and contemporary architecture, and therefore a new modern image of the city that was publicly appreciated. Still, eight years of development of the area have brought demolition and an unfinished construction site. This has resulted in people not believing in the outcomes of the project or its success.

Similarly, the heritage building Engineer's barracks was the subject of a recently concluded debate regarding its future use. Today, people share their regrets and disappointment in the final decision. Although they welcome the need for the extension of the existing spatial capacities of the city courts, people think there were better options for the use of this building of extraordinary heritage value, such as a culture center, museum, gallery or faculty (Figure 5).

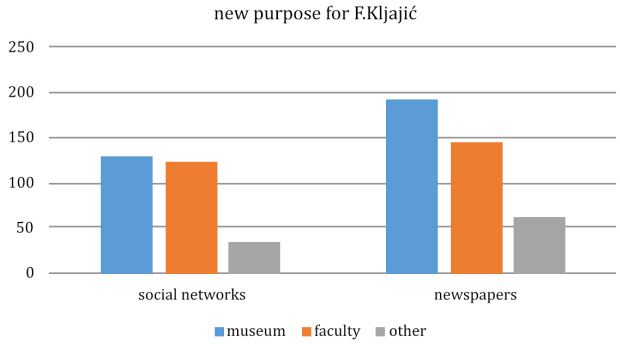


Figure 5. Statistical overview of public perception towards a new purpose for Filip Kljajić barracks

DISCUSSION

When comparing how the transformation of unused military areas is being implemented in Serbia, using the HUL approach of UNESCO, the following were noticed:

The historical layering of cultural and natural heritage and attributes - The transformation of the two complexes has only partially fulfilled the goals. Preservation of existing greenery is the prominent planning goal in the regeneration of both barracks, while the woodlands are a publicly recognizable resource and the primary value of the Bubanjski heroji barracks area. An increased built area and reduced greenery will significantly impair the existing identity. The demolition of the vast majority of the existing buildings has added to the loss of identity. Still, the plan to recycle built material can be positively evaluated. In terms of the qualitative and quantitative range of retained tissue, the Filip Kljajić barrack has a more favorable outcome. Here the historical layering of the area's heritage and attributes is recognized by the preservation of the Engineer's barracks, which adds to the promotion of cultural heritage in the built environment. The announced functional conversion into judicial institutions contributes to the continuous authoritative image of the place. On the other hand, in the Bubanjski Heroji barracks, plans for the two remaining buildings are as a "house of art" with workshops and exhibition space and an open studio, which may contribute to the historical layering of the built environment with the promotion of public uses and cultural contents. Still, those cultural or public uses are planned ad-hoc, and they are not historically rooted in this area, nor were cultural activists involved in the decision-making process.

From the architectural perspective, the layers of architectural history are retained by protecting the heritage building Engineer's barracks and the two buildings in Bubanjski Heroji barracks, although the preservation of their architecture is not certain due to their non-existent heritage status. Additionally, in the case of Bubanjski Heroji barracks, because generic contemporary architecture is promoted by the new plan, an imbalance in terms of the morphological characteristics of the newly planned complex and its surroundings will contribute to impairing the local visual identity of the space. According to relevant planning acts, Bubanjski Heroji barracks is given "excessive freedom" in urban planning that has resulted in the planned heterogeneity of its functional and morphological aspects. According to the planning acts and morphological characteristics of the protected building, Filip Kljajić barracks will probably face a scenario integrating the old and new buildings into the structure of the closed block, which should provide an integration of functions and forms.

Dynamic character of urban space - The dynamics of the

urban space were evaluated according to the capacity of the area to adapt to the current needs of society. The planning authorities emphasize the cultural, educational, and public services, but implementation has been minimal. Since both complexes have been abandoned for many years, the redevelopment strategy did not recognize any possibility of temporary uses for existing buildings and spaces or any non-institutional initiatives for the occupation of the areas (squatting) as a possible model for their reactivation. This probably applies only to non-heritage buildings, though.

Besides, the dynamics of the urban space are also evaluated by the spatial component. Compositional disconnection, predominant mono-functionality, and non-conformity among the newly envisaged buildings have diminished the synergy of the area that is necessary for urban dynamism. Fully built street frontages in some parts keep the feeling of the area's inaccessibility to the public and prevents interaction with the surroundings. Also, the lengthy construction phase in which the complex has remained closed shows a lack of adaptability and poorly managed valuable urban space. In the case of Filip Kljajić barracks, as the announced prospective use is for judicial institutions, this may advance the urban dynamics and connectedness. The complex will remain inaccessible to the general public, although it will improve the reputation of the city area (high-ranked public institutions, demands for office space for lawyers in neighboring areas). The dynamics of urban spaces are at a low level if the areas are closed, empty, or abandoned for a long time. That is the factual situation for both of these barracks, and any contribution that will make this area more liveable and inhabited could be positively valued.

Promotion of social diversity - By promoting a luxury residential-business complex, the UP of Novi Niš refuses to recognize social diversification as one of its goals, aside from planning some military residential units and renovating a single old building which will become the artists' community. The plans for Filip Kljajić barracks also lack this attribute, except that the monumentally protected building will be attributed to the judicial institutions, but still the elite. Both redevelopment projects have refused to include the local community in the development stages of their plans (missing "establishing the partnership" Figure 1, right). That has resulted in the absence of non-commercial facilities in the complex of Novi Niš and informal activities, oftentimes used in similar regeneration processes. While the area of Filip Kljajić barracks remains mono-functional (public use), the former Bubanjski Heroji barracks is planned as a mixed-use complex, but with a strong focus on commercial purposes, which lacks the mechanisms of urban management to house less favorable (non-profit) and vulnerable users.

Balanced relation between artificial and natural - The goal is fairly applicable as both of the sites belong to areas of the inner-city urban area because of their characteristic natural qualities. Being military areas for a long time, more than a century, these sites are home to rich and mature urban greenery that contributes to the micro-climate and overall image of the city area. Extensive re-urbanization of both sites may harm this image, in particular in the case of Bubanjski Heroji barracks, the announced total morphological transformation, and thus the loss of extensive urban greenery (multiplied occupancy index).

CONCLUSION

Conclusions drawn from comparing the two former military areas in Niš using the HUL approach can be summarized in the following remarks:

- Use of the HUL approach was not officially required in the redevelopment of the barracks, and can therefore not be used to conclude that there was any formal malpractice in this context. However, the analysis and comparison using HUL identified the key non-compliances as a lack of public dialogue regarding the heritage values (architectural and natural) of the places and their new uses; the absence of cultural sector activists as partners in the planning process; and a lengthy construction phase with poor management of unused space, seen in the absence of possible temporary purposes. These should be acknowledged as omissions in the redevelopment strategies used. The most significant problem is the lack of dialogue and absence of an active role played by the local community in the processes related to their surroundings. Decisions were made away from the local public at the state ministry level (Filip Kljajić barracks) or mayoral level (Bubanjski Heroji barracks).
- Consequently, the redevelopment strategies adopted in both cases cannot be linked and identified with the HUL approach, but rather with simple commercialization of the former military areas in the case of Bubanjski Heroji barrack, although there are some positive matches with HUL, such as retaining a few old buildings in the heart of the complex for community uses.
- The case of Filip Kljajić barrack is an example of public (state) intervention on heritage buildings. By assigning a new public purpose, the state assures the management and maintenance of the protected heritage, as it is a public interest. However, the opportunity of making this prominent building more open to the public with a more receptive and appreciated role was lost.
- Both redevelopment projects represent the cases of citizen participation being absent in the decision making, with the presentation of ready-made ideas to the public.
- The on-site results of the redevelopment so far in both cases cannot qualify as a success. The lengthy realization process, followed by the absence of activities on the sites, strongly advocate the use of existing international agendas (e.g., HUL approach) in such redevelopment projects. This would in the future help to avoid irrecoverable losses in the material and immaterial, natural and built heritage, as well as maintain the resilient urban dynamics very much needed for urban areas.

Although military barracks are a significant spatial resource of Serbian cities, their revival has proved to be a complex challenge, as emphasized in both of these cases. By focusing on the commercialization of these areas, the heritage, both built and natural, and its protection and

management were omitted in this process that the army initiated. This weakened the influence of the conservation and heritage protection institutions in the decision-making process during the planning and implementation stages. As in many countries, the practice of urban planning is in crisis. The void, in theory, filled by commercial stakeholders' aspirations does not necessarily prioritize people's needs, which remain unnoticed due to the poor tradition of community enrolment in planning practice, especially in former socialistic countries. Thus, the possibilities and strengths of the HUL approach need to be communicated by sharing good practices with the wider communities through professional and civic networks, but even more by institutional readiness for the change in its practice. Similarly, even unsuccessful stories may be used to address the need for a more comprehensive and integrated approach to urban management, regardless of whether it is the HUL approach or another.

Acknowledgments

This study was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

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Received April 2021; accepted in revised form September 2021.

SPATIUM
No. 46, December 2021, pp. 36-45

UDC 711.4(55)
Original scientific paper
DOI: https://doi.org/10.2298/SPAT2146036K

THE ROLE OF URBAN DEFENSELESS SPACES IN WOMEN'S SECURITY: A CASE STUDY OF JIROFT, KERMAN PROVINCE, IRAN

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Growing trends in urban development combined with fundamental changes in the physical context of cities necessitate paying attention to the quality of urban spaces. The low quality of spaces, known as defenseless spaces, has a significant impact on the security of citizens, particularly vulnerable groups, including women. By emphasizing the role of defenseless spaces in Jiroft, the present study aims to evaluate their effect on women's security. Data were collected using a questionnaire and analyzed using an independent t-test. Kendall correlation and regression were also applied in order to determine the quality of urban spaces and to evaluate their relationship with women's safety. The results show that the physical spaces in Jiroft, more than 30% of which are worn out, are of low quality, and thus can be referred to as defenseless. The level of women's satisfaction with the quality of the space is not high enough and this situation has increased women's insecurity by 41%. Therefore, reconsidering urban design, especially in the peripheral and suburban areas is necessary, owing to women's dissatisfaction with the quality of urban spaces and the positive correlation of these spaces with the level of security.

Key words: **Defenseless space, Women's security, Jiroft, Kerman Province, Iran.**

INTRODUCTION

In recent years, different planning studies have recognized security challenges for women and have attempted to alleviate them (George, 2014; Viviene, 2004; Davies *et al*., 2014; Fatima, 2016; Hendricks, 2015). These studies are frequently related to developing societies, and they address the deficiencies in women's security, which are associated with poor social care, patriarchal governments, social violence, discrimination and social inequality. In addition, such deficiencies encompass various dimensions of security, including social, economic, and even political dimensions at the macro and national levels (McCulloch and Stancich, 1998; Bartlett and Somers, 2016; Lou, 2016; Williamson and Rix, 2000; Mbadlanyana, 2012). Previous evidence has revealed that the issue of women's security is neither limited to one particular aspect or topic, nor related to basic and comprehensive failures. However, to reach the final target, identifying the leading challenges in specific dimensions and performing policy research (i.e., action) are also essential in planning. In this regard, women's security in urban spaces, mainly concerning the issue of social security, is recognized as one of the most important achievements of human society (Rose and Cartwright, 2009). Describing the term "security" is extremely complex, and so various definitions have been offered in different societies with different values. In one society, only physical abuse and bodily harm are recognized as a manifestation of insecurity, whereas in another, sensitivities are higher and even verbal harassment is considered as an example of insecurity. In this regard, the culture of any society is a determinant element.

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Oxford defines the word security as "to be safe, free from danger or anxiety" (Oxford, 1994). According to Velashani *et al*. (2015), security is the most important spiritual need, purpose, and inherent nature of every person's life in society; generally, security can be divided into both objective and subjective dimensions. As an objective definition, security is viewed as safe environmental and social circumstances and refers to a feeling of being secure and free from danger (Faridtehrani, 2011). Urban spaces can greatly influence both dimensions of security (Moorthi, 2004). The present study focuses on verbal and visual harassment, and physical security, including both mental and objective dimensions. That is, both physical and non-physical harassment are considered in the aforementioned dimensions (Razavian and Aghaei, 2014). The design of urban spaces can play a vital role in the level of security. This challenge is more serious for socially vulnerable women, since they are at greater risk (Cochran, 2019; Jahangiri and Siddiqui, 2011). More precisely, some urban spaces (e.g., defenseless and marginal spaces) are more prone to disturbances in their peace and security. Further, space and crime are certainly interconnected and closely related to each other, and so a marginal, dark, and closed space with no social supervision might increase the likelihood of crime (Ceccato, 2016; Hassanzadeh, 2017; Nasiri *et al*., 2014). Therefore, urban planners and designers should pay particular attention to these spaces and their negative impact on security and the distribution of peace in the context of urban management (Blobaum and Hunecke, 2005). The damage related to the lack of security in urban spaces differs between males and females. Women are mainly more vulnerable for reasons such as the overwhelming experience of fear in life and different consequences (such as stress, anxiety, recalling bad memories, etc.) of being in vulnerable situations (Tandogan and Ilhan, 2016; Condon *et al.*, 2007). Koskela and Pain (2000) believe that the feeling of fear and insecurity is greatly influenced by one's experiences and memories of urban spaces, which generally affect the presence of women in public space. However, due to the increasing importance of women's presence in public spaces, and the existence of defenseless spaces and urban blind spots, which impede women's dynamics, there is a bold contradiction in women's sense of security. To investigate this inconsistency in women's security in defenseless spaces, the city of Jiroft, located in Kerman province, Iran was selected as the case study. This city, due to its physical problems and urban design, is facing major challenges in the daily life of its citizens, especially in women's security. In this regard, the present study seeks to evaluate the security challenges of women in defenseless spaces, as a research priority, by assessing and identifying the factors affecting their insecurity.

LITERATURE REVIEW

Different studies have investigated security and urban defenseless spaces as dependent and independent variables, respectively. For example, Newman (1973) indicated that an increase in crime and a decrease in security in urban spaces are related to factors such as alienation and anonymity in space, the lack of surveillance and not enough force against violent acts, as well as access to a quick escape or disappearing route. He further believed that by designing symbolic mechanisms and making fundamental physical changes, the inhabitants of an area might be able to control their environment and redesign its urban spaces. These actions include increasing the quantity and quality of light in urban areas, since this would increase the possibility of identifying criminals and improve night vision and visibility. It also means that the presence and dynamism of people would increase, as well as the number of observers and witnesses (Wekerle and Whitzman, 1995). Additionally, increased accessibility, natural supervision (formal and informal), and enhanced regional communication might lead to the elimination of marginal and unprotected areas (Atlas and Leblanc, 1994). Angel (1968) argued that criminal areas are one of the main reasons for the lack of security, and that measures to eliminate these defenseless spaces are the main mission of urban planners; he also indicated that these spaces are directly related to crime, and inversely related to security. In her book entitled *The Death and Life of Great American Cities*, Jacobs (1992) emphasized that streets and public spaces, in general, are regarded as the most vital elements of a city. These spaces require security, and the eyes of observers are viewed as the most important influential factors in this regard. Indeed, some studies have repeatedly emphasized the importance of social surveillance (i.e., the eyes of observers). For instance, Robinson (1999) stated that increasing security has a close relationship with users of the space, and when more space is used in a city it leads to more stable security. A direct relationship exists between witnesses and security; therefore, he suggested that fundamental changes in the physical structure of cities are urgent for increasing readability and supervision. When radical changes appear in the physical structures, they affect citizens' behavior, mental maps, and performance in the space (see: Table 1).

Regarding all these theories, people's dynamics and the surveillance of urban spaces, along with the physical properties of space, such as the accessibility and readability of buildings, and the visible and defensible design of streets can play a special role in promoting security, while reducing urban defenseless spaces (Garcia-Ramon *et al*., 2004).

All of the factors affecting a space, including the physical structure and civil society, play a vital role in securing that space. Further, the development of space requires sustainable security, as long as it serves all age and gender groups. This kind of security is considered as a by-product of spatial security and these parameters have a causal relationship (Tabrizia and Madanipour, 2006). In this regard, Reese *et al*. (2003) reported that more open and denser spaces create the greatest feeling of insecurity in residents. More defenseless, marginal, and traffic-less land leads to a higher level of crime. Accordingly, inner-city areas, populated with diverse and dense land use, are more secure than low-density marginal areas with reduced activity performance (Reis *et al*., 2003). Citizens' vulnerability in unprotected spaces varies and the results of different studies demonstrate that women have the worst experience in this respect. More generally, various factors affect citizens' responses to insecurity, some of

Table 1. Effective Security Components and Solutions with an Emphasis on the Design of Urban Space (Source: Robinson, 1999; Jacobs, 1992; Atlas and Leblanc, 1994; Angel, 1968; Newman, 1973)

Researchers	Components Affecting Security	Solution for Increasing Security
Newman	- Urban alienation - Lack of social surveillance - Access to escape routes	- Redesigning marginal and unprotected spaces - Establishing a regulatory mechanism - Enhancing readability and visibility through environmental design
Angel	- Abandoned spaces - Low density of spaces - Reduced activity in space - Lack of social control through designing unreadable spaces	- Distributing business centers throughout the city - Providing traffic and parking facilities - Guiding people to specific paths through urban design - Increasing land use density - Not making unreadable and out of sight spaces
Atlas and Leblanc	- Improper access - Lack of social supervision - Low density in public places	- Increasing accessibility - Providing natural supervision (formal and informal) - Strengthening regional communication
Jacobs	- Lack of business centers and public uses - Lack of social supervision - Lack of visibility in the streets - Uniformity of urban functions and activities	- Designing buildings with a sufficient view of streets and public spaces - Increasing commercial use and its distribution - Planning for a variety of activities and functions in the space - Increasing social surveillance
Robinson	- Blind and out of sight spaces - Outline of buildings and points of view - Non-separation of public from private and semi-public spaces - having no view of the building from the surroundings - Low density in public spaces	- Strengthening social surveillance by designing visible spaces - Using real or symbolic fences to control the space - Separating public territory from semi-public and private territory - Increasing the visibility and readability of buildings through design and architecture - Creating density and ease of access to blind and marginal spaces

which include gender, age, past experiences, location and geography, ethnicity and culture. Although gender is considered as the most important factor in understanding security, the sense of security is quite different for men and women. Women feel more afraid and men feel more positive about environmental security. Stanko (1992) stated that the fear of security risks in women is three times greater than in men, which relies on the following factors:

- Women are less physically able to defend themselves;
- Child care and protection makes women more prone to the fear of insecurity;
- Women have less control over their privacy. Thus, they are more afraid of the situation;
- Women are more susceptible to sexual assault compared to any other type of harm. Thus, they have realistic reactions in the face of danger; and
- The level of women's fear is reasonable, while men tend to appear normal.

Generally, in spaces where violence is possible, women not only feel less secure, but also lose their connection to such space. Arclark (cited in Tabrizi, 2004) describes features such as urban suburbs, unobstructed spaces, blind and out-of-sight spaces, dilapidated and deserted buildings, as well as dark and narrow communication arteries, calling them a special situation. Figure 1 illustrates the most important characteristics of unprotected urban spaces based on the literature review, which impacts the display of violent behavior, and ultimately, impacts the level of women's security.

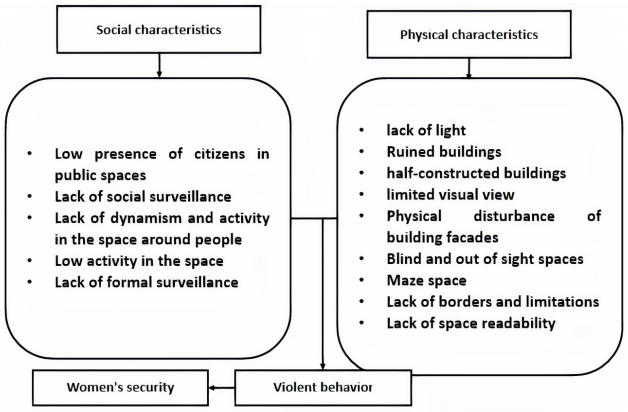

Figure 1. Characteristics of urban defenseless spaces

METHODOLOGY

In the present descriptive and analytical study, the required data were collected through literature analysis (using articles and related books to express the research background) and field methods (a questionnaire). In the field section, the sample size was 383 individuals, and the research was based on the Cochran formula using a researcher-made questionnaire. Additionally, a non-random sampling method was used due to the lack of access to the entire statistical population and the impossibility of the selection process. Then, the data were analyzed using an independent sample t-test, Kendall correlation, and linear regression using SPSS software. In

addition, Cronbach's Alpha test was utilized to calculate the reliability of the questionnaire, which turned out to be 0.79. Further, nine space quality indices, including brightness (the quality of light), readability (space and resolution), the line of sight (the detection of distant objects), social surveillance, hearing distance (density in public spaces), access, maintenance (rapid reconstruction process), human factors (positive human behaviors), and the overall design (all space components) were measured.

STUDY AREA

Jiroft, one of the most ancient cities in Iran, is located in the south of Kerman (Figure 2). Based on the population and housing census results of 2016 (Table 2), Jiroft has a population of 130,429 and 39,855 households, among whom 66,874 are male and 63,555 are female (Statistical center of Iran, 2017).

Table 2. Population Growth of Jiroft over the Past Half Century (Source: Statistical center of Iran, 2017)

Year	Urban Population	Growth Rate
1956	2,480	-
1966	6,723	10.6
1976	20,186	11.6
1986	35,033	5.7
1996	59,201	5.3
2006	97,988	5.2
2011	154,000	5.8
2016	130,429	-3.11

The body of Jiroft, considering its hot and dry climate, is brick facade, which covers almost the entire city. Furthermore, the combination of palm trees and other indigenous trees with hard walls is another feature of Jiroft's landscape (hard and soft wall combination). Additionally, the Melonti and Helielrood Rivers play an essential role in creating a separation between the three parts of the city. Due to the large width of the two rivers, there is a natural division or dissociation in the body of the city, especially in social communication between the aforementioned parts. Owing to its old and new textures with different landscapes and structures, the city has a variety of landscapes in all the three, i.e., the new, old and marginal areas (Kalahrood neighborhood). Further, most of the defenseless spaces in Jiroft are located in the worn-out suburban textures, and due to the density and variety of land uses in the historical and new contexts of the city, a good opportunity is available for women's dynamism and their presence in these spaces.

A large part of the physical texture of Jiroft is located in worn-out areas. According to 2017 statistics, its worn-out texture includes 2,483 residential plots and more than 30% of the total area of the city. The average, minimum, and maximum areas of the existing parts of the physical texture of Jiroft are 426, 13, and 9,476 m^2 in size, respectively. About 70% of the worn-out texture of Jiroft is between 5 and 30 years old and 15% is more than 30 years old. However, only 8% of the parts are under 5 years old and new, and more than 5% are under construction (Statistical Center of Iran, 2017). The wear and tear of these textures can have a significant impact on women's safety because some areas are considered to be defenseless spaces. Based on field information, there is no public transportation in the whole city of Jiroft, except for taxis, and almost the entire population uses pedestrian and private transportation for transit, while about 70% of urban passages are less than 9 m wide (Sharestan Consulting Engineers, 2017). All focal points within the city, including standard and worn-out textures such as schools, health networks, banks, shopping centers, government organizations, and the like are of relatively uniform distribution. The present study highlights one of the main challenges for women in urban spaces, considering that no study has been conducted on the security of women in Jiroft so far. Since a large number of spatial features in Jiroft, such as its worn-out texture and defenseless spaces can be found in most of Iran's cities, the results can also be applied elsewhere. In addition, the field information indicates that women's security is endangered in the late hours of the night and when public spaces are less crowded. Insufficient security is always among the concerns of women in this city, although there has been a significant improvement during recent years. However, there seems to be a long way to go.

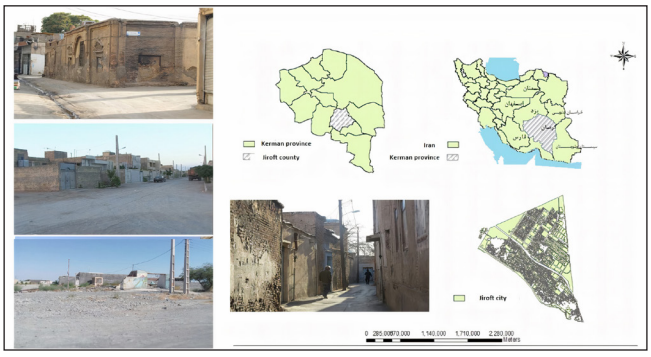

Figure 2. Study area (Source: Gessami et al., 2015)

RESULTS

Descriptive Statistics

Based on the data obtained from the questionnaire (Table 3) regarding the age range of the respondents, the highest number of respondents belonged to the age groups 15-30 and 31-45 years, with 42.6 and 42.3%, respectively. In contrast, the lowest number of respondents were in the age group of 60 years and older, at 3.1%. Regarding the employment status of the respondents, the findings revealed that out of 383 respondents, most were housewives (47.8%), while the remaining were employed (2.9%) and unemployed (4.2%).

The results of the questionnaire indicated that 37.3% of the respondents had a diploma and 32.1% held AD and BA degrees, while only 0.5% were illiterate. Regarding marital status, 28.5% were single and 71.5% were married.

Table 3. Personal Characteristics of Respondents

Age	Frequency	Percentage	Cumulative Percentage
15-30	163	42.6	42.6
31-45	162	42.3	84.9
46-60	46	12	96.9
60>	12	3.1	100
Total	383	100	
Marital status	**Frequency**	**Percentage**	**Cumulative Percentage**
Single	109	28.5	28.5
Married	274	71.5	100
Total	383	100	
Job Status	**Frequency**	**Percentage**	**Cumulative Percentage**
Government jobs	32	8.1	8.1
Self-employment	18	4.6	12.7
Student	124	32.4	45.1
House wife	182	47.8	92.9
Unemployed	16	4.2	97.1
Other	11	2.9	100
Total	383	100	
Level of Education	**Frequency**	**Percentage**	**Cumulative Percentage**
Uneducated	2	0.5	0.5
Primary and secondary school	103	26.9	27.4
Diploma	143	37.3	64.8
AD and BA	123	32.1	96.9
MA>	12	3.1	100
Total	383	100	

Table 4. Evaluation of Urban Space Quality from Women's Viewpoint with Indefinite Space Indices

Indices	95% Confidence Level		Mean Difference	error coefficient	Degree of Freedom (df)	Calculated t value
	Lower Bound	Upper Bound				
Lighting	2.920	3	2.964	0.000	382	131.060
Readability	2.780	2.920	2.850	0.000	382	80.452
Line of sight	3.061	3.236	3.148	0.000	382	70.482
Social surveillance	2.436	2.559	2.497	0.000	382	79.950
Hearing distance	2.104	2.252	2.178	0.000	382	57.571
Access	2.847	2.993	2.920	0.000	382	78.339
Repair and maintenance	3.428	3.673	3.550	0.000	382	57.52
Human factors	2.506	2.644	2.575	0.000	382	73.524
Overall design	2.340	2.511	2.425	0.000	382	55.771

Inferential Statistics

Table 4 presents the results related to the evaluation of women's viewpoints on the space in Jiroft with respect to nine indices based on an independent t-test with a 5% error rate and a 95% significance level. The mean of each index was calculated on a Likert scale from 1 to 5 with a mean of 3. It means that the index is better if the mean is higher than three and vice versa. In other words, there are fewer defenseless spaces if the means for each index are greater than three.

The results of the t-test demonstrated that from the women's point of view, the status of the quality of the space is evaluated as undesirable. As shown in Table 4, an average level of 3.1 and 3.5 is only observed for the line of sight (monitoring of objects or individuals at long distances without physical obstruction) and maintenance (restoring abandoned and

blind spaces) indices, respectively. The lowest score is related to the auditory distance index (meaning people's presence and dynamics at different times of the day and the density of the neighborhoods) with an average of 2.1, followed by the overall design index (the coherence and mastery of space), with an average of 2.4. Furthermore, the total score of the indices is 2.7, which represents an unfavorable condition. In all indices, the error coefficient of 0.000 indicates the significance of the differences and the reliability of the resulting means.

Kendall's correlation test was used to evaluate the relationship between the indices of the defenseless atmosphere and women's security in Jiroft (Table 5). The results indicate that there is a significant relationship between all independent and dependent variables. The overall design index, with a correlation coefficient of 0.452, is more relevant than other indices for women's safety in the study area, and the lowest correlation is related to readability at a level of 0.144. Additionally, the error level is less than 5% in all indices, indicating significant correlations. Based on the test results, as the desirability of urban spaces increases, the women's sense of security increases too; and when the size of more defenseless spaces increases, the women's level of security decreases. More precisely, there is a significant difference between the independent and dependent variables.

The Kendall test results (Table 6) revealed a significant positive relationship between defenseless spaces and the security of urban women in the study area, with a correlation coefficient of 0.588 and an error rate of 0.000%. In addition, it was observed that there is a positive and significant relationship between the variable of defenseless spaces and the security of women in urban areas in the region under study. The presence of defenseless spaces affects the level of the women's sense of security in all urban areas of Jiroft; and due to poor readability and hearing distance, along with inadequate access, these spaces induce the sense of insecurity to women in all urban areas of Jiroft.

Finally, the effect of the independent variable indices on the dependent variables was studied based on the standardized coefficient. Based on the results in Table 7, eight out of nine indices have a statistically significant effect on the security of urban women. Further, in terms of the effect of these indices on the security of urban women, the hearing distance with an impact factor of 0.222 and human factors with 0.222 have more impact on urban women's security than other aspects. On the other hand, readability and maintenance have the least impact on women's security with 0.131 and 0.133 impact factors, respectively. Finally, the social monitoring index, with an error coefficient of 0.047, is insignificant, and the results are unreliable.

To analyze and predict the impact status and to determine the strength and amount of the correlation, eight effective indices were used through multivariate regression regarding the role of defenseless spaces in relation to the effective component of urban women's security in the study area (Table 8). The results indicate a correlation between the security dimensions of urban women for eight factors not including the social surveillance index (r=0.655). Furthermore, the adjusted coefficient of determination indicated that 41.6% of changes related to security dimensions among urban women are explained by the linear combination of octal variables.

Based on the calculated F-value at the 99% confidence level and from the women's point of view, the linear combination of independent variable indices (defenseless spaces) can significantly explain and predict changes in dependent variable dimensions (urban women's security) in the study area (Table 9).

It is worth noting that the security of urban women is strongly influenced by the space and community in which they live. Additionally, the impact of defenseless spaces on women's security has been confirmed across Jiroft, which means there is a direct link between these two variables. Based on the theoretical literature, it can be seen that the level of crime is strongly influenced by physical space (Ceccato, Koskela, and Pain, 2000; Angel, 1968, 2016; Hassanzadeh, 2017; Nasiri *et al*., 2014) and can have a significant impact on women when the conditions are suitable. Physical spaces with high readability, line of sight, brightness, and the like increase women's security because they transform defenseless space into safe space. In other words, the level of women's security increases in Jiroft, when urban management attempts to eliminate the defenseless and blind spaces, especially in the suburb context of Jiroft.

Table 5. Relationship between Defenseless Atmosphere of Jiroft and Women's Security

Dependent Variables	Independent Variables	Correlation Coefficient	Significance Level	Number	Result
Women's sense of security	Lighting	0.314	0.000	383	Yes
	Readability	0.144	0.001	383	Yes
	Line of sight	0.236	0.000	383	Yes
	Social surveillance	0.366	0.000	383	Yes
	Hearing distance	0.411	0.000	383	Yes
	Access	0.328	0.000	383	Yes
	Repair and maintenance	0.287	0.000	383	Yes
	Human factors	0.307	0.000	383	Yes
	Overall design	0.452	0.000	383	Yes

Table 6. Relationship between Defenseless Spaces of Jiroft and Women's Security

Independent Variables	Dependent Variables	Kendall's tau-b Test		Result
		Significance Level	Correlation Coefficient	
Defenseless spaces	Women's security	0.000	0.588	Yes

Table 7. Coefficients Related to the Intensity of the Influence of Independent Variables on Dependent Variables (Women's Security)

Independent Variables	Significance Level	T	Standard Coefficient	Non-standard Coefficient	
			Beta.	Std. Error	B
Lighting	0.000	4.308	0.191	0.042	0.183
Readability	0.004	2.907	0.133	0.045	0.131
Line of sight	0.000	3.711	0.201	0.046	0.217
Social surveillance	0.047	1.996	0.108	0.066	0.132
Hearing distance	0.001	3.250	0.175	0.069	0.223
Access	0.000	3.740	0.174	0.055	0.204
Repair and maintenance	0.001	3.325	0.140	0.040	0.133
Human factors	0.000	3.261	0.166	0.068	0.220
Overall design	0.000	4.430	0.228	0.049	0.219

Table 8. Regression Results of the Impact of Protected Areas on Women's Security in Jiroft

Multiple Correlation Coefficient (r)	Coefficient of Determination (R2)	Adjusted Coefficient of Determination (Rad)	SD
0.655	0.429	0.416	0.886

Note. SD: Standard error

Table 9. Regression Statistics for Independent and Dependent Variables

Regression	Sum of Squares	Degree of Freedom	Mean Square	F	Significance Level
Regression effect	220.580	8	27.573	35.073	0.000b
Remaining	294.021	384	0.786		
Total	514.601	382			

CONCLUSION

The results of the present study reveal that women's security is strongly influenced by spaces, decreasing with the expansion of defenseless spaces and vice versa, which is in line with the results of other studies (e.g., Robinson, 1999; Jacobs, 1992; Atlas and Leblanc, 1994; Angel, 1968; Newman, 1973). At the Jiroft level, t-test results confirmed that women are completely dissatisfied with the quality of its urban space in terms of seven indices, and a type of defenseless environment has been formed which affects the dynamics and activity of women in the community. The findings show that the quality of the space was at an average level, with a score of 3.1 and 3.5 only for the line of sight and maintenance indices, respectively. In addition, the Kendall test results emphasized the significant and positive relationship between the quality of urban spaces and women's safety, with a value of 0.577, meaning that the level of women's security increases by increasing the quality of the environment. However, the level of women's security decreases with an increase in defenseless spaces in Jiroft. Further, the results of the regression test showed a correlation between the dimensions of urban women's security and the eight factors with the amount of 0.655 (except for the social surveillance index, with an error rate of more than 5%). Regarding the adjusted coefficient of determination, 41.6% of changes in the dimensions of urban women's security are explained by a linear combination of octal variables. Thus, reducing defenseless spaces, especially in the suburbs and inefficient urban contexts, is essential in Jiroft in order to increase the level of women's security. Some of the solutions for increasing the women's sense of security, and reducing defenseless spaces presented here are evident in physical changes, including night lighting and redesigning blind and marginal spaces. Some changes should also take

place in the social fields including the increase of people's surveillance, and even formal institutions in defenseless spaces. Finally, based on field surveys and the results of the questionnaire, strategies can be developed to increase women's security and prevent the growth of defenseless spaces, where violent and criminal behavior are more likely. Some of these strategies are as follows:

- Given the low readability index, improving its level by increasing the number of street signs can help to citizens with navigation and routing, and also reduce the possible fear resulting from getting lost in the city.
- The urban landscape should be considered when creating environments with transparency or high readability. Cities with five high readability elements, including paths, edges, neighborhoods, nodes, and clear signs provide greater visual acuity, and increase emotional security, as well as deeper human experience.
- More appropriate police coverage of some areas can occur by establishing police stations to increase security for all, especially vulnerable groups, including women and children.
- More police interaction can take place with the public, and public education can be provided by the police station's social agents in addition to informing public and the youth about the consequences of a quarrel.
- Based on the impact of the overall design index, creating public spaces in the city is required to prevent social harm and reduce depression and violence in the community.
- Urban furniture is considered as one of the most important physical factors affecting security; thus, it should be taken into consideration.
- The creation of attractive and eye-catching spaces is necessary for men and women of all ages. As it has been argued, this is especially true for women in order to increase their lively presence in urban space and their social surveillance.
- The quality of the network of passages should be increased due to the low level of the brightness index.
- The attractiveness of public spaces should be increased using mental and environmental factors.
- An in-depth look at social development and more attention to women's participation, and their role in urban affairs should be considered, and managers should be responsive to urban women's needs.
- The urban environment should be empowered through exposure (being seen) and easy surveillance, enabling supervision of urban areas by citizens or police agencies.
- Development of socio-cultural functions is considered necessary since neglecting the cultural and social aspects of urban spaces is known as a contributing factor to crime, which encourages violence and aggression.
- Sport and recreation should be strengthened as well. The addition of sport-recreation functions to public spaces creates a lively environment and decreases the crime rate, as well as the performance of the space. Finally, this increases attendance and supervision, and improves social security.

Appendix: Summary of Questionnaire Questions

Lighting	How good is the lighting of urban spaces at night? How satisfactory is the lighting at night in parks and public spaces? How appropriate is the lighting at night in the urban streets and alleys?
Legibility	How visually clear is the sign and urban routing? How suitable are pedestrian levels for walking? How desirable are the number of stations with routing maps and signs? How desirable is the length of the marked paths on the floor of the sidewalk? To what extent are visual index elements installed in public spaces? To what extent has visual and street arts been used in urban space design?
Sight line	How appropriate is the visual diversification of urban symbols and signs? How desirable is the view of the buildings? How visually qualified is the public space landscape? How desirable is the visibility of the urban space? To what extent is creativity observed in architecture? To what extent is the visual compatibility of urban buildings and symbols acceptable?
Social control	To what extent do citizens feel responsible for insecurity? How much aid is provided by citizens in cases of insecurity? How much do citizens feel attached to public spaces?
Hearing distance	How much is the privacy of individuals respected in urban spaces? What is the appropriate distance between the urban furniture?
Access	How satisfactory is the physical access to urban public roads? How much access do you have to people-centered spaces? How many narrow and dark roads are in the surroundings of your living space?
Repair and maintenance	How good is the collection of construction debris on the sidewalks and roads? How many semi-finished buildings can be observed in the city? To what extent is the presence of addicts and delinquents avoided in semi-finished buildings? How satisfied do you feel about the addition of for example outdoor furniture and welfare services to the urban spaces?
Human factors	To what extent are the effects of destruction and vandalism observed in the city? To what extent are urban spaces suitable for the presence and activities of citizens? To what extent can women be present in parks and public spaces at night?
General design	How suitable do you consider the general design of the urban spaces? To what extent has the design of urban spaces considered the presence of women at night in parks and public spaces? How much do you feel that the urban spaces are gender-based?
Security	How much have you experienced sexual harassment in urban spaces? To what extent have you been physically abused in urban areas? How much have you been visually harassed? How much have you been verbally harassed? How insecure do you feel at night? How insecure do you feel during the day?

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Received October 2019; accepted in revised form June 2021.

SPATIUM
No. 46, December 2021, pp. 46-53

UDC 656(910)
711.73(910)
Original scientific paper
DOI: https://doi.org/10.2298/SPAT2146046W

HARNESSING OPEN DATA AND TECHNOLOGY FOR THE STUDY OF ACCESSIBILITY: THE CASE OF INDONESIA'S CAPITAL SITE CANDIDATE

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Accessibility has garnered substantial attention from transport and urban planners as the objective of modern transportation systems. However, analyzing accessibility is often challenging in practice due to extensive data requirements and computational complexity. The rapid growth of open data and technology provides new opportunities to perform such analysis in greater details. This study offers a framework for harnessing open data to support accessibility analysis. We applied the proposed framework to the greater area of North Penajam Paser, which is the candidate site to be Indonesia's future capital. The results suggest that accessibility mapping using open data could be an important toolbox in regional analysis, especially during the early planning phase. It encourages discussions around the problems and alternative solutions for improving citizen access to various opportunities.

***Key words*: accessibility; regional planning; open data; transportation network.**

INTRODUCTION

Nowadays, many urban and transport planners have started to shift the focus from traffic and mobility to the perspective of accessibility. Accessibility, especially in transportation, is defined as the ease with which goods, services, or activities, together called opportunities, reach their destinations (Steiniger *et al*., 2016; Talen, 2003). The sprawling growth of urban areas has made it difficult for people without private vehicles to access essential services in large cities (Marks *et al*., 2016). Although, in this digital era, some opportunities can be acquired virtually, geographical proximity still plays a significant role (Cervero, 2005). Therefore, accessibility studies are essential in city and regional planning as a way to measure spatial equity issues, especially to understand who has access to particular goods or services and who does not (Gonçalves *et al*., 2017; Talen, 2003).

Accessibility has been considered as the ultimate goal of any modern transportation system (Duranton and Guerra, 2016; Venter, 2016). The concept is perceived as a more balanced, holistic view focusing on the system as a whole, rather than the transport infrastructure alone (Cervero, 2005). Accessibility as a performance indicator encourages the development of facilities, thus allowing people to reach more opportunities with less mobility. This concept contrasts the view of mobility that mainly focuses on efficient movement. Mobility-based planning often neglects the crucial role of infrastructure networks and limits its focus to the efficiency of the transport system (Venter, 2016). Consequently, the plan makes people spend more resources (e.g., money, time, energy) on commuting, which opposes sustainable development principles.

The accessibility concept has been adopted in various

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transportation studies (Duranton and Guerra, 2016; Karou and Hull, 2014) and healthcare planning (Lu *et al.*, 2019; Plachkinova *et al*., 2018) for improving social services and equity in cities and regions (Kompil *et al*., 2019). Accessibility is also one of the rising concerns in urban logistics and distribution studies (Cattaruzza *et al*., 2017; Janjevic and Winkenbach, 2020). As cities have become more congested and fragmented, several new challenges have arisen with regard to accessing last-mile destinations, such as high transport costs, air pollution, and traffic congestion, thus reducing the citizens' quality of life.

While accessibility itself is a simple concept, it is often difficult to measure in practice. To date, there has been no unified approach to measuring transport accessibility. Various dimensions have been proposed as proxies, such as availability, affordability, proximity, acceptability, adequacy, and awareness (Saurman, 2016). Among them, geographical proximity is the dimension that is most used for measuring accessibility, since it serves as the basic requirement for making other dimensions possible (Logan *et al*., 2019). Talen (2003) classifies proximity-based accessibility measurement methods into five major approaches: (a) the container approach, which measures the number of facilities within a given unit; (b) the coverage approach, which measures the number of facilities within a given distance from the origin; (c) the minimum distance approach, which measures the distance between the origin and the nearest facilities; (d) the travel cost approach, which calculates the average distance between an origin and all facilities; and (e) the gravity-based approach, which measures the sum of all weighted facilities divided by the decayed distance cost. Each approach has its advantages and disadvantages. Therefore, the data availability and the purpose of the study play significant roles in justifying the method.

Many traditional accessibility studies have used simple proximity measures and a low resolution of spatial data due to limitations in data availability and computational power. These limitations have discouraged decision-makers from adopting the concept in practice. In this digital era, better-quality data and tools are available to support a more complex accessibility study. However, some of them are owned by private enterprises which cost money to use, making them less accessible for most people. The rise of the open-source community has allowed people to contribute a wide range of geographical information through an open platform. The size of such volunteered data is growing over time, providing opportunities for more advanced studies in transport and spatial planning. It enables transport and urban planners to measure accessibility with greater precision and higher resolution, even in street-level analysis. Open data can also be a useful input for conducting spatial analyses, especially in remote areas where official data is scarce. Such information helps to address the limitations in previous accessibility studies, which have often ignored the tail end of the distribution in places where most of the population with low accessibility reside (Logan *et al*., 2019).

Our study aims to provide a framework for harnessing open data and technology for accessibility analyses. We provide a case-based study in the greater North Penajam Paser area to illustrate the efficacy of the proposed framework. The methodological aspect of this study offers a generic workflow that can be replicated in other geographical areas. The results from this study also provide empirical insights for stakeholders on the accessibility profile of Indonesia's future capital, which could serve as a basis for supporting sustainable development in the region.

The rest of the paper is organized as follows. We cover the empirical context of the study. Then we describe the materials and the proposed framework. After that, we provide the results of the analysis. The discussion and recommended actions are given prior to conclusions. Finally, we discuss the conclusions of the study.

EMPIRICAL CONTEXT

In 2019, Joko Widodo, as the President of Indonesia, announced the plan to relocate the capital of Indonesia from Jakarta to two regencies in East Kalimantan: part of North Penajam Paser and part of Kutai Kartanegara (Gorbiano, 2019). The new capital is intended to serve as the seat of the national government, while Jakarta would remain the country's economic center. The decision to relocate the country's capital was driven by the motivation to address Indonesia's regional disparity caused by Java-centric development, and to relieve the heavy burden on Java (Coca, 2019). As one of the largest islands, Java is home to around 56% of Indonesia's population (see: Figure 1) and it generates more than half of the gross domestic product (GDP). Each year, it attracts substantial migration from other regions due to its economic appeal, worsening the disparity in the country.

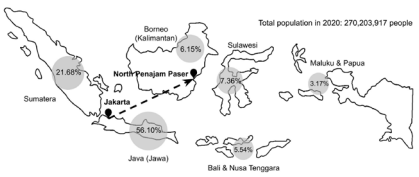

Figure 1. Location of Indonesia's Future Capital Site and Indonesia Population Distribution

It is expected that the official relocation will start around 2024 (Nathalia, 2019). In 2019, the government ran a design and planning competition for the capital city. Three winners were announced and the official city masterplan will combine all of the innovative and sustainable aspects from the winners (Ministry of Public Works, 2019). Due to the Covid-19 pandemic, the masterplan has been delayed and is still in the production process (Nirmala, 2021). Relocation of the capital is expected to redistribute the urbanization trend to other islands and improve regional development. It is also motivated by the fact that Jakarta is continuously sinking, at a rate of 25 centimeters per year due to subsidence (Lin and Hidayat, 2018). Jakarta has also suffered from chronic urban problems such as overcrowding, intensive floods, severe air pollution, and traffic congestion, which frequently disrupt

business and government activities (Niniek, 2019). The capital's relocation to East Kalimantan offers some solutions to the problem. The site is geographically located in the center of the archipelago, providing better access to reach outer islands in Indonesia. The island is also less populated and less prone to earthquakes than Java. Therefore, the relocation would help to relieve the burden on Java island and accelerate regional development.

Nonetheless, cities are both complex and socio-technical. They are made of people, facilities, and services interacting with one another. The status of North Penajam Paser as the site of the capital would also attract massive urbanization from other regions as people arrive seeking better opportunities. Unfortunately, the transport infrastructure and public facilities in East Kalimantan are far less developed than in Jakarta. This creates additional challenges for the authority to provide and maintain a high quality of life for future citizens. Poor access to public facilities has been known to have a strong association with social inequality (Su *et al*., 2019). Without a proper development plan, massive urbanization and social inequality could lead to subsequent problems in the future, such as poverty, overcrowding, and chronic traffic jams (Hidayati *et al*., 2019). Therefore, there is a need for a comprehensive accessibility assessment in the region to support its role as the nation's new capital.

MATERIAL AND METHODS

Data Collection

Our study focuses on accessibility in the greater area of North Penajam Paser in the east of Kalimantan island, Indonesia. The area covers 4.09 km^2 of land, including five adjacent subdistricts: Penajam, Samboja, Balikpapan Barat, Balikpapan Utara, and Balikpapan Timur. Using the overpass API from OSMNx software (Boeing, 2017), we acquired the open data from the OpenStreetMap (OSM), including the road network, district boundaries, and the points of interest (POIs) for the study area. Figure 2 shows the map of the study area along with the existing facilities. The figure was created using OSMNx.

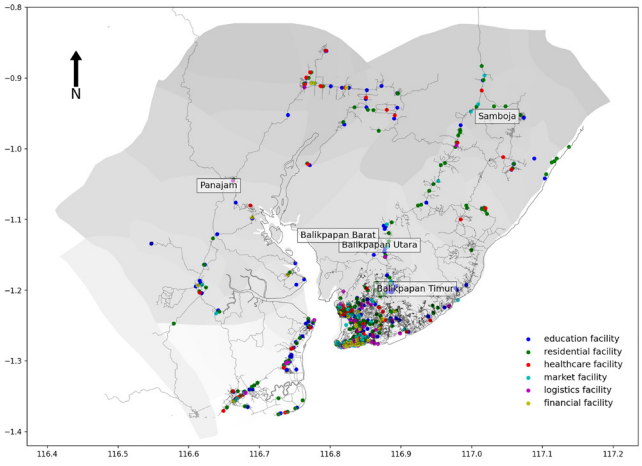

Figure 2. The street networks and the POIs in the greater area of North Penajam Paser

OSM is a Volunteered Geographic Information (VGI) platform, where people can openly contribute to add, edit, and even delete information in the database. The information consists of several elements of spatial data in the form of nodes, ways, relations, and tags. Nodes denote a certain point on the earth's surface defined by its latitude and longitude. Nodes can represent places, road intersections, or point of interests (POIs). Each node comprises at least an ID number and a pair of coordinates. Ways represent networks on maps such as roads, rivers, or coastlines. Relations refer to a multi-purpose data structure that documents the relationship between two or more data elements. The meaning of a relation is defined by its tags, which provide information on the particular elements to which they are attached.

Like other databases, the data from OSM are not guaranteed to provide the most comprehensive information. Some POIs or street features can be missing from the database due to its voluntary nature. OSM also often lags behind in updating infrastructures such as the street network and the existing POIs. However, it typically provides large enough samples to represent an accessibility map for a given area (Steiniger *et al*., 2016). A study by Barrington-Leigh and Millard-Ball (2017) shows that globally, OSM has covered 83% of the world's street networks, and about 42% of countries in the world are more than 95% complete. The results indicate that in many places, researchers and policymakers can rely on the completeness of the OSM.

The data retrieved cover 24,276 street segments, with 13,761 crossroads and 748 POIs identified. The total length of the streets is 3,084 km, with a mean of 126.94 meters and a median of 67.36 meters per road segment. We considered that the POIs represent opportunities and divided the tags into six categories: residential, education, healthcare, market, transportation, and financial services, as shown in Table 1. We attempted to assess the completeness of the data. However, the only authoritative report available from Statistics Indonesia refers to education facilities. Therefore, there are still some uncertainties regarding the data completeness for other facilities. Nevertheless, the rate of completeness for education facilities might be a good indication for other facilities. For education facilities, the data completeness rate is 70.23%.

Table 1. Category of facilities based on amenity tags from OSM Paser

Category	Amenity tags	Total POIs
Residential	'place of worship', 'community center', 'police stations'	215
Education	'school', 'university', 'kindergarten', 'library'	236
Market	'marketplace', 'industrial', 'supermarket', 'kiosk', 'restaurant'	121
Healthcare	'clinic', 'hospital', 'pharmacy', 'dentist', 'nursing home', 'doctors'	78
Transportation	'ferry terminal', 'bus station', 'parking', 'fuel', 'post office', 'taxi'	54
Financial	'bank', 'atm'	44

Accessibility Measurement

We followed the minimum distance approach to measuring accessibility. The accessibility was evaluated based on the location's proximity to the second nearest facilities. The farther they need to travel to reach the second facility, the weaker the accessibility in that location. The rationale to limit the threshold to the second nearest facilities is based on the assumption that it provides a minimum alternative for people to have reliable access to specific services. Hence, when the service in one facility is unavailable, people can still get a service from another facility. In this study, we limited the search range of facilities to 5 km. Assuming that the walking speed is around 5 km/hour, the specified range is equal to about 1-hour walking time. If driving is preferred, then the range should cover about 10 minutes of travel time, assuming that the average vehicle speed is around 30 km/hour. Therefore, when the second facility cannot be reached within the range, we considered the location to have poor accessibility.

To perform the analysis, we used OSMNx (Boeing, 2017) and Pandana software (Foti *et al*., 2012) in the Python programming language. OSMNx is an open-source software that utilizes overpass API to acquire geographical data from OSM (e.g., POIs, street networks, and related information) and transform it into a street network model (Boeing, 2019). It allows the user to download spatial geometries, and to model, project, analyze, and visualize real-world street networks. In OSMNX, the street networks are modeled as a graph consisting of edges and nodes. The edges are the street segments, and the nodes are the street crossroads. By default, the weights of the edges are equal to the physical distance between each node pair. The model allowed the researchers to utilize graph theory and network science for urban analysis. Some network statistics could be derived easily from the model, such as the average degree, the shortest path, and the node centrality in the street network.

Once the required information was obtained, we continued the analysis by measuring the accessibility of each road segment to all the available facilities based on the existing transport network. The analysis was conducted using Pandana software. The software provides a fast proximity analysis on a large-scale network (Blanchard and Waddell, 2017). With regard to the POIs, Pandana estimated the shortest routes between a set of origins and destinations using the street networks, directions, and turn restrictions (e.g., one-way streets). Analyzing the shortest paths from such a large-scale network requires extensive computational resources. Fortunately, Pandana is equipped with an efficient data structure and contraction hierarchies to speed up finding the shortest paths in a graph. The performance benchmark of Pandana has been provided by Foti *et al*. (2012), the authors of the software. By default, the routing algorithm in Pandana does not consider traffic congestion, vehicle speed, or public transit availability. Extra information on road traffic is needed to convert the travel distance into the expected travel time. OSM provides a 'maxspeed' tag to inform the user of the maximum legal speed limit for general traffic on a particular road. However, in our case, the information was not available for most road segments. Less than 3% of the street data are equipped with maximum speed information. Therefore, in this study, the shortest path analysis is solely based on the travel distance.

To measure the shortest paths, we defined the origins as all the street intersections (nodes), and the destinations as the specified facility locations. Our study assumes that the shortest path analysis only considers the road network. Other possible transport networks, such as canals and rivers, are out of scope. Besides, we also only accounted for drivable and walkable streets. No roads with walking restrictions are included in the graph. For example, when analyzing healthcare access, we set all healthcare facilities, such as hospitals, clinics, and pharmacies, as the destination points. Pandana then computed the travel distance from 13,761 nodes to n number of the nearest facilities (in our case, n = 2) within the study area. The longer the travel distance to reach the second nearest facilities, the worse the accessibility in that particular location is. The workflow of the accessibility analysis is shown in Figure 3 and the example of the accessibility measurement is given in Figure 4.

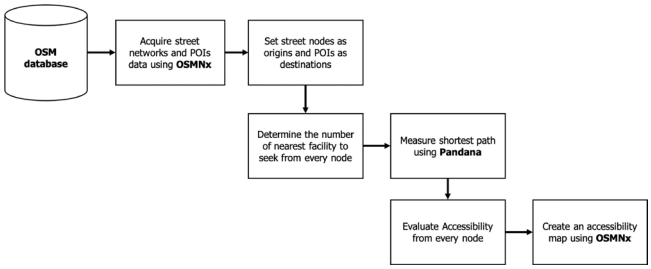

Figure 3. Flowchart of the accessibility analysis

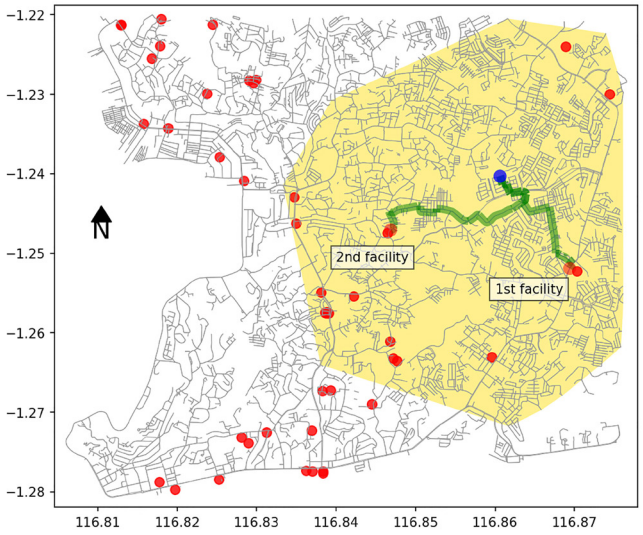

Figure 4. Example of accessibility measurement for a location (blue point). It measures the shortest path to the two nearest healthcare facilities (red points). The green lines indicate the shortest routes to the facilities. The yellow area indicates the iso-distance that can be reached within 5 km from the location.

Cluster Analysis

To discover the accessibility profiles of the study area, we performed a cluster analysis based on the travel distance

to six types of facilities. We employed K-Means to classify the available streets into several clusters. K-Means is an unsupervised learning method that seeks to divide *n* objects into *k* clusters. Each object belongs to the cluster with the nearest mean/centroids. It is performed by iteratively adjusting the centroids in the dataset until there is no change in the membership of the cluster. The generic procedure for performing K-Means is as follows:

- Step 1: Determine the *k* initial centroids randomly;
- Step 2: Calculate the Euclidean distance from each object to the centroids;
- Step 3: Determine the cluster for each object based on the nearest centroids;
- Step 4: Calculate new centroids based on the means of the cluster; and
- Step 5: Repeat steps 2-4 until there are no changes in the cluster membership.

This study treats the nodes as the objects for clustering and the travel distance to the second nearest facilities as the attributes. Each object in the dataset has six attributes representing the accessibility of each type of public facility. The optimal number for cluster k^* was determined using the elbow method based on the sum of squared error (SSE) of samples to the nearest cluster center (in our case, $k^* = 4$). The elbow method is a common method in cluster analysis for choosing a cutoff when the diminishing returns of the total SSE are no longer worth the additional cluster (Thorndike, 1953). We used a sci-kit-learn library in the Python programming language to perform the cluster analysis. After the clusters were created, we analyzed each cluster's profile by evaluating the average accessibility scores for each facility type. Lastly, we generated accessibility profiles and recommendations based on regional characteristics.

RESULTS

Figure 5 exhibits the spatial distribution of accessibility in the greater area of North Penajam Paser. The darker the area, the shorter the distance to the second nearest facilities, indicating better accessibility. The figure shows that there is only a small percentage of the study area with excellent access to public facilities. Most facilities are agglomerated in the south region where a large city, i.e., Balikpapan, is situated. The figure also depicts the disparity of accessibility to six types of facilities. Residential and education services are relatively easy to access compared to transportation and financial services.

Based on the proximity analysis, we created an empirical cumulative density function (ECDF) for the travel distance to the second nearest facilities, as shown in Figure 6. Assuming that people live near the streets, the ECDF provides a qualitative and quantitative comparison of the proportion of the population that has access to services (Logan *et al*., 2019). Figure 6 shows that the majority of the population has good access to residential and education facilities. Nonetheless, there is only a small percentage of the nodes with good access to transportation and financial services. If we take 1 km as the maximum threshold for a walking distance (Yang and Diez-Roux, 2012), less than 20% of the streets in the study area can reach all the services

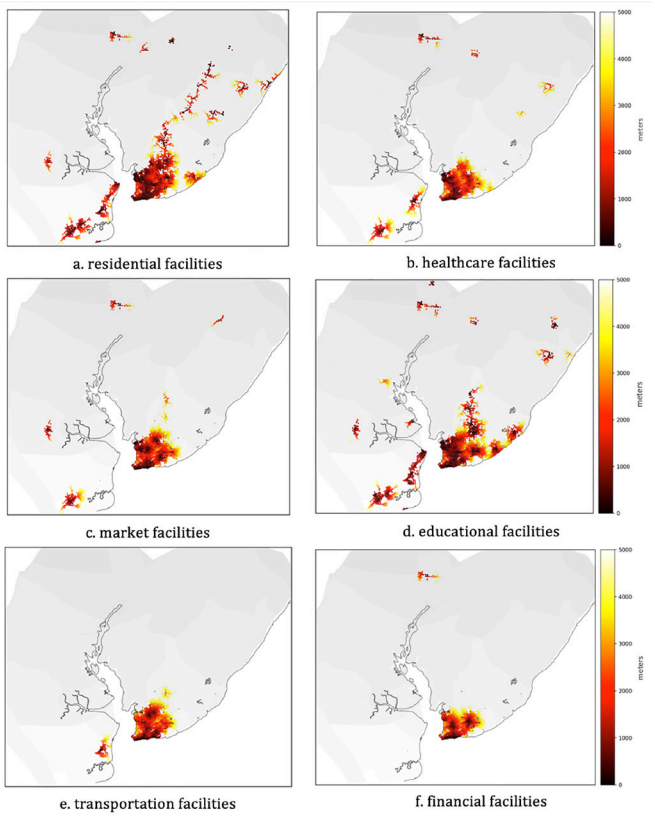

Figure 5. Accessibility maps for each category of facilities. The color shows the distance (in meters) to the second nearest facilities

within a walking distance. The Walk Score™ suggests the maximum threshold of a 30-minute walk (or about 2.4 km) to indicate good urban accessibility (Walk Score, 2011). Using this threshold as a benchmark, we found that only about 65% of the streets has good access to residential and educational services. However, less than 25% of the streets has good access to financial services. These results indicate high inequality in the greater Penajam area, where access to financial services becomes a privilege for a few people.

We performed a cluster analysis in order to better understand the accessibility profile in the greater Penajam area. The analysis suggests four clusters of accessibility profiles (see: Figure 7 and Figure 8). The cluster profiles are given as follows:

- Cluster 1 represents an area with the poorest access (> 4 km of travel distance) to all six urban service types. The cluster makes up about 25% of the nodes in the study area and is mainly located in the Samboja district, as shown in Figure 8. Decision-makers should pay considerable attention to this district since it retains the lowest urban access and is prone to a low quality of life;
- Cluster 2 represents an area with medium access to residential and education services but has poor access to other urban services such as healthcare and marketplaces. This cluster has the largest share, with about 35% coverage of complete nodes. It is characterized as a sub-urban area, which is mainly located near a large city like Balikpapan;

- Cluster 3 denotes a more developed area with good access (< 3 km of travel) to almost all public facilities, except for financial services. Besides residential and education services, the area has an excellent connection to healthcare, and the marketplaces make it ideal for urban living. It makes up about 20% of the nodes in the study area and is mostly close to the primary streets; and
- Lastly, Cluster 4 represents the most developed area on the site, where many opportunities are agglomerated. Most facilities in this cluster can be reached within 2 km, indicating good accessibility. The cluster also retains good access to financial services, which is atypical for the other clusters.

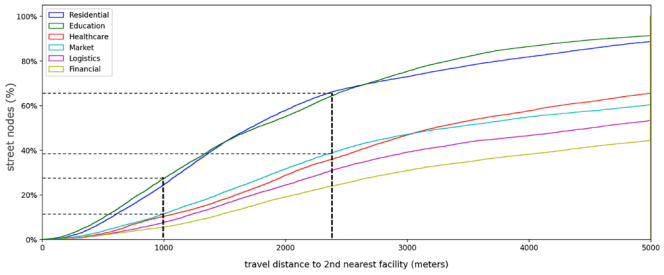

Figure 6. ECDF of street segments with access to the first and second nearest public facilities

DISCUSSION

Our findings show that the current state of accessibility in the greater Penajam area is deficient. Only about 20% of the current population has good access to all services within walking distance (<1 km). Moreover, many services are highly agglomerated in the big city, i.e., Balikpapan, especially markets, transportation, and financial services. With its current form, more than 80% of the population are dependent on vehicles to reach these facilities, indicating poor accessibility in the region. If no action is taken, the condition could impact the existing and future quality of life for the citizens. Therefore, based on the accessibility profile (Figure 7 and Figure 8), we recommend some strategies to improve urban access in the Penajam area.

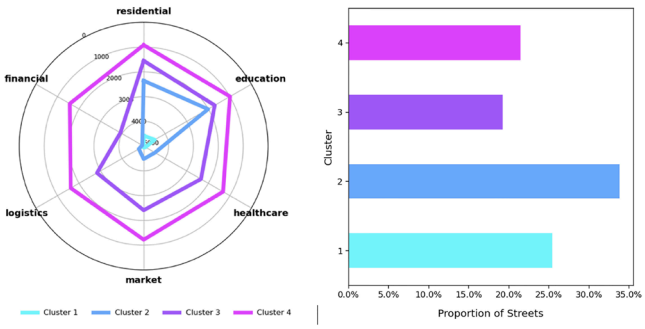

Figure 7. Accessibility profile of the greater Penajam area

Decision-makers should pay considerable attention to Cluster 1, since it covers rural areas and retains the lowest accessibility. In rural areas, accessibility is a crucial factor for improving the quality of life and economic growth. Poor accessibility also affects the health and educational level of the citizens (Laksono *et al*., 2019). Previous studies have found that people in rural areas are willing to travel more to reach jobs in exchange for better access to residential and education services (Manaugh and El-Geneidy, 2011; Yang and Diez-Roux, 2012). Therefore, substantial investment in basic services, such as residential and educational facilities, are urgently needed to improve accessibility. Another strategy is to expand the public transport capacity in the neighborhoods in order to connect these rural areas with the urban areas so that people without cars can still access various types of services.

Cluster 2 has the characteristics of a sub-urban area, which is mainly located surrounding the urban area. People living in Cluster 2 have relatively good access to educational and residential services. However, they have poor access to markets and healthcare services. Gonçalves *et al*. (2017) define the sub-urban area mobility profile as a vehicle-dependent community caused by a longer distance to reach public services that exceeds a walking distance, coupled with the lack of a public transport network. To improve accessibility in the area, we recommend creating a small urban center consisting of mini-markets and healthcare services. This small urban center could help people in Cluster 2 enjoy basic services and suffice their daily needs, while maintaining accessibility.

Cluster 3 and Cluster 4 have similar characteristics as urbanized areas. People in Cluster 3 and Cluster 4 can reach various types of services in less than 3 km on average. The main difference is that Cluster 4 has good access to financial services, while Cluster 3 does not. While these characteristics are commonly found in a big city like Balikpapan, we also found an area in the far north that also belongs to Cluster 4, namely Sepaku town. This indicates that this town has the potential to be a new urban center in the future. Thus, improving the connection between these two sites could improve the attractiveness of the new urban center for economic activities. It would not only result in a better internal balance of opportunities in Sepaku, but also contribute to a more bi-directional and efficient use of infrastructure between the two urban centers.

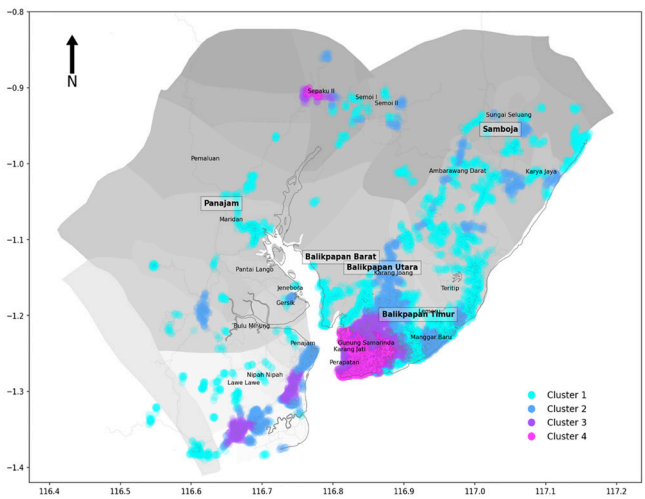

Figure 8. The cluster map of accessibility

Furthermore, since most of the existing population is currently dependent on vehicles, investing in a Transit-Oriented Development (TOD) system could benefit the new capital's development. TOD proposes a physical integration of land use and facilities into a dense area built near a transport hub (Ewing and Cervero, 2017; Marks *et al*., 2016). In this concept, a high density of mixed facilities must be planned near a transport hub within walking distance in order to improve the urban life quality. The transport hub should cover local and inter-local mobilities in the region. For example, dedicated bike lanes will help people move safely within a medium length of movement. The walking and transport infrastructure should also support accommodation for children, women, the elderly, and the disabled. Affordable and accessible public transport will benefit people with no access to private vehicles by enabling them to reach facilities.

CONCLUSIONS

This study shows the efficacy of open-source technology to support spatial planning and accessibility analysis, especially in emerging regions where official data sources are scarce. Our case study demonstrates that open data, such as the OSM database, can provide high-resolution information, such as detailed road networks and available facilities, which are useful for accessibility analysis. Accessibility maps also provide relatively easy-to-understand information, which could help the stakeholders to generate discussions around existing problems and recommend alternative solutions.

Our study also shows that measuring accessibility with open data may serve as an important toolbox in regional planning, particularly in the early planning phase. The accessibility measures shift the planning focus from merely network efficiency to the development of facilities that enable citizens to reach more opportunities with less mobility. The information provided by the accessibility maps can be further explored by linking it with the citizens' socio-economic profiles such as income, health, and education. Such a study would provide more evidence for the decision-makers and related stakeholders on the impact of accessibility on welfare and economic development. Urban and transport planners can also use accessibility measures to stimulate higher accessibility to all groups of populations or evaluate the environmental impact of land use.

Nonetheless, there are also some limitations to the study. First, the proposed framework relies on an open database, such as OSM. While preserving extensive information, OSM is not the most comprehensive database due to its voluntary feature. While it is able to recognize approximately 70% of education facilities in the study area, there are still some uncertainties regarding the completeness of other facilities. Secondly, the proximity in the study is measured solely based on the road network. Kalimantan is known for having both river and road networks as transportation modes. As a result, the study may slightly underestimate the accessibility score in the area. Future research may address one of the limitations by comparing the efficacy of other databases to support regional analysis.

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Received March 2021; accepted in revised form June 2021.

SPATIUM
No. 46, December 2021, pp. 54-65

UDC 727.7.012.6(100)
711.73(910)
Original scientific paper
DOI: https://doi.org/10.2298/SPAT2146054G

THE PARADOX OF ACCESS: THE 21ST CENTURY MUSEUM CONFRONTED BY ITS SECURITY

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Access is a key element for an architectural work. In museums, access takes on special significance due to the connection between two very different worlds, and it is therefore associated with an 'access ritual', in which three parts can be considered for study: preliminary, liminal, and postliminary. Recently, the enforcement of security elements has been implemented differently and in distinct parts of the entrance, which, in many cases, breaks the flow of passage. To analyse this situation, we have examined the seven most visited museums in the world and two emblematic cases in France, where the 'ritual of passage' is contrasted with security elements, in order to reflect on how to link security elements to museum access.

***Key words*: museum entry, threshold, security elements, most visited museums, access ritual.**

WHAT DOES IT MEAN TO ENTER A MUSEUM?

In the museum world, accessibility has become a key concept in the 21st century, because museums are institutions for the people. Promoting the notion of access underlines the fact that the museum is for everyone – without exception. This principle is an old one; it can be found in the first Unesco (1960) recommendation to make museums accessible to all. At first, accessibility was thought of in terms of disability, in particular, to allow people with reduced mobility or the visually impaired to enjoy exhibitions (ICOM, 1991). However, at the end of the 1990s, the notion of accessibility took on a greater scope, conditioned by a logic of social inclusion (Sandell, 2002; Black, 2012). It is in this broader perspective – the museum is open to all communities, inclusive and social – that the museum is defined today, which was reflected in debate at the International Council of Museums (ICOM) around the definition of the museum in 2019 (Sandahl, 2019). Most world-famous museums, however, were built at a time (mostly in the nineteenth century) when the notion of accessibility was completely different, and the museum was aimed at a much more limited section of the population (Hudson, 1975).

One of the major purposes of the museum entrance, from this perspective, is to communicate accessibility, by showing how easy it is to cross its threshold. This is particularly true for the Centre Pompidou, which is a significant marker of the transformation of museum architecture. Designed in the early 1970s, it seeks to show the continuity between public space and the museum (Davis, 1990). Older museums, conditioned by their architecture, have nonetheless sought to show their openness to all audiences, ensuring the best possible access for all. Despite this unifying discourse, it seems to us that a particularly important detail has been omitted from the debate on accessibility: that of security. Recent measures in this area, linked in particular to terrorism, have led to many important changes in the idea of the entrance that we think are worth examining.

Before reviewing a number of the most famous museums and analysing their entrances, we would first like to focus on the notion of access in architecture. Access is first considered, from a general point of view, as an entry. It is a key element since it implies an introduction or start, a point of arrival and departure, generally, the connection with the outside world, the opening of its limits to be crossed. Access indicates from where one enters, the starting point, where one moves from the outside world to the inside one. Although access is a static element, it has been associated with different actions: enter, exit, cross, go through, pass, move through, transit, transform, change, transport, impress, discover, arrive, among others. Access can be defined as the point that is both interiority and exteriority (Blanchot, 1992), since it

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connects or separates both worlds (Gallardo, 2011).

If, in general, access to an architectural work is of great relevance, this quality is increased in museums. Entering a museum can be compared to entering another atmosphere (Dorrian, 2014), another space or time, making reference to arriving at a place, linked to the idea of going on a trip and crossing a threshold, because they transport our emotions. Therefore, it is a physical, mental, and sensory crossing (Renault, 2000).

This architectural logic is ancient. The first examples of the materialization of this act of entering are found in the Egyptian temples, where their monumental entrance stood out. The temples were oriented to the east, to see the rising sun from the inside, and the door represented the 'entrance to heaven' (Norberg-Schulz, 2001). Greek temples were surrounded with columns, which prepared access to the interior, and at the same time constituted a kind of forest to be related to the exterior. In Roman architecture, access to the temples is marked by a porch that rises much higher than the Greek temples, on a podium, which is accessed by a staircase. It is not by chance that, in the 19th century, museum architecture adopted temple entry codes in a large number of buildings: the Altes Museum in Berlin, the British Museum or the Tate Gallery in London, the Museum of Fine Arts in Budapest, and others. Another type of cathedral-based museum architecture is also worth mentioning, such as the Rijksmuseum in Amsterdam or the British Natural History Museum in London. The idea of an access portico continues to this day, despite the fact that the image of the museum as a temple has been criticized (Rivière, 2009), along with the idea of ascent, of putting art on a pedestal, on an elevated floor plan, related to the ritual of ascension. Thus, the Museum-temple is understood as the sacralization of culture, generally linked to the peristyle that gives it its "solemn majesty" (Renault, 2000, p. 15).

Beyond the current discourse on accessibility, some museums continue to enjoy a status reminiscent of that of the temple or the cathedral (Poulot, 2009). They constitute a very particular space, practically sacred, outside the secular world and everyday gestures, where the object preserved for future generations testifies to the knowledge of humanity (Mairesse, 2014). The symbolic function of the museum entrance, from this perspective, is to fundamentally differentiate one world from another. Developments in museology have put such symbolism of separation into perspective, in the search for a museum that is accessible to all.

Thus, when taking into account all the factors involved in entering a museum, i.e., it is associated with a change, sequence or transition between two worlds (Van Gennep, 2008), you can link the act of accessing a museum with a kind of 'ritual of passage', as defined by Walter Benjamin (2005), a kind of ceremony of crossing from one world to another on a journey that involves the symbolic and sensory transport of emotions.

ANALYSIS OF THE RITUAL OF ACCESS TO A MUSEUM

Contrary to the notion of accessibility, a contemporary leitmotiv, access to the museum can also be seen as the crossing of a passage, a ritual involving a certain effort. "If there is a rite of passage, it is because there is separation, crossing a limit (...) and it implies duality, the ambivalence separation/passage that must be taken as an object, because it reveals fragility, uncertainty" (Bonnin, 2000, p. 68).

To analyze the access ritual, the scheme of "the rites of passage" defined by Aronld van Gennep is followed, which proposes three parts: "preliminary rites to the rites of separation from the previous world, liminal rites to the rites performed during the margin study and postliminary rites to the rites of addition to the new world" (Van Gennep, 2008, p. 25). To extrapolate these parts to the ritual of access to a museum, the consideration of three phases is proposed: preliminary, liminal and postliminary.

Preliminary access

Preliminary access contemplates the museum's relationship with its surroundings, its public space. Thus, in the first approach to a museum, its legibility must be considered, namely that it is easily identifiable (Lynch, 2006) hopefully from afar, given that museums are sometimes authentic landmarks. There are different elements that contribute to making a museum visible, among which the following can be highlighted: the building itself, where its volume, facade and entrance account for this architectural type; canopies or elements that highlight the access and invite the visitor to enter; and signs or banners indicating the name of the museum.

Accesses can be classified according to their: a) location: front, side, rear; being able to be in the same plane of the facade, which is protruding or set back; b) level: the same as the sidewalk, higher (reminiscent of the ascension process), or lower (that make us enter the land); c) type of surface: flat, ramp, stair, elevator; d) delimitation: canopy, portico, void, gap, protruding volume, recessed volume.

Liminal access

In relation to the main door, it is remembered that *Iannua* is the first entrance door whose name derives from the god Jano (Seville, 2004), which is symbolic of the beginning of everything that will happen later, therefore, the main door inaugurates the access (Espinosa, 2012). Yet how should one open the door to a sanctuary, to a revered, important place? Inwardly or outwardly? Quetglas (2004) wonders and concludes that it should open both ways simultaneously, to correctly relate both worlds and identify a ritual entrance.

Access is directly linked to threshold: "more than a watertight limit or border, this is a threshold or – a word from Borges about a preface – a 'vestibule' which offers everyone the possibility of entering or turning back" (Genette, 1987, p. 8).

It is necessary to distinguish the threshold from the border, since the threshold is an area, a 'between', a space in the middle; and the shape of the threshold, as a temporal and spatial figure, is that of 'between two', a middle that opens between two things or two people (Teyssot, 2003). A threshold opens the possibility of the connection between the inside-outside or intra-extra (Rancière, 2005), of a sway, relating to concepts such as: limit, border, skin, portico, door, permeability, porosity, thickness, tension between two situations, movement (visitor) – stillness (threshold).

Thus, to cross the threshold means to aggregate to a new world. So, this is an important act (Van Gennep, 2008). The function of the threshold can be synthesized to three degrees assimilated to three roles (Von Meiss, 2007): the utilitarian role, which refers to going through the door; the protective role, due to the control that it implies; and the semantic role, namely, everything that crosses the threshold, which would have a special significance in the case of museums. Monique Renault (2000) affirms that it is with the definition of a threshold that the tensions between the two worlds of urban space and the art museum crystallize. Thus, the threshold prepares for a 'decontextualization' when leaving everyday life and entering another temporality. Although there are different classifications of museums, such as 'temple museum' or 'palace museum', among others, which are linked to different types of thresholds, there are also examples such as the current Municipal Museum of Contemporary Art (S.M.A.K.), where an attempt was made to suppress the threshold. It could be said that, even with this work of 'suppressing' the threshold, one finally has to cross a door, a minimum threshold to access the interior.

To analyse a threshold, it is recommended to review its three dimensions: width, height and depth (Espinoza, 2012). Although the height at the first entrance door marks the access to an emblematic building, it generally adjusts to the visitor. The emphasis on the solitary experience of access is also evident in the width of the doors, and finally, in the depth of the threshold, to check if there is a desire to extend the experience of entry. It must be remembered that in the etymology of the threshold the ideas of light and limits are closely linked, the "threshold is the edge of light" (Gausa *et al.,* 2001, p. 599).

For Alison and Peter Smithson, the threshold (or 'doorstep' as presented at the IX CIAM) was a new attitude to thinking in terms of the associations of human beings at all scales, as well as articulating and producing transitions between interior and exterior spaces, public and private. Moreover, for Aldo van Eyck (1966) it was a totalizing concept which he vindicated as an idea capable of becoming the symbol of the architecture itself (De Molina, 2020), encompassing its meaning "until it covers every relationship between man and man, between man and things" (Gil, 2016, p. 46).

Thus, although the "threshold fuses the spaces" (Bonnin, 2000, p. 69), recently museums, like other architectural types, have been threatened by different events and have had to incorporate security mechanisms at this important point of interior-exterior connection, which in most cases, disrupt the 'access ritual' by slowing down entry and making it more uncomfortable through the routine search of our belongings and our bodies. This raises an important question: is the 'access ceremony or ritual' compatible with the security elements required by museums today? How have the most visited museums in the world incorporated security devices? To begin to reflect on these issues, it is necessary to review the security requirements that are installed in the access areas of current museums.

Security features at the museum entrance

This old (psychological) rite of passage has been joined in recent years by a new security-related rite! The world is changing, and we must bear in mind the different threats and dangers to which museums are exposed such as: theft, terrorism (Atkinson *et al.,* 2020) and recently Covid 19.

> "The way in which we have so far protected our cultural heritage, with a priority approach to protection, is no longer enough. Today, there are numerous risks that threaten our heritage. As a consequence, we are forced to increase security measures in a more sophisticated way than we would like – this is where the dilemma lies" (Hekman, 2019, p. 6).

Thus, fluid communication among all art professionals and the continuous revision of security measures are essential steps that must be taken. "Security is achieved through the application of adequate measures, both surveillance (guarding an object or a person) and protection (reducing danger, impact, threat, or damage); these measures are interrelated and mutually reinforce one another" (Hekman, 2019, p. 7).

The goal of museum security is to meet the needs of people and collections (Navas, 2018). It is thus key to consider the importance of all the people who constitute a museum. In the case of visitors, security cannot be an obstacle to public visits to museums; however, understanding how the mechanisms, devices, or security checks 'hinder' or prevent the flow of visitors' itinerary by having to 'be checked' at the access can be analysed.

These access control devices for people can be classified from lowest to highest security levels, starting with 7 levels, which, in most cases, are cumulative:

- No type of control. Free access without checking bags, without security personnel, or control elements. Although there will always be at least one person located at the entrance observing visitors;
- Camera system. A system that exists in the vast majority of accesses to museums configured by control cameras. Video technology makes it possible to capture and report criminal events and record their course. More sophisticated technologies make it possible to detect and identify perpetrators. It is necessary to ensure that the provisions of data protection, employee rights, and the like are not violated. The regulations of each country must be kept in mind;
- Inspection system for bags. There are security personnel who carry out a visual inspection of the inside of bags.
- Inspection systems for bags and coats. Visual inspection by security officers;
- Portable hand detectors. They are lightweight, hand-held instruments designed to detect predetermined metals. They are used in various places to detect metal objects in articles that people can carry, such as bags or even pockets of various clothing items;
- Metal detection arches. They can be fixed or portable and allow for adjustments to the parameters to detect different types of metals; and
- Scanners for objects, bags, and the like. These devices are mainly found in airports. It is required that personal items are passed through the scanner, in addition to the six control points above, to be thoroughly inspected. At this level of control, it could be necessary to add

other types of verification, in particular the taking of temperature (for Covid), currently underway in China.

After passing through the security devices, which are usually situated in the liminal or middle access, the final part of this rite of access is reached, the postliminary access.

Postliminary access

Alvar Aalto (2000) explains that there are many possibilities for achieving the transition between the interior and the exterior and indicates that the location of the lobby is key to having a close relationship and getting a clear idea of the other areas or dependencies. From the exterior to the interior, from the entrance, the passage through the threshold to the hall, there is a sequence, a succession of architectural episodes determined by the proportions, materialities and lighting of the different areas. This route, a fundamental strategy for Aalto, culminates in the hall that establishes the first area of pause before continuing towards the interior (García *et al.,* 2014). Once having passed through the security systems, it is up to the visitor to join the lobby. This link with the reception services or welcome desk, properly speaking, is therefore also a space whose proportions, light or materiality should be analysed.

The short description of these three stages makes it easy to understand one thing: the 'ritual' of the visitor entering the museum, whether in a new building or in older architecture, has been profoundly influenced by these new security measures, which appeared mainly during the 1990s. Paradoxically, this was at the same time as museums were trying to make themselves more accessible to everyone.

ACCESS IN NINE MUSEUMS

To analyse this access ritual more precisely, we decided to study the seven most visited museums in the world (Hunter, 2018; BBC, 2019; Museums, 2019; List of most-visited museums, 2020), together with two emblematic French cases. Note that, although all the cases proposed are museums, not all were designed for this purpose, which will make it possible to review the operation of access for architectural types designed to shelter art in parallel to other architectural types that were adapted to shelter art.

Each case is presented with a brief description of the museum and its three access phases, and an image of the interior to show the lobby, as well as the associated security elements.

National Museum of China, Beijing

The National Museum of China (2020a) is located on 16 East Chang'an Avenue, on the eastern side of Tian'anmen Square. The renovation and expansion of this museum combine the old museum of Chinese History with the Museum of the Chinese Revolution. It has a constructed area of 192,000 m^2 and was inaugurated in 1959. This Museum is defined by its director as the ancient temple and memorial of Chinese culture, recognized as the highest chamber of historical, cultural, and artistic treasures where the excellent traditional, revolutionary, and advanced culture of China's socialism are concentrated (National Museum of China, 2020b).

In the preliminary part of its access, this museum is clearly identified from its surroundings, which emphasizes the 'temple' characteristic. The entry is very high with respect to the street level.

In the liminal access, the entrance is comprised of two double porticos, and each portico is composed of 12 square-based pillars. The museum has three entrances: South, East, and North. The high-rise portico stands out in its liminal access; its thickness makes it possible to extend this section of the access, and the glazed entrance doors adjust to the scale of the visitor.

From the threshold, the great hall is accessed through four revolving doors, two on the left and two on the right of the portico. Once one enters the lobby, where its great height, amplitude and rich natural lighting from the main facade stand out, one must go through the security check.

In the 'Rules of access to the museum' on the website, it is stated that 'all visitors must pass the security check' (National Museum of China, 2020c). As can be seen in the sketch (Figure 1), the access of each revolving door in turn connects with two interior security porticos. Each double security portico has an object scanner. Therefore, the safety of people and their personal objects is met at all levels.

Although the security elements are placed in direct relation to the architectural threshold and considering that the metal detector frames are placed parallel to the facade plan and in relation to the accesses, integration between access and security elements cannot be seen as these security elements 'float' in the interior space.

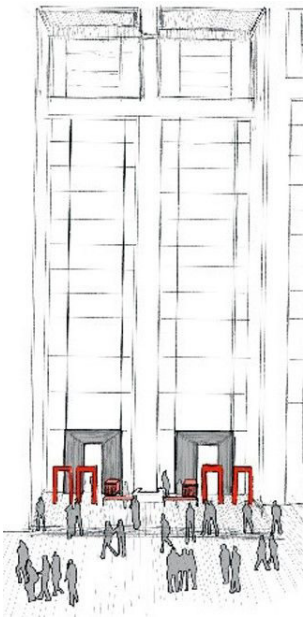

Figure 1. National Museum of China. Partial sketch of access from inside. (Source: Authors)

National Air and Space Museum, Washington. D.C.

The National Air and Space Museum (2020a) is located on 655 Jefferson Drive SW. The museum is a research centre on the history, science, and technology of aviation and space

flight as well as planetary science, terrestrial geology, and geophysics. The project corresponds to the Quinnevans architects, with an area of 131,394 m^2, and was inaugurated in 1946. The National Air and Space Museum (2020b) holds over 60,000 artefacts and has more than 20,000 cubic feet of aviation archival material and historical space artefacts in custody.

The entrance to this museum is set back in relation to the volumes of its sides, which account for, in this preliminary phase, the presence of this building in its environment. The access doors are glazed and are part of the curtain wall of the facade, which provides great luminosity to the spacious hall. It does not have a canopy, except for its southern access, which has a higher volume that functions as such. Access is elevated relative to street level and can be entered via a wide staircase or ramps.

There are two opposite accesses. The North entrance can be accessed from Jefferson Drive and the South can be accessed from Independence Avenue. Both have staircases and associated ramps. Each of the access points has four exterior doors. The southern access, on Independence Avenue, is located under a volume that protrudes from the facade, and the northern entrance can be accessed through the large glass wall located on Jefferson Drive.

In relation to security, the museum's webpage indicates that "we're committed to your safety and have security measures in place to keep you and our objects protected. When you arrive at the Museum you can expect a full security screening similar to what you might experience at the airport, except you can keep your shoes and belts on" (National Air and Space Museum, 2021). Although there is a liminal space between the exterior doors and the interior doors of the hall (Figure 2), which suits the proportions of its visitors, the security elements at the accesses are located inside the lobby. There is a relationship between the access doors located on two parallel planes and the security portals that face each other inside the museum. Each security portico has an associated scanner, so it has a maximum level of security.

Figure 2. National Air and Space Museum. Hall. (Source: https://airandspace.si.edu/visit/museum-dc.)

As in the previous case, there is a spatial correspondence to the interior of the hall between the architectural access, the doors, and the security frames, which are parallel to the facade plan and adjacent to the doors. However, the security elements also float in the interior space, so it can be said that there is no integration between the museum and the security elements linked to its access.

Metropolitan Museum of Art, New York

This museum is located at 1000 Fifth Avenue. It is the largest art museum in the United States. Richard Morris, Hunt Calvert Vaux, and Jacob Wrey were its architects, and it was inaugurated in 1872, with an area of 186,000 m^2. When The Met was founded in 1870, it did not possess a single work of art. Due to the combined efforts of generations of curators, researchers, and collectors, its collection has grown to represent more than 5,000 years of art from around the world, from the first cities of the ancient world to contemporary works (Metropolitan Museum of Art, 2020a, 2020b).

The Met is perfectly legible from its surroundings, as this neoclassical palace of art stands out, along with its many associated posters and banners. Access is elevated above street level via Fifth Avenue, from a large, pyramid-shaped staircase which resembles Roman temples, with their preliminary rite of ascension. There are three access bays marked by two ionic columns, under a large semi-circular arch, where three double glass doors allow entry to the museum, which are adjusted to the scale of the visitors.

Security standards at this museum are extremely high, as indicated on the museum website: "The safety and security of The Met's visitors, staff, and collection are of utmost importance" (Metropolitan Museum of Art, 2021). As seen in the sketch (Figure 3), the people in charge of security check are in the lobby at tables, the proportions and lighting of this great hall stand out. Two checkpoints are generated, marked by cords on both sides of the access, and the central part is left as the museum exit. Therefore, spatial integration between access and associated security systems is not seen either.

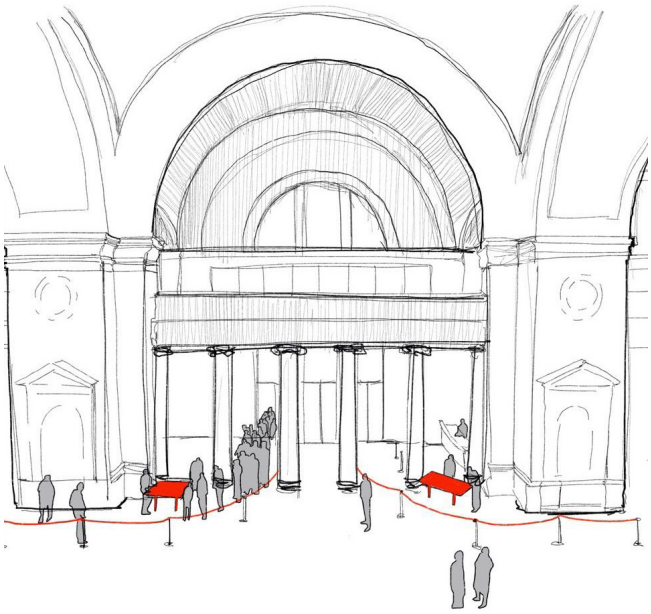

Figure 3. Metropolitan Museum of Art. Sketch of the hall. (Source: Authors)

Vatican Museums, Vatican City

This museum is located on the Viale Vaticano. Different architects collaborated at different stages: 1: Bernardo Rossellino; 2: Domenico Fontana; 3: Alessandro Dori-Michelangelo Simonetti-Comporesi; 4: Raffaele Stern; 5: Luca Beltrami (Vatican Museums, 2020a). The Vatican Museums (2020b) are the galleries and the set of rooms of artistic value, which are owned by the Catholic Church. These are accessible to the public. This museum complex is made up of different thematic museum buildings, papal buildings, galleries, monuments, and also the Vatican Library.

Access is at street level, through a stone portico perforated in the wall. In this case, the presence of the museum is marked by its long lines of visitors.

On the website of the Vatican Museums (2021), visitors are warned of security checks with a metal detector as well as surveillance with an advanced alarm system and video cameras in all rooms.

In this museum, the liminal access is of reduced proportions in its three dimensions. Although the hall is tall, since it has a proportion of more than double that of approximately one person, it is not as tall as the other case studies, and it is successfully illuminated mostly artificially.

Regarding the access hall (Figure 4), there are four security porticos that float in space, with associated scanner tapes in front of the metal porticos. It complies, therefore, with all levels of security, but integration between the security elements and access to the building is not found.

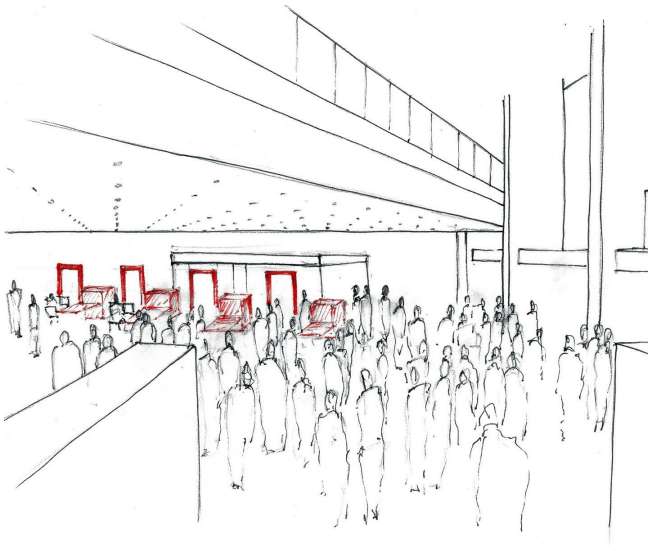

Figure 4. Vatican Museums. Sketch of the hall. (Source: Authors)

National Museum of Natural History, Washington D.C.

This museum is located on 10th St. & Constitution Ave. NW. It is a natural history research and exhibition museum. It is the work of the architects Joseph Coerten Hornblower (1849-1908), and James Rush Marshall (1851-1927). It has an area of 140,000 m^2 and was inaugurated in 1910. As indicated on the museum's website: 'Our mission is to promote understanding of the natural world and our place in it. The museum's collections tell the history of the planet and are a record of human interaction with the environment and one another' (National Museum of Natural History, 2020a, 2020b).

The museum is elevated above street level. In the preliminary phase, the idea of a podium, a raised piece, is also observed from the public space. The main entrance is accessed by stairs located in the National Mall, and it can also be accessed by a ramp on Constitution Avenue (National Museum of Natural History, 2020c).

Regarding security, the museum indicates on its website (2020c) that they are committed to visitors through their complete security control, which is similar to that of an airport. It has the same security description as the National Air and Space Museum on account of the fact that both belong to Smithsonian museums, therefore they have similar rules. Within the 'museum security policy', it is stated that the safety of Smithsonian visitors, volunteers, staff, and collections is of utmost importance (National Museum of Natural History, 2021).

Of the three access points, the two sides are used to enter the museum while the central point is used as the exit. As can be seen in the image of the hall (Figure 5), at the entrances, security porticos are lined with a wooden frame and are placed parallel to the entrance doors in the lobby. Two parts stand out in the liminal access: the first is the portico to the main glazed doors of the hall, which adapt to the visitor; and the second is made up of a previous interior space adjoining the lobby where the security elements are installed, leaving the large hall free of devices. This is one of the few examples where you can see an intervention through the covering of the safety frames so that they can be integrated with the frames located at the entrances.

Figure 5. National Museum of Natural History. Access hall. (Source: https://naturalhistory2.si.edu/vt3/NMNH/z_NMNH-016.html tour virtual (Museum website))

British Museum, London

The British Museum (2020a) is located on Great Russell Street. This museum was intended to house antiquities, with a very important ethnological section. Robert Smirke was the architect in charge of the construction of the new headquarters of 135,000 m^2, which is still standing to this day. The inauguration had different phases: 1: First Mansion Montagu Building, 1759; 2: New Headquarters Construction, 1857; 3: Extension, 2000. The origins of the British Museum (2020b) lie in the will of the physician, naturalist, and collector, Sir Hans Sloane, who collected more than 71,000 objects that he wanted to be preserved intact after his death.

So, he bequeathed the whole collection to King George II. The gift was accepted and on June 7, 1753, an Act of Parliament established the British Museum.

This museum is perfectly legible from its surroundings due to the Ionic-style colonnade that makes up its facade, which is reminiscent of Greek temples, highlighting its eight-column portico that protrudes slightly from the building and marks the access, which is elevated above the sidewalk level, as seen in Figure 6. The main access is via Great Russell Street and the secondary access via Montange Pl. Both have ramps alongside the stairs.

Both accesses have 'security booths' (Figure 6). These white booths can be understood as elements attached to the museum, where the complete security process for access to the museum is carried out, allowing free entry into the building.

Although there is no direct link between the architectural elements of access and the security devices, this departure from security mechanisms can be understood as a prior review so that the visitor can freely enter. Thus, the passage ritual is interrupted in the preliminary phase, leaving the visitor to walk until they reach the main entrance and, after passing through the threshold, access the 'great court', which stands out because of its large dimensions and its glass and steel. However, the connection to the street or public space is mediated by the security booth.

Figure 6. British Museum. Main façade, Great Russell Street. (Source: Google Earth)

Tate Modern, London

The Tate Modern Museum is located on Bankside. It was a reconversion and restoration of the former Bankside Power Station, originally designed by Sir Giles Gilbert Scott. Recently, the Gallery of Modern Art was remodelled by the architects Herzog and de Meuron, Associates: Sheppard Robson & Partners, Michael Casey. It has an area of approximately 35,000 m^2. Of the cases analysed, it is the most recently opened museum, since it was only inaugurated in 2000. It houses important contemporary works of art from around the world (Tate Modern, 2020a, 2020b).

From the outside, the volume of this building is legible, which forms a landmark for the city. The main entrance is located on the west facade of the building and can be accessed by a ramp that leads and invites the visitor to enter Turbine Hall, which is located below the water level of the Thames. There is also a secondary entrance on the north facade, which prolongs pedestrian access from the Millennium Bridge to the interior of the building. Turbine Hall is conceived as a street that runs through the museum from west to east for its entire length and height (Pinar, 2019). Only one platform remains from the old floor level of the room, which crosses the building from north to south and allows access from the entrance of the north facade, at street level and therefore elevated with respect to the main entrance (Tate Modern, 2020b). The web page tells of the importance of the hall, as an extension of its access: "Turbine Hall has a vast and dramatic entrance area with ramped access as well as display space for large-scale sculptural projects and site-specific installation art" (Tate Modern, 2021a).

Regarding security, the museum page indicates that: "Tate takes security very seriously. We undertake a range of measures including random bag checks and plain-clothed security officers to protect our visitors, staff, collections, and properties. We do not discuss the details of our security arrangements" (Tate Modern, 2021b).

The security elements (Figure 7) consist of tables located at the liminal access, where security personnel check the belongings of visitors. Thus, although there is no integration of the security elements, they produce minimal interference.

To conclude this tour in the review of museum access, two emblematic examples from France will be reviewed below: *Musée du Louvre* since it is the most visited museum in the world; and Centre Pompidou because it is the museum that opened museology to the outside, making a link with public space.

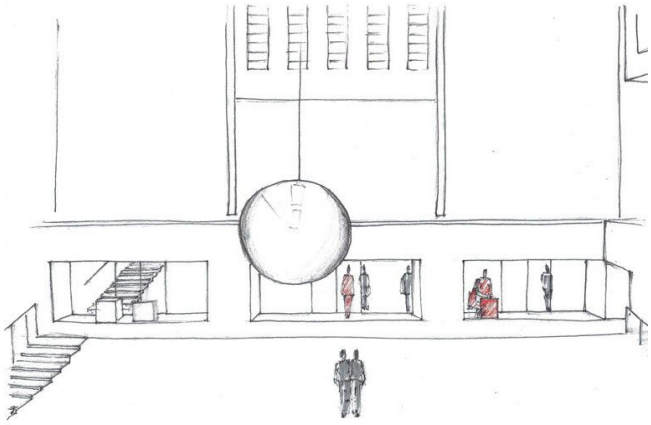

Figure 7. Tate Modern. Sketch of the hall. (Source: Authors)

Musée du Louvre, Paris

The *Musée du* Louvre is located on Rue de Rivoli. The architects were Pierre Lescot during the first stage and Ieoh Ming Pei during the second stage. The first stage was inaugurated in 1793, and the second in 1989, when the central glass pyramid that corresponds to the main entrance was introduced. The world's largest and most-

visited museum, drawing nearly 10 million people each year, is described on its website: "Originally a simple defensive fortress, the Louvre was for a long time one of the main residences of French kings. It became a museum in 1793, and now exhibits over 73,000 sq. m of artworks" (Musée du Louvre, 2020a, 2020b).

In the preliminary phase, this museum is clearly legible from its surroundings, both due to the ancient architecture and the incorporation of the glazed pyramid.

The main entrance to the Louvre museum is through an opening located on the west face of the pyramid. This access is located on street level and once there, one descends to the large hall by stairs, escalators, or by elevator.

Regarding security, the museum page indicates that: "all visitors must comply with security checks. The *Musée du Louvre* thanks its visitors in advance for their understanding and cooperation in this matter. Large suitcases and bags are prohibited. In the event of an incident, visitors must vacate the danger zone, alert our security staff, and follow their instructions" (Musée du Louvre, 2020c).

Figure 8 shows how the access lintel extends inwards with a continuous plane, below which the complete security system is located. There is an interesting relationship and integration between the architectural project and security devices where the liminal access merges with the postliminal.

Figure 8. Musée du Louvre. Main Access, Hall.
(Source: Authors)

Centre Pompidou, Paris

The Centre Pompidou is located at Place Georges-Pompidou. President Georges Pompidou had the idea of a multidisciplinary cultural centre, where a public reading library, exhibition and creation rooms, and a music centre converged, along with all the activities of a contemporary art centre (Viatte, 2007). The architects Renzo Piano and Richard Roger were in charge of this project. The building was opened in 1977 and has an area of 17,000 m^2 (Centre Pompidou, 2020a, 2020b).

The main entrance can be accessed through a slightly inclined plaza, which continues at the museum's access level, giving it continuity with the exterior. The entrance is marked by a glass canopy, which invites you to enter the building through a glassed volume located below it.

The centre's visiting regulations state that security personnel may request visitors to open their bags or packages to do a visual check in order to access the Pompidou Centre or anywhere within the establishment. Any refusal to comply with this request will result in the visitor being denied access to the establishment or being asked to leave the facilities (Centre Pompidou, 2020c).

This is an emblematic case because the security system is located in a volume between the architectural accesses, that is, between the exterior doors and the interior doors, in the liminal access, remaining inside the skin, which constitutes a good option for integrating security systems since they free up the exterior and interior planes (Figure 9) of the facade.

Figure 9. Centre Pompidou, 2019. Control area and Facade plan of the interior hall.
(Source: Authors)

DISCUSSION

The nine museums presented are faced with a double problem, which is partially impossible to solve. On the one hand, museums receive several million visitors every year, that is, tens of thousands of visitors daily, and they must try to not make those visitors wait too long. Those responsible for access know that visitors are willing to wait a few minutes, but the waiting time is inversely proportional to the satisfaction of the overall visit experience (Falk *et al.,* 1992). The current trend of frequenting these large establishments, conditioned by the development of international tourism, has led to an increase in the flow of visitors. The Louvre, with Pei's renovation, was designed to accommodate approximately 4 million visitors, and it now receives more than double that number. Additionally, the risks of terrorist attacks have increased recently, prompting museums to make adjustments to inspect each visitor. Regardless of these efforts, it seems that these risks have not decreased (the implementation of these rules, for example, for the Louvre, dates back to the end of the 20th century, according to the Vigipirate plan), and they could even increase due to the discovery of new risks, especially related to the pandemic.

On the other hand, since the 1960s (Unesco, 1960) the will of museums has been to be truly accessible to all, which means they should not become impenetrable shelters, but instead do everything possible to facilitate access.

It is particularly interesting to note that none of the museums described here, from this perspective, have actually implemented a security system that has been integrated into the architecture. As we have seen, only a few establishments seem to have incorporated a certain aesthetic attempt to integrate security systems, but in a relatively subtle way. Two hypotheses can be presented as to why this is so: on the one hand, museums can hope that such measures are only temporary and, therefore, can be eliminated in a relatively short time, which would render any architectural installation obsolete; on the other hand, by presenting security systems as temporary, they can also try to show visitors that such measures are not inherent in the museum's activity and that they should disappear in the coming months or years. However, the Louvre's example seems to demonstrate that such systems will last over time.

From an architectural point of view, the current solution for security seems to be, at best, a kind of make-up device that tries to interrupt the entrance as little as possible and, at worst, a continuous nuisance to the building, in largely eliminating the efficiency of the architectural proposals linked to the access ritual.

CONCLUSIONS

Access to museums is a broad topic of constant research, since it must be borne in mind that the public is not singular but plural (Weil, 1997), and museums change depending on their visitors; therefore, who visits and who does not visit them must be reviewed. The key is that museums tend to be "access for all", keeping in mind both physical and intellectual access, whereby all visitors can freely access, regardless of their physical, sensory or intellectual abilities, opening up towards a functional diversity (Eardley *et al.,* 2016; Rappolt-Schlichtmann & Daley, 2013; Patston, 2007). If the notion of accessibility appears to be a key concept in the world of museums, the least we can say is that, from an architectural point of view, it is not at all reflected in the same way by the establishments we have sought to study. Overall, accessibility appears to be mainly a question of visitor flow management, but it is mainly conditioned by security management.

In the museums analysed, it is observed that, in the preliminary phase of access, all are perfectly legible from their environment with very different possibilities of access. Although all forms are accessible to all people since they have ramps, elevators, or escalators associated with access stairs, in half of the museums reviewed the entrances are at the same level of the street while the other half are elevated above it. The average number of accesses is 2.2, with the Tate Modern having the highest number of entrances with a total of 5, versus The Metropolitan, Vatican Museums, and Centre Pompidou that only have one access point. There are also different types of signage located at the entrance: letters on the threshold, pennons or banners, indicating the presence of a museum.

The symbolic notion of the entrance, expressed in architecture since antiquity through the figure of the temple, continues to influence the visitor in many museums: at the main entrance, four of the cases analysed have porticos that mark the presence of a 'temple': The National Museum of China, The Metropolitan Museum, National Museum of Natural History, and The British Museum. Three of the cases have perforations in the walls to access them: in the Louvre, a perforation is made in the lower part of the glass pyramid, in the Vatican Museums, the main entrance is accessed through a perforation in the wall, just as in the Tate Modern. In the case of the National Air and Space Museum, the entrance is set back with respect to a volume that protrudes above it and indicates access. The Centre Pompidou has a glass canopy that extends from the main facade to mark the entrance.

In the liminal access, the initial hypothesis that the doors and thresholds have a dimension, both in height and width, that adjusts to the visitor is verified, producing a change in scale that allows them to be wrapped, as shown by all the case studies. With regard to to the depth of the threshold, it exists in all cases but it is of variable length. In this intermediate access, another relevant finding emerges in relation to the etymology of the threshold related to light, since in all the cases reviewed the access doors are made of glass, a quality that makes it possible to highlight the importance of total transparency in the threshold of the museums to have absolute clarity in the exterior-interior link.

Regarding postliminary access, eight of the cases analysed have lobbies where there is a strong change in scale in their three dimensions, accessing a huge hall, which functions as a large square full of mainly natural light coming from the plane of the main facade.

The museums analysed reveal different mechanisms and forms of security; however, only five of them also underline the minimal integration between the architectural accesses and the security elements. A first attempt is found in the National Museum of Natural History, where the security porticos are lined with wood, before entering the hall. In the Tate Modern, inspection tables are located at the ends of the access, in the liminal access, which produce minimal interference. The British Museum of London has a very interesting solution at its two entrances, which consists of placing security booths before the architectural access to the museum, in preliminary access, in which all security checks are carried out, leaving the architectural threshold free of obstacles. Finally, there are two interesting cases of integration, that of the Louvre museum, where the access lintel becomes an interior canopy that manages to house all the security devices, and that of the Centre Pompidou, whose exterior canopy houses a space that is located in the skin, between the interior and the exterior, and also houses all the safety devices, leaving the exterior and interior free from obstruction.

Security controls always represent a physical as well as a symbolic interruption in the access management of a museum. In an ideal situation, the minimal recommendation would be that the security elements remain perfectly integrated in the threshold, barely perceptible aesthetically

and that they prevent our detention, unless someone carries unauthorized elements, to perform the access ritual without any type of obstacles. But they continue to form a kind of barrier to the visitor and oppose the logic of accessibility of the inclusive museum open to all.

Thus, one can speak of the paradox of access in contemporary museums since, on the one hand, the entry is a key piece – because it is what transports us to the connection between the outside and the inside, but on the other hand, by having to incorporate so many security elements and new control measures, the fluidity and the experience of the 'access ritual' are broken.

Therefore, different questions and future lines of research are opened from the two dimensions at stake that should become increasingly intertwined, the architectural dimension and the security dimension: how can architects plan bearing security elements in mind, in order to integrate them into museums? How can security elements be designed that adapt to architectural thresholds, making them 'invisible' but meeting the highest requirements? And above all, how can museum entrances suggest that they are accessible to all, physically, socially and symbolically?

Acknowledgements

This work was supported by FONDECYT: Fondo Nacional de Desarrollo Científico y Tecnológico de Chile. Research Project FONDECYT Nº11170140: "EL LUGAR DEL ARTE CONTEMPORÁNEO EN SANTIAGO DE CHILE. Análisis de obras Emblemáticas de arquitectura publica y su vinculación con los habitantes desde la dimensión histórica, arquitectónica, urbana y sociocultural".

Thanks to the research team: María Isabel Toledo Jofré, Consuelo Figueroa Garavagno, Luís Pérez Huenupi, Javier Vera Bravo, Paulina Román Manzo.

Thanks to Sophie Peacock for proofreading the article.

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Received May 2021; accepted in revised form September 2021.

SPATIUM
No. 46, December 2021, pp. 66-72

UDC 712.256(497)
379.844:712.25
Original scientific paper
DOI: https://doi.org/10.2298/SPAT2146066O

THE CITY AS A PLAYGROUND: SKATE PARKS, INCLUSION AND NEW TERRITORY

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There are two central topics in this study: the first topic relates to the physical space created by skateboarding, while the other relates to social capital derived from skateboard culture. The paper analyzes the case studies of three skate parks, in which the theme of social inclusion is the theoretical framework. Looking through the history of skateboarding and integration of skate parks as a part of the urban environment, the theme is concerned with bringing the openness that is part of the design of our public spaces to skateboarding culture, and in general, to the feeling of belonging as an essential part of building social capital. In the manner of shared space, public space has started to be used as a communication platform between community members looking for expression of their needs and desires. The benefits of the skateboarding settings have rarely been the subject of empirical research, so these case studies will deepen our knowledge on why social bonds connected to this sport make such a significant contribution in city landscapes. Individuality and its political manifestation have a structural role in this paper: from the appearance of the architectural figuration to the idea about a movement and a settlement, which for architecture, can be seen in the form of new territories.

***Key words*: skate park, public space, social inclusion, territory settlement.**

GENESIS OF MOBILITY AND CONFLICT

The essence of skateboarding has always been about movement. Movement is what enables us to change ourselves and our perspective on the world around us, thus skateboarding can be used as a paradigm of a state in which the world ceases to be what it has been, unfolding itself before us with its new potential (see: Figure 1).

The history of skate parks is connected primarily with spaces that were specifically created by skateboarding enthusiasts, from the 1960s onward (Brooke, 1999). The main actors emerged from surfers in California who were looking for sporting activity, similar to their primary one – surfing – in order to find a suitable compensation for the time when the sea was calm and had no waves. The activity evolved further, creating the term "surfing the pavement" that has been accepted among young people. The etymological origin of the original name determined the fate of skate parks in the same way both in its beginnings and today. It speaks of an apparent conflict between those who try to use the pavement for movement, like pedestrians, on one hand, and skateboarders on the other hand, who use it for the same purpose but with the added value created by speed and style. On their journey, recreational trick skateboarders can incidentally accrue up to several miles of travel in a day, riding on trick skateboards in order to reach recreational "skate spots" to meet up with fellow skateboarders (Fang and Handy, 2017). We can identify both spatial and social values in this process. Considering that the spatial value of public space is built on the varied needs of citizens, their perception of the quality of public space can be discussed. Unfortunately, perceptions of skateboarders and their behaviour have been tarnished in some instances by damage incurred by skateboarding on public surfaces (Bradley, 2010). Spaces skateboarders use to ride on in urban conditions are not purpose-built for skateboarding. Street furniture, curbs, stairs and railings are the first material "victims" in public space. A famous saying among skateboarders tells us more about the problem, "If a city doesn't have a skate park, it is a skate park" (Claflin, 2017). The result of this different interpretation of a city is often the marginalization of young sportspeople, since skateboarding is not always a legal travel mode. Skateboarding is often

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prohibited in large sections of cities, including roads, sidewalks, districts, and other public spaces (Nolan, 2013; Fang and Handy, 2017). Besides other misconceptions, the actors in this drama have often been linked to graffiti culture, crime, drugs and alcohol, in short – vandalism (Taylor and Khan, 2011; Weston, 2010; Taylor and Marais, 2011). Even countries with a long-lasting tradition of skateboarding have a big gap of misunderstanding, which has led to some of the previously mentioned consequences. Regarding other stereotypes, it is important to mention anti-social behaviour as one stereotype that follows this group of people, although many findings, including this paper, show us the opposite (Goldenberg and Shooter, 2009; Weller, 2006). As a result, the self-image of the socially excluded group is affected by the weakening of generally accepted social rules based on the behaviour of individual members of smaller groups (Carey, 1975; Janković and Pešić, 1981). One of the consequences of this unilateral segregation relates to the strengthening of links between sportspeople themselves, crystallizing the common need of the smaller group, and consequently, joint action aimed at solving the common problem.

Young skateboarders choose to use public spaces because of their accessibility and the opportunities they offer for tricks, which eventually leads to placemaking produced by the users. Some theorists directly point to "moral responsibility" towards the urban environment that facilitates civic engagement and community interaction (Whyte, 1980). The openness of public space towards different or vulnerable social groups speaks of the quality of the urban environment, so by its nature, the opportunity for skateboarding tricks is derived from such an environment. It is clear that skateboarding and public spaces define each other. Skateboarders did not step aside in this conflict with regard to how space is used, but rather they have continued their activities and almost, as a rule, a new and creative space in the urban environment has emerged.

Figure 1. Towards the Dead Sea: An appearance of a pure figuration in West Bank
(Source: Milorad Obradović)

CASE STUDIES OF THREE SKATE PARKS

This paper focuses on the case studies of three skate park projects, using the method of comparative analysis. This method was chosen because architect Milorad Obradović, one of the co-authors, participated throughout the whole process of their design and construction. The self-reflective method used in this paper can give us more precise data through the continuation of self-analysis in the project activities (Bourke, 2014). Given that the construction of skate parks provided us with unique insights into the social bonding process, we need all possible background data to see the process as a whole. Other reasons for the three-model comparison are related to the examination of different preconditions, such as geographical or social, and whether they provide a different or the same outcome. Discussion on all physical and social barriers will be deepened through analysis and conclusion in the final section of the paper. This methodology could be relevant to finding new connections and problems in similar scenarios, considering today's automatic production of public spaces with a lack of connection between the designers and users. The projects analyzed here are currently in different phases of completion: the skate parks in Čačak (Serbia) and Bethlehem (Palestine), have been constructed, and the skate park in Lazarevac (Serbia) is in the phase of stagnation. These examples have different spatial and social influences, making them convenient for examining the methodology that connects them. According to Putnam (2000), the local community could be an ideal type of a generator of social capital and a place to investigate all forms of association that have the potential for bridging and bonding social "tissue". This typology emphasizes bridging the social differences between actors that are not necessarily closely connected by personal and family ties. Moreover, it speaks about mutual acceptance and public recognition of socially excluded groups (Bourdieu, 1985). The powerful strength of social bonds created by skateboarding especially stands in that respect, and there are numerous examples of collaborative activities such as developing and maintaining community sites (Jenson *et al*., 2012). To avoid conflict of interest between skateboarders and pedestrians, the most common compromise envisages the construction and financing of an adequate sports ground for extreme sports activities supported by the local government. According to examples of good practice and the case studies of three skate parks explored in this paper, it is possible to extract the methodology which could be used in further urban design, not only from an architectonic point of view, but also as a catalyst for social networking.

SKATE PARK IN ČAČAK: DESIRE FOR RECOGNITION

The initiative to build a skate park in Čačak lasted for 15 years until a realistic framework for its feasibility began to emerge. The architect of the skate park and co-author of this paper organized the initiative and led the project from its beginnings. The shared goal was to have a place where skating was common for all ages. Young enthusiasts of extreme sports who spontaneously gathered in public places due to the lack of suitable conditions were faced with almost the same preconditions of social exclusion as previously explained. Skateboarding in this town was linked with "graffiti culture" and other forms of vandalism, leading to animosity from some stakeholders, including the police. One of the consequences of the typical negative approach was the local government's consideration of the high price of such a playground where somebody could get injured. Although the local government committed itself to securing the funding for the project, the negative point of view and concern with regard to possible injuries prevailed and resulted in less money for the whole project, which caused the work to slow down. In contrast, the results of many studies related to extreme sports activities illustrate that achieving one's best and the core value of freedom in the skateboarding subculture outweigh even the risk of injury

(Haines *et al*., 2011). In line with the limited resources, a skate park structure of 600 m^2 was designed in one of the derelict parts of the river Morava bank, with spatial potential for further development (see: Figure 2). The intention was to transform the fifteen-year-old pessimism, which had contributed to the decline in interest in the sport itself, into the energy of new ideas and a new beginning. The fact that the number of sportspeople in this process often varied additionally slowed down the project before it began. At one point, their number declined to a mere two in the town, and it seemed that this challenged the legitimacy of the project. In response, a few older skateboard riders started to give free lessons in skateboarding in the town square, and help acquire necessary skateboarding equipment. With time and dedication, a group of thirty young people was formed, all of them connected through the sport they loved. The same group of young people were to constitute a necessary critical mass of volunteers in the later stages of the project. After a strong initiative that lasted over 15 years, town officials put themselves in charge again to help skateboarders with funding and the procurement of legal licenses. The funds for construction works were not enough, so skateboarders joined a non-government organization with a symbolic name, *Alternative for Čačak*, which aimed to improve their organization in legal terms, with new opportunities to collect money for the project.

times of oscillations and exhaustion of the project. Together they were all pushed, as a group, in a new direction inciting them to strive for their legal association. This is similar to what Bourdieu talks about, explaining social capital as the sum of the resources, actual or potential, that an individual or a group accrues by virtue of possessing a durable network of more or less institutionalized relationships and recognition (Bourdieu, 1985). A specific kind of civic activism emerged that involved a large number of schoolchildren and students, creative people and artists, who wanted to use their skills to offer an unusual approach to help with problem-solving. In this way, the added value spilt over other parts of the city, and later, in the same year that the skate park opened, over 500 m^2 of dilapidated facades of public institutions, primary schools and university buildings, were repaired and covered in murals. That these design solutions are sustainable is also indicated by the fact that the subsequent activities involved repairing and painting over 4000 m^2 of facades over the following few years, which made quite an ordinary event into something much more significant. The Days of Urban Culture festival will continue to exist as another, newly founded, legal organization over the next six years, with no signs of decline in the newly emerging enthusiasm, and the town of Čačak will have not only a new urban space to offer, but also a new tourist attraction and a cultural event of economic value.

Figure 2. The New Position: establishing a balance between space and recognition in Čačak (Sources: Bojan Pajić and Milorad Obradović)

Given that the park itself was being built for many years following the original initiative and that it took three years to construct it, common intergenerational energy was accumulated. In addition to a newly built form, it was also the inspiration for a unique event – an arts and sports event called Days of Urban Culture. This event has since enabled participants to present various sports skills, as well as several music events and children's workshops. According to Arcordia and Whitford (2006), festivals are seen to have significant economic, socio-cultural and political impacts on the selected area and community groups. They also provide possibilities for urban development.

Due to the constant lack of funds for building skateboarding elements, young people from the skateboarding community got involved again, making up for the lack of funds with their manual labour. This action made the project's implementation cheaper. However, apart from the financial value of such activism, this element of personal identification with the project later proved to be a necessary resource in

SKATE PARK IN BETHLEHEM: MORE THAN A GAME

The construction of a skate park in Bethlehem was within the jurisdiction of the humanitarian organization Skate-Aid from Münster in Germany. The project was implemented in the children's orphanage SOS Children's Village, as a part of the reconstruction of a dilapidated children's playground. The conditions for building such an object in the West Bank area of Palestine were extremely difficult because of the obsolete infrastructure and specific political circumstances, but this did not have much influence on the social context in which the project was interpreted as progressive. Knowledge of the skate culture of children in the orphanage and the surroundings was rather rudimentary, though not entirely non-existent. The very idea that something new was being built in their backyard awakened a sense of community, which finally led to their participation in the endeavour. The profile of children in this case study was, in fact, mixed, both in terms of their interests and inherited relationship, ranging from friendly to violent. Enforced

cohesion of the children meant that they faced a couple of minor problems at the construction site, and the best way to solve them was to establish and develop mutual trust. In this context, we can draw on Newman *et al*. (2007), who argue that the solidarity and trust which form between groups of individuals who have overlapping connections is the ''glue'' that binds social networks together, as they enable the group's membership to feel both accepted and valued, or even on Coleman (1988) who argues that relations of shared obligations, expectations and trust are a type of resources for actors, which can be exploited with the pursuance of a common goal. In this respect, spontaneously over time, most of the children became involved in minor construction works on their own initiative. As the number of children in the vicinity of the construction site increased, the rest of them joined in eventually, so the public space became a gathering place (see: Figure 3). If we speak of trust as a common denominator in the development of relationships, Putnam (2000) also uses it in his definition of social capital, arguing that connections among individuals are a basic precondition, since they are the product of social networks and the norms of reciprocity and trustworthiness that arise from those values. Individual contributions brought back new meaning and automatically became an integral part of the project's collectivism. In his hierarchical theory of human need, Maslow (1954) ranked the development of a sense of belonging as being the third-highest human need, placing it only below basic and safety needs. We must take into consideration that all the children in the orphanage had already lived in at least one other place, so place attachment could be regarded as important for them. Place attachments develop slowly but can be disrupted quickly, and therefore, can create the need for a long-term phase of dealing with the loss and repairing or re-creating attachments to people and places (Inalhan and Finch, 2004). Furthermore, Fuhrer and Kaiser (1992) emphasized attachment to a place as a basic facilitator of emotional needs. A sense of belonging to an idea is also implicit in the words of one of the children from the orphanage, Ibrahim, who said in an interview with the British Guardian: "Painting the skate park made me feel part of something. I want to skateboard every day because it feels like flying" (Haben, 2015). The future of the young people who were living in the orphanage was uncertain, so this activity looked like something solid to hold on to. The new source of activity shifted the situation from being one of mere survival towards one with a potential future – to something more than before.

In this case, funds for implementing the project were provided in advance and there was no need for children to involve with physical labor. Nevertheless, directly through the involvement of many children on the site, manual work resulted in building self-confidence, usefulness and awareness that there is a place for everyone. Despite a *de facto* existing playground, though derelict, it was necessary to affirm territoriality and the role of the main actors. Their new identification with this space was later the main driving force and the reason for their mass participation in a real, physical sense, and not by means of a common activity, as seen in the first case study. This indicates the separation between the concept of the necessity for the project and the necessity of play for strengthening the connection with the newly founded territory in their backyard. The mutual and reciprocal connection between space and people cannot be explained merely as a space that evolves as an independent process, but rather a process made of spatial and social values together, which produce an authentic code of the site.

SKATE PARK IN LAZAREVAC: THE FUTURE ON STANDBY

Surfing the pavement in Lazarevac was no different from the beginnings of surfing in any other city. Due to the lack of an adequate sports facility, public spaces are the only meeting place for the skateboarding population. Since it is easier to recognize the habits and actions of fellow citizens in a smaller community, the leaders of the town's administration were not to blame the children for destroying the public assets. A group of skateboarders presented the idea of a skate park and the town administration understood its spatial potential for reducing vandalism. The project involved a large number of both older and younger citizens, who acted together on this occasion as a responsible community. In their study, Taylor and Marais (2011) showed that city planners frequently have to juggle competing community arguments about the need for such adolescent spaces, particularly concerning a potential skate park being built in a residential area. Otherwise, there could be a chance of creating an unintentional gap of misunderstanding. The planned location for the skate park was within the city sports centre since it had an already determined function and purpose. Although the Lazarevac case is unique in terms of the participation of a large number of people and the local government, the future users (i.e., the skateboarders) were slowly left out of the planning process and it was taken over by public services with the idea of further operationalization. Unfortunately, after the restructuring of the public service

Figure 3. The Necessity: "Because it feels like flying" (1) (in Bethlehem)
(Sources: Milorad Obradović and Partick Richey)

Directorate for the Construction of Lazarevac, the interest in participation in the project drastically declined, while the social capital carried by young initiators, was not used in accordance with their potential. Although the planning process for the skate park was finished, the funds were repurposed. In most case scenarios it looks like funding is the most important aspect of how to build a skate park and it is sometimes not even taken into consideration that the group of skateboarders can provide funds by themselves, or even build it by themselves. In this regard, it is known that there are many ways of doing so, since despite the daunting cost groups are determined to build skate parks in their communities, employing various methods to raise money, through large donations, grants, corporate sponsorship, city funding and even old-school fundraising (Claflin, 2017). The exclusion of skateboarders from the project in the implementation phase that followed the design phase can be considered as the main reason why the project has not yet been implemented. The skate park project is, therefore, in a vacuum of its existence. According to the development-oriented theory of social capital (Woolcock, 2004), there is a three-type model that differentiates between bonding social capital (connecting close actors), bridging social capital (formed among socially distant actors) and linking social capital (relationships between citizens-actors and institutions). We can see that the *linking model* is absent and therefore the circle is not closed in line with the necessary roles in the process. The institutions failed to (re)connect with the carriers of initial social capital and sympathy for young people's needs. The perception of the real future that has melted away due to the short-term vision of the actors responsible has resulted in further deterioration of public spaces, leaving a "spatial gap" that even today is filled with mutual misunderstanding and intolerance between different generations of citizens. Many of those children who were searching for a place to skate eventually found one in the nearest big city, where most of them started their studies later, choosing a better environment for themselves with more adequate content for their development in terms of both education and recreation.

THE ISSUE OF NEW TERRITORIES

Parallels with models of skate park production presented in this paper indicate that social inclusion is a form of transparency in communication. It represents a two-way process, starting from the broad community to smaller community groups, to the designer of a public space responding to the need for its adequate usage. The subcultural origin of skateboarding and compensation for the feeling of freedom in surfing through movement on the pavement further strengthen the character of creating an environment with a meaningful purpose. Lefebvre argues that modern space is the space of "blank sheets of paper" and it consists of the projection of an "intellectual representation" instead of hearing the human body, and it enacts through physical gestures and movements (Lefebvre, 1991, p. 200). Drawing on a similar conclusion, Borden (1988) advocates that public space needs to become more body-centric in its design. It also includes the question of identity, since skateboarding reflects both the characteristics of the sport and the partaker's desired social identity at the same time (Wheaton and Beal, 2003). This is not just about the relationship between the real and the virtual. From an architectonic perspective, the virtual in this context represents the natural state of things that turns architectural projections into physical objects of architecture. In this sense, skateboarding is using an instrument of individual projections, which could be applied in a physical (spatial) context, thus asking for balance between these two states.

Searching for differences between the three case studies presented in this paper, it is clear that the first case study had a good start with already established social capital through the development of mutual trust among skateboarders as the carriers of social capital. Even with the decline of members in this initiative, some participants stitched together fragmented pieces based on the old and familiar values of established identity that eventually brought new goals. In this respect, the first two case studies established their bonds through the social capital they produced, where spatial possibilities refer to the next phases in the process. The second case study in Bethlehem started with the resolved issue of location, which was inside an orphanage, so the only question concerned the children's ability to act as a coherent group. It was the place of creation of a new meeting place, thus the creation of common trust and a sense of belonging, with new social activities on the site. On the other hand, the third case study started with established social capital but it faded away without a proper role to play or specific territory to "conquer". Although the spatial values are all set in Lazarevac, they are still looking for social components to glue the activities together. According to other studies, a social network's identification with a particular public space not only facilitates face-to-face interaction between members by providing them with a place to socialize, but it also provides opportunities for intra-group networking and interactions with the wider community (Fried *et. al*., 2004). If we take a closer look at some similar studies related to skateboarding (Walker *et al*., 2014; Wood *et al*., 2004), we can identify specific behaviour patterns and most of them are related to interpersonal connections. In one study which examines the health benefits derived from skateboarding in skate parks, a content analysis of 35 skateboarders' survey responses revealed four benefits: *establishing new and reconnecting with old friendships; bonding to a friendship group, gaining peer respect and status; and increased opportunities to interact with people* (Walker *et al*., 2014). In another study, pro-social behaviours were much more likely to be rated as occurring often, and 69% of survey respondents indicated that they would like places to hang out with friends added to the skate park area (Wood *et al*., 2004). Although the social attributes take more attention among the skateboarders at first glance, spatial values follow as the next crucial attribute. In this respect, we can see that specific territorial development occurs if the starting social values between collective identity and level of "belonging" are set. In the first section we saw that different interpretations of public space started segregation in the first place, which eventually resulted in the weakening of social "rules" leading to deviant behaviour (Carey, 1975; Janković and Pešić, 1981). Eventually, after the reconciliation of mutual relationships with a broad community, it became a key solution for adaptation in both social and territorial aspects.

Therefore, we can see that skateboarders, the same as other users, are willing to connect with (public) space, where they can accomplish their desires and social bonds (see: Figure 4). It is no wonder why noticeable intergenerational usage of skate parks has been seen as common (Taylor and Khan, 2011). All case studies had the social component in common, which prevailed over the space itself. Regarding the starting hypothesis of public space as a communication platform, construction workers at the construction sites easily achieved a strong connection with children involved in the skateboarding projects. In Bethlehem, for example, the workers spoke a different language than the children, but the language did not represent a barrier at all. Communication was established around the same goals and values, which, in the end, resulted in more frequent activities for the children to participate in. In the mornings, construction was ongoing with a little help from the children, but the evenings were meant for children's exhibitions with a little help from the workers. Construction of the skate parks can teach us how a responsible community can look like if all members of the community are involved and included. In terms of gathering people, public space started to become a translation tool, where skateboarding was only a small fragment of the activities that respond to the desire for attachment and other emotional needs. For Bourriaud (2009), the question of settlement is the basic question of the survival of a culture and the presence of figuration by *the invention of self*.

the openness of a public space for individual interpretation, and it could result in the re-examination of our current knowledge about the existing urban environment we live in. One of the proposed solutions regarding how to deal with public space that has possibilities for skateboarders and ordinary citizens was not to design skateboarding out of the built environment, but rather in it (Borden, 1998), or as recommended by the authors of this paper for communities to be allowed to envision and manufacture their local places by themselves. In this sense, they become indicative of the layers of cultural behaviour, bringing back the focus on the individual meaning and emotional connection to a public space. Different forms of public spaces are considered as a shelter for identities to thrive, taking the role of gathering and connecting people, such as festivals or other events. These characteristics are recognized among groups without the same interest in a particular space, thus showing its potential for dialogue within the community. The benefits of joint citizen action are clear, therefore the legislative possibilities of such civil action that bring mutual endorsement should be taken into consideration. Nevertheless, the users will give their last word on whether they enjoy prefabricated public space, or whether they are looking for improvement throughout cooperation. Finally, the users of a space should answer the question of whether that space is open or not and what their own role or sense of belonging is within it.

Figure 4.Territories of Democracy: And & Or (in Čačak)
(Sources: Danijela Marinković Beogračić and Bojan Pajić)

CONCLUSION

The skate parks in this study demonstrate various forms of social inclusion. The common denominator in all three case studies is the direct involvement of skateboarders in the process of their creation. If individuals who possess a clear perception of urban space form a community, the space acquires a new identity and becomes a coherent entity. By involving members of the local community in the project activities, added value was created through new connections and attachments among the actors, which continued to strengthen and increase later on. Therefore, the success of a project is hard to predict without the participation of its future users. Its new identity is established within a unique set of actions that separates their group from another. The self-build projects raise the awareness of the importance of the inclusion of all actors, in this case, skateboarders and institutions, in the decision-making and implementation process. This brings up one of the most important themes –

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Received November 2020; accepted in revised form November 2021.

SPATIUM
No. 46, December 2021, pp. 73-80

UDC 72(547)"20"
711.2(574)"20"
Review paper
DOI: https://doi.org/10.2298/SPAT2146073A

THE TRANSFORMATION OF MODERN ARCHITECTURE IN KAZAKHSTAN: FROM SOVIET "INTERNATIONALISM" TO A POST-SOVIET UNDESTANDING OF THE REGIONAL IDENTITY

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After the collapse of the USSR at the end of the 20th century, the Soviet republics, including Kazakhstan, that had been previously united within one country became independent countries and went through decades of reforms to establish new social, political and economic frameworks and revive their own cultural traditions. The transition from the state-planned Soviet-era economy to the market economy was accompanied by dramatic changes in all aspects of life – in the economy, science and culture. The Soviet architecture in Kazakhstan met the contemporary requirements of its time: all settlements were developed according to approved master plans, and design and construction were carried out by large state companies with powerful technical potential. 30 years of post-Soviet life have gone by since 1991, and Kazakhstan has gone through some transformation in its architecture; it is now searching for methods of expressing a unique "Kazakh" architectural language with its own particular regional characteristics seen in: arches, domes, ornamental motifs of decorative design.

The purpose of the study is to analyse the transformation that the architecture in Kazakhstan has undergone so far in the 21st century using the example of public buildings, and to identify the factors forming new features of architecture. Realizing the dependencies of Kazakhstan's architectural transformation on the new social and economic conditions will help architects strengthen the regional identity in the architecture through the symbiosis of traditional local experience and new global technologies.

***Key words*: transformation, avant-garde architecture, Kazakhstan, regional identity.**

INTRODUCTION

Large-scale cataclysms, such as a change in the social and political structure, or transition from the state-planned economy to market relations, undoubtedly entail changes in all aspects, both tangible and intangible, of public life. The development of architecture in such periods gains a special momentum, and it is transformed according to the new needs of the state.

Soviet paternalism expressed in the governmental regulation of architecture covering one sixth of the globe was replaced by the quest for regional originality in the independent post-Soviet states. Since 1991, the search for new techniques and ways to improve the modern architecture in Kazakhstan has become a trend, especially significant for the young state making its own unique image on the international scene. Changes have taken place mainly in expressing architectural imagery using a wide palette of tools ranging from elements of traditional architecture to global "replicas".

Regional originality has been successfully formed through the organic combination of traditions and global trends within the local contexts. The study and analysis of local

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natural, historical, cultural and economic specificity contribute to "...understanding the traditions of the regional cultures and methodological use of their qualities that are not visible to a superficial analysis..." (Asskarov, 1986, p. 39).

To see the changes that have taken place in the architecture of Kazakhstan, it is useful to compare Soviet and post-Soviet public buildings (museums, theatres, youth palaces, etc.), which represent the key elements of the spatial environment. These buildings express the active response to the cultural needs of society and most clearly reflect the local context. The architectural image of these buildings derives from the ethnic, historical and construction traditions, as well as modern technological innovations, linking society with its cultural memory. As a result, this brings a sense of ownership and belonging to history, which helps better self-identification.

In the post-Soviet period, the residential architecture has also changed: the planning concepts have become diverse, regulatory standards for living space less stringent, and facade solutions now use modern cladding materials. Comparison between the Soviet and post-Soviet architecture reveals a gradual change in the creative paradigm, from the romanticism of the 1970s through the monumentalism of the 1980s to the avant-garde of the 2000s.

In general, the architectural preferences have obviously changed in Kazakhstani cities: the development trajectory of modern architecture in Kazakhstan stems from the Soviet experience (Soviet neoclassicism and international architecture), with its form-making moving towards avant-gardism supported by regional originality.

The authors of this article set out to analyse transformations in the modern architecture of Kazakhstan. The paper shows that a specific feature of the projects implemented by domestic and foreign architects in Kazakhstan since 1997 is the intention to express the regional identity. Such projects have been carried out primarily in two cities – Nur-Sultan (formerly Astana), the capital, and Almaty, the largest city in Kazakhstan.

Following 1991, when Kazakhstan gained independence, the search for regional identity in the architecture became an issue of special interest. Architecture and construction were boosted when the capital moved (in 1997) from Almaty to Astana (renamed into Nur-Sultan in 2019). The world witnessed the capital of Kazakhstan swiftly turning from a provincial Soviet city into a modern avant-garde "scene" of architectural premieres. That transformation of Soviet-style architecture into an avant-garde style extended to other cities as well.

The capital was built up at a rapid pace. A large number of original projects were implemented under Kazakhstani architects: the House of Ministries, development of the Main Square and Round Square, Vodno-Zeleny Boulevard, multi-storey residential complexes, museums, office buildings, hotels and shopping malls, universities, medical centres, and many others. Among them are residential complexes Astana Triumph (architects: A. Zuyev, N. Borisskin), Northern Lights (architects: A. Saumenov, Ya. Ezau, Sh. Mataibekov), and Grand Alatau (architect: Sh. Mataibekov), Temir Zholy Administrative Tower (architect: T. Abilda), and others (Abdrassilova *et al.*, 2018, Chikanayev, 2008).

The opening of its borders and strengthening of international relations opened up new opportunities in architecture and construction. International competitions were held to attract well-known foreign architects along with Kazakhstani specialists to design the capital city's buildings, and as a result, projects combining local traditions and global trends in architecture were implemented. Projects by foreign architects expressed then-current ideas adapted to the then-current realities of Kazakhstan, accelerating progressive technological and artistic trends. On the one hand, cooperation with world-class architects yielded dividends such as the introduction of new construction technologies into local practice. On the other hand, a style created by "foreign" culture professionals in the architecture of Kazakhstan generally combining universal solutions with the creative interpretation of regional features in real practice is an interesting challenge that requires analysis and thorough understanding.

Building a new city on a new territory on the left bank of the Yessil River (while the old Soviet part of the city remained on the right bank) gave architects a historical carte blanche for implementing their own creative ideas. The search for regional originality in the architecture of this developing country has intensified. This process continues to be complicated and ambiguous: there are both undoubted achievements and obvious disappointments.

In the 21st century, this country has been actively building residential, public and industrial buildings and structures. The architectural and construction industry of Kazakhstan both solves pragmatic tasks (shaping the living environment for the people), and intends to improve the country's image on the international scene, as well as attract foreign investors and tourists. In this process, great importance is attached to the originality of the architectural environment of cities, and individual buildings within them.

Comparing the Soviet and post-Soviet architecture in Kazakhstan has made it clear that certain changes have occurred in several areas:

- economic changes: sources of funding for the design and construction industry are different now. The state-planned Soviet economy assumed that only state funds should be used to design and build facilities, and that each project should be approved by the state. The post-Soviet economy encourages the interest of private investors and offers creative freedom to the authors of different projects. The vast Soviet system of state-owned design institutes has been replaced with private design companies. All major projects are carried out on the basis of international competitions, which ensures a high standard of architecture;
- technological changes: Soviet architecture was mainly based on industrial construction methods with the use of prefabricated reinforced concrete structures. The new market economy has welcomed foreign investors, new technologies, and modern construction materials to Kazakhstan;

- typological changes: during the Soviet era, there was a certain range of facilities, which were mainly built according to standardized designs, such as governmental agencies, public schools, hospitals, etc. During the post-Soviet period, unique construction projects have become prevalent.

The typological changes are associated with changes in the structure of supply and demand for various services, for example, contemporary shopping malls combine many functions for which separate buildings were erected during the Soviet era such as shops, restaurants, gyms, children's play parks, recreational facilities, and consumer services (dry cleaning, photo salons, shoe and clothing repair, etc.). Individual movie theatres are no longer constructed, since now they are part of large shopping malls.

Big changes have also occurred in residential architecture: typical Soviet-era buildings differ a lot from today's residential complexes, which are built as individual projects, both in terms of their comfort and variety of facades;

- artistic changes: the restrained shapes of Soviet architecture dictated by governmental policy have now been replaced with a variety of shapes and forms, and many unique buildings have avant-garde features. This change in the creative paradigm is quite natural: the best examples of Kazakhstan's architecture of the 1970s expressed the ideals of romanticism, while the political stagnation of the 1980s led to monumental forms in the architecture, and then the post-Soviet history in the 2000s gave rise to avant-garde ideas.

The first two decades of this century in Kazakhstan were marked by "reformatting" the architectural language: this means that the consolidation of local and foreign experience was reflected in the shape of buildings and structures with new artistic image solutions. A key factor in the artistic transformation of the architecture in modern Kazakhstan is the search for a regional identity through use of avant-garde shapes.

MATERIALS AND METHODS

The comparative analysis method was used for the study. The authors compared large public buildings built in the Soviet era with post-Soviet buildings of a similar functional purpose. Comparing the two periods has revealed specific differences in their architectural form and their building language.

The architecture of Kazakhstan in the 20th century developed in line with the Soviet mainstream standards: all large buildings in Kazakhstan were built after they had been approved by the central ministries located in Moscow, in accordance with national standards and based on a standardized approach to architectural and planning, structural and technical solutions. However, the best examples of cultural, entertainment and sports buildings of the 20th century demonstrated the unique plasticity of their facades, and bold engineering solutions in the spirit of those times. The architectural and construction industry of Kazakhstan was a part of the huge Soviet system. From 1956, the Alma-Ata House-Building Plant, one of the largest plants in the USSR producing reinforced concrete structures, operated in the capital city of Kazakhstan, until it closed in the '90s.

Large buildings were actively constructed in Kazakhstan from the 1960s to the 1980s, including cultural facilities and consumer services, as well as entertainment, sports, educational and industrial buildings and facilities. The development of the architecture of public buildings reflected the socio-economic and political conditions (economic power of the state, centralized control of design and construction operations). All aspects of life including architecture were politicized, which affected the appearance of the buildings – their form was traditionally solemn and based on standardized techniques and elements of construction. Only a few unique buildings were decorated with national motifs. Truly independent and original projects were also allowed, but rarely (for example, Chokan Valikhanov Museum, whose authors were architects: B. Ibrayev, S. Russtambekov, A. Seydalin, 1985) (Figure 1).

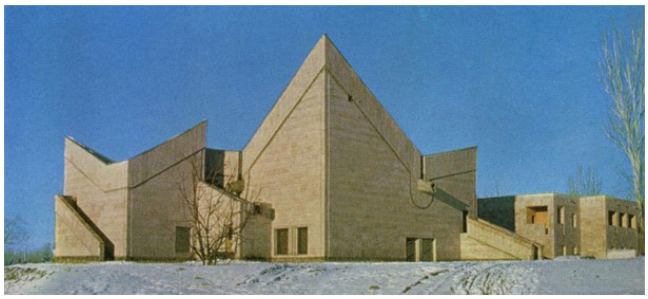


Figure 1. Chokan Valikhanov Museum, architects B. Ibrayev, R. Seydalin, S. Rustembekov, 1985
(Source: Galimzhanova and Glaudinova, 2011, p.127, 131)

In general, unlike in the Soviet era, the architecture of independent Kazakhstan is mainly funded not by the government but by private local and foreign investors. New buildings actively use foreign technological innovations, and often have avant-garde features with elements of regionalism.

The comparative analysis involved not only projects by Kazakhstan's architects but also those by foreign architects. The international design competitions held for large facilities (EXPO-2017 Complex (Figure 2), Palace of Peace and Reconciliation, Khan-Shatyr Shopping Mall, Kazakhstan Movie Theatre and Concert Hall, as well as hotels and residential complexes) attracted new participants. Projects by foreign architects spurred creative ideas and stretched the capabilities of local architects. The diversity of national cultures, along with architectural traditions, has been a source of new trends in form making, and the enrichment and revitalization of local experience and social fabric through actualized interpretation has given rise to avant-garde architecture (Ikonnikov, 2001).

New construction technologies introduced into local practice and representatives of "foreign" culture involved in creating the architecture of Kazakhstan have contributed to the fusion between universal global techniques and local features creatively interpreted in the regional architecture. For example, in over 24 years of constructing the capital city,

the territory of Nur-Sultan has become a kind of a laboratory of unique buildings created by architects with international design experience: Kisho Kurokawa, Norman Foster, Manfredi Nicoletti, Adrian Smith + Gordon Gill Architecture, and others.

In this study, a typological affiliation (museums, culture and sports facilities) is used as the basis for comparing Soviet and post-Soviet buildings, as it is in public buildings that we can most evidently witness the architectural trends of different historical periods.

Figure 2. International specialized exhibition EXPO-2017: Future Energy (in which the sphere is home to Nur-Alem technological museum of the energy of the future), architects Adrian Smith + Gordon Gill, 2017 (Source: E. Danibekova)

Museums

Museums are special types of cultural and educational facilities that promote the education and involvement of the general public in culture and arts. The purpose of museums is to expose, store and study tangible and intangible cultural artefacts, and to give access to and inform the general public of the achievements of culture and science (Noiphert, 2011). It is natural that a museum building, with its peculiar unique architecture, is an object of culture and art itself, as well as a striking element integrating the urban environment (Tzortzi, 2015).

The risk of the widespread dissemination of anonymous architecture in the era of globalization encourages architects and town planners to carefully study and use the features of a given area in regional design. The architecture of museums is a guide to history, a link between past and present generations. As evidenced by the experience of developed countries, various modern museums are buildings with pictorial and inspiring architecture.

In Kazakhstan, museum buildings reflect the main architectural trends of the respective historical periods. Following the 1970s, when Soviet classical traditions were abandoned in architecture, extraordinary solutions were used for some museum building projects.

Special methods of interpreting some forms of distinct architecture based on functionality and climatic adaptation were used during the construction of A. Kasteyev State Museum of Arts (architects: E. Kuznetsova, O. Naumova, B. Novikov, 1975) (Figure 3). The core of the building, providing access to all functional areas, is the atrium, and this is the basis of the entire volumetric-spatial composition of the building (Ayagan *et al.*, 2006, p. 289-290). For Almaty, with its southern climate, an impressively large atrium and a patio with landscape elements are alternatives for creating a comfortable microclimate in the summertime. The architectural volume of the building is concise: the rectangular geometry of the front facade surfaces ends with a four-sided glass pyramid above the atrium. The conciseness of the facades is created with triangular protrusions along the entire perimeter of the building, and a portico which markedly protrudes above the main entrance. In terms of town planning, the museum building was designed as the cultural center, amidst a new developing middle rise residential district of the city. But even today, when multi-storey buildings spring up in this area, the museum building has not yet lost its significance as a key element of the landscape and an example of progressive trends in the architecture of Almaty from the 1970s.

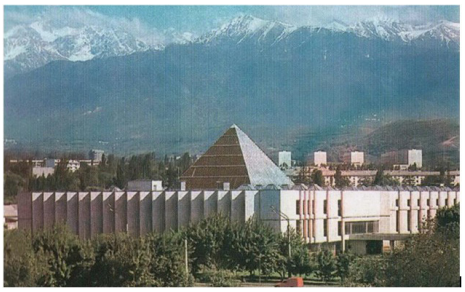


Figure 3. A. Kasteyev State Museum of Arts (Almaty, 1975, architects E. Kuznetsova, O. Naumova, B. Novikov) (Source: Ayagan et al., 2006)

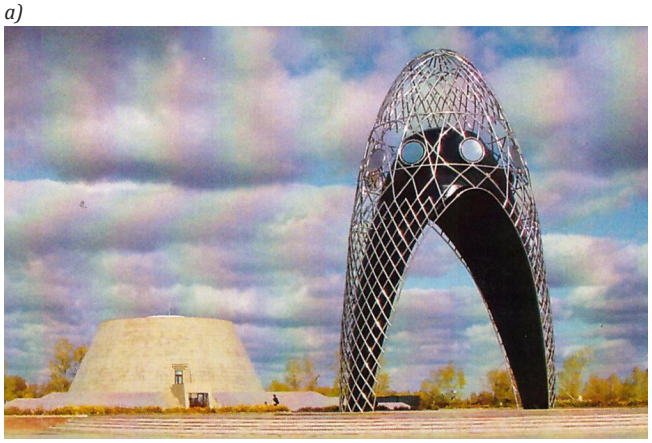
Another building, the national museum, built in Almaty in 1985 – almost in the last years of the Soviet era – is a monumental domed structure with an accented axis of symmetry. The image of the Central State Museum of the Republic of Kazakhstan (architects: Yu. Ratushny, Z. Mustafina, P. Rzgaliyev) was created using techniques inspired by local memorials and places of worship, and applied decorative art. Despite the large dimensions of its palace style architecture, with a number of massive vertical divisions, the building is perceived to be of a harmoniously selected scale, and the proportions of its shapes make the building light and original. The Central State Museum is a pronounced example of cultural trends in the architecture of Kazakhstan in the 1980s.

The architecture of a small museum named after Chokan Valikhanov is a kind of chamber art (architects: B. Ibrayev, R. Seydalin, S. Russtembekov, 1985). The project reflects the creative style of architect B. Ibrayev, who has always incorporated Kazakh cultural symbols in his projects (Galimzhanova and Glaudinova, 2011). The architecture of Abai and Shakarim museum (architect: B. Ibrayev, 1995) (Figure 4) is a reference to Kazakh memorials, while the image of the Korkyt-Ata museum (architect: B. Ibrayev, acoustic physicist: S. Issatayev, 1980) (Figure 5) refers to the myth of the great thinker of Turkic peoples who invented *kobyz*, a national stringed instrument (Ayazbekova, 2011, p.111). The architecture of the ALZHIR memorial museum of victims of political repressions, which is dedicated to female political prisoners, stands out for its originality. The author of the project is architect S. Narynov (2007) (Kodar, 2010) (Figure 6).

Figure 4. Abai and Shakarim museum, B.Ibrayev, S.Agitayev, L.Karpykov 1995 (from the personal archive of B.Ibrayev)

Figure 5. Korkyt-Ata museum, B.Ibrayev, S.Issatayev, 1980 (from the personal archive of B.Ibrayev)

a)



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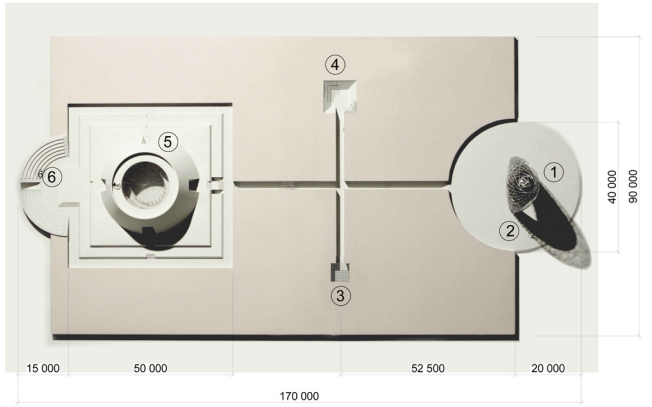

Figure 6. ALZHIR memorial museum of victims of political repressions. S. Narynov, 2007: a) general view (Kodar, 2010); b) model of plan: 1 – "Arch of sorrow"; 2 – Square; 3 – Composition "Despair and powerlessness"; 4 – Composition "Struggle and hope"; 5 - Museum for victims of repressions; 6 - Amphitheatre (photo kindly provided by architect S. Narynov)

The architecture of the National Museum of the Republic of Kazakhstan, which was opened in 2014 in the capital city of Kazakhstan, uses avant-garde shape techniques (Meuser, 2014, p. 115). The museum building is an unusual shape and consists of seven blocks with various numbers of storeys. It is the largest museum building in Central Asia, with a total area of 74,000 m^2. The monotony of the dead walls of some blocks is enlivened with bas-relief of ethnic ornament. The architectural planning solution for the museum was a clear functional division of exhibition zones for the convenient phased movement of visitors, to allow them to follow the historical chronology. In the museum, you can study materials on the archaeology, ethnography, historical monuments, original steppe culture and spiritual heritage of Kazakhstan, starting from the ancient times. Particular attention is paid to modern exhibition technologies, as well as additional inclusions (the research institute, conference halls, and media halls) that meet international standards and contribute to the interactive study of the country's latest history and cultural heritage.

In terms of town planning, the museum is located on the main square, in a compositional relationship with the new center of the capital city which is an architectural ensemble of modern buildings of national importance and cultural value. Nur-Sultan, the second coldest capital city in the world, has strong winds and temperatures can drop to -52°C in winter. These harsh conditions in the north of Kazakhstan require development of appropriate construction methods. One common technique is to protect the architectural environment from snow drifts and prevailing winds by means of dead-walled buildings. When the museum building was erected, the features of the local sharply continental climate were taken into account: the northern facade is an almost solid dead wall protecting the building from prevailing cold winds in winter; while large stained-glass windows face east and southeast, since they are open to sunlight and warmth. The museum appears to the visitors as a dynamic shape symbolizing the strength and power of the state.

Palaces

Along with the architecture of museums, of interest is also the approach to the architecture of other cultural, scientific and art facilities. During the Soviet era, Kazakhstan's most significant architectural structures were built mainly in Alma-Ata (now Almaty), its former capital city. In the early 1970s to mid-1980s, Kazakhstan's architecture enjoyed the flourishing period of so-called Soviet Modernism (Bronovitckaya *et al.*, 1991).

An important milestone in the architecture of Soviet Kazakhstan was the erection of the Palace of the Republic (the Palace of V.I. Lenin in 1970, awarded the USSR State Prize in 1971) (Auezov and Chulakova, 2010), the House of Friendship (1972) (Ayagan *et al.*, 2006, p. 249), and Sats Young spectator's theatre (AHBK Palace of Culture, 1981) (Ayagan *et al.*, 2006, p. 307), since these buildings expressed the national originality and special artistic flavour conditioned by ideological requirements. All these buildings with their design solutions stand out for their monumentality. Their imagery is based on the active tectonic

plasticity of the structural elements on the facades, with the contrast of horizontal and vertical protrusions (pylons) contributing to the "play" between shaded and illuminated areas. Together with the visual and spatial elements that emotionally affect the viewer, the crown-shaped porticos above the main entrance make the buildings look highly expressive. The porticos designed for the Palace of Republic and House of Friendship have a scaly surface, creating the effect of a hovering roof (Ayagan *et al.*, 2006, p.249).

Regional features are most notable in the architecture of the Republican Palace of Schoolchildren (architects: V.N. Kim, A.P. Zuyev, T.S. Abildayev, 1983) (Auezov and Chulakova, 2010). Owing to its expressive architecture and striking design, the building harmoniously fits in the existing town planning context. The dome, typical for traditional Kazakh architecture, covers the observatory, and the use of a dynamic spiral in the planning scheme of the building was dictated by the cosmogonic ideas of the nomads on the structure of the world.

In the post-Soviet period, the focus of active architectural searching shifted from the former capital city of Kazakhstan, Almaty, to the new capital city, Astana (currently, Nur-Sultan). The new unique buildings of Nur-Sultan such as the Palace of Peace and Reconciliation (architect N. Foster) (Figure 7) (Meuser, 2014, p.172), Palace of Schoolchildren (architect N. Yaveyn) (Figure 8) (Meuser, 2014, p.182), Khan Shatyr Shopping Mall (architect N. Foster) (Meuser, 2015) and others were designed by foreign architects. These unique buildings and structures can be classified as examples of avant-garde architecture that give a unique look to the young capital of Kazakhstan (Chikanayev, 2008). The Palace of Peace and Reconciliation, designed by architect Norman Foster, was erected in 2006 in connection with the International Congress of World and Traditional Religions. The pyramidal look of the building reflects the regional view of the world: it has a square base (61.8 by 61.8 meters) which symbolizes the earth, while the top of the pyramid means the sky, eternity. The building is interpreted as the center of the universe where various religions unite to form a community. Nur-Sultan's cold climate was also taken into account by the architect: British engineers used unique movable hinged structures at the base of the pyramid that can respond to seasonal temperature fluctuations by contracting and expanding with an amplitude of 6 cm.

The Palace of Schoolchildren, designed by Russian architect N. Yaveyn, looks like a giant cylinder (with a diameter of 156 m) with a central atrium, which is associated with the traditional shape of a *yurt* - a demountable dwelling of the nomadic Kazakhs (Figure 8) (Meuser, 2014, p.182).

In the nomadic life, the streamlined shape and lightweight structure of a *yurt* were dictated by the living and climatic conditions that required resistance to strong steppe winds. The *shanyrak*, a crowning wooden round element used as light and smoke extraction, and the *uyks* (dome planks) were the main components of a dwelling. The composition of the shanyrak and the uyks was also of a sacral significance symbolizing the Sun, with rays directed into the eternal sky (Meuser, 2014, p.182).

A modern interpretation of the *uyks* in the form of an outer mesh metal structure is present in the architecture of the Palace of Schoolchildren. The appearance of the building is dictated by its internal content: protruding rectangular blocks accentuate the clear delineation of the functional areas. In general, the palace is an avant-garde reading of traditional shapes combined with concise geometric volumes moving in a space and based on the ideas of constructivism and suprematism.

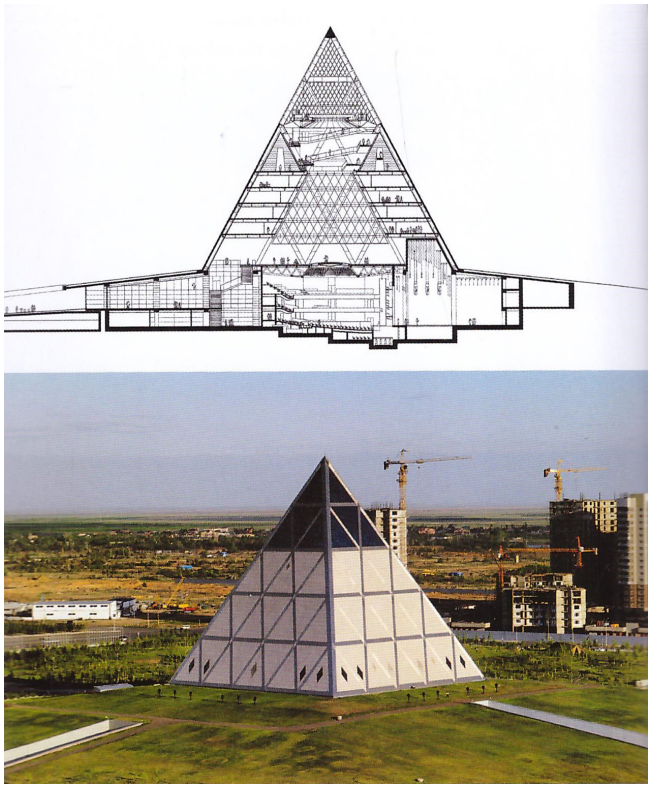

Figure 7. Palace of Peace and Reconciliation (Nur-Sultan, 2006, architect N. Foster). Section and general view (Meuser, 2014, p.172)

Figure 8. Palace of Schoolchildren (Nur-Sultan, 2010, architect N. Yaveyn) (Source: E. Danibekova).

The constructivism of the building is expressed through the functional conditionality of the form-making tectonics, and suprematism is expressed through the visual emotional perception of the composition, built on a contrast of vertical volumes and active "outflows" of horizontal forms. Suprematism in architecture implies avoiding traditional

décor, or its replacement with plane partitioning, or bas-relief not related to the context of the area. "Plane painting" using a geometric ethnic ornament on the facades of the building creates the allusions that give rise to new sensations.

The form-making concepts of the Palace of Schoolchildren in Nur-Sultan can rightfully be connected to new transformations in the avant-garde architecture of Kazakhstan.

Other facilities in Nur-Sultan expressing the new architecture of Kazakhstan include the Palace of Independence and the Shabyt Palace of Creativity, which are located on both sides of the main compositional axis of the capital city passing through Akorda (residence of the President of the Republic of Kazakhstan) and the Palace of Peace and Reconciliation (Meuser, 2015).

The Palace of Independence (Linea Tusavul Architecture, 2009) is a complex of art galleries, museums, movie theaters, a digital library designed for holding various events, exhibitions, concerts, etc. (Meuser, 2014, p. 166).

The Shabyt Palace of Arts (Sh. Mataibekov, 2009) is a unique multifunctional cultural building that is a creative space for all types of arts (Meuser, 2014, p. 164). It is a house of the University of Arts of Kazakhstan, with lecture halls, art, dance and music studios, film pavilions, concert halls, a gym, a library, multifunctional conference halls, a restaurant, etc. The simple form of the Palace of Arts (conical glass-and-metal cylinder with a cut-out core - courtyard) was based on the concept of art, which is kept by the people as a valuable vessel to be passed on to future generations.

The authors of the building solved a difficult problem: many different functions were enclosed in a round shape. As a result, this unique building is concise with regard to its shape but complicated in terms of its content, with its geometry harmonious to the opposing building on the other side of the compositional axis. This geometry-centered approach to form-making places it in line with a series of the brightest samples of avant-garde architecture in Kazakhstan.

Ice-Rinks

Almaty is the former capital of Kazakhstan, the largest metropolis in the country, located at the foot of the Zailiyskiy Alatau Mountains (Northwest Tien Shan). The city is the financial, scientific and cultural center of the country; it successfully combines traditions and innovation, and harmoniously fuses Asian and European influences. The essential factors in the formation of Almaty's unique architectural images include natural and climatic conditions, raised relief, and a picturesque panorama of the mountainous skyline. These spatial conditions form a favourable environment for the development of sports infrastructure, both in the mountainous and in the urban environment. For the sports complexes to function correctly they must meet strict requirements for adequate engineering communications, distribution of zones and various flows of people. The large areas and dimensions for the main sports grounds stands for many spectators are a fundamental module in designing such entertainment facilities. Designers address the issues of creating comfortable conditions for watching sports games, including the layout of seats for spectators within a large but unsupported space.

Advanced Soviet technologies were used to construct the Baluan Sholak Sports Palace in Almaty (architects: V. Katsev, O. Naumova, designers M. Kasharsky, Z. Volkov, S. Matveyev, M. Plakhotnikov, 1966). This is a two-level rectangular large-span building with metal frame structures covered with roof trusses to a semicircular pattern (Ayagan *et al.*, 2006, p. 245).

In 2017, Halyk Arena Ice Palace and Almaty Arena Ice Palace, the multifunctional ice complexes, were built to host the Winter Universiade in Almaty (architect: S. L. Meleshenko) When erecting the buildings, the following city-forming factors were taken into account from the very beginning: the buildings are located at the intersection of the large highways, which ensures a good view, and emphasizes the unusual smooth shapes of the buildings against the background of the mountains. In these new generation sports facilities, internal functional content corresponds to the external appearance expressed through the shapes of natural elements such as blocks of ice, snow, and huge frozen drops of water sparkling under the rays of the mountain sun. The new sports facilities in Almaty have harmoniously blended into the modern avant-garde architecture of Kazakhstan due to their new constructive solutions and non-standard artistic looks.

RESULTS AND DISCUSSION

The transformation of architecture has occurred as a response to social, economic, cultural and historical changes. A comparison between the Soviet and post-Soviet architecture of Kazakhstan shows obvious changes which have been caused by economic and technological innovations, and led to typological and artistic transformations:

- economic changes took place as a result of a change in the socio-economic structure of the state;
- technological innovations became possible due to the inclusion of Kazakhstan in international processes, and the construction of a new capital city;
- typological changes result from a change in the structure of supply and demand for various services, and an increase in the material and financial capabilities of the population; and
- artistic transformations are associated with the self-identification of people in the independent state, and the creative search for the means of expressing regional peculiarities in architecture. Almost all large modern buildings use unique ways to express their regional identity through certain marking features (graphic, plastic or volumetric decorative elements, shapes of buildings) as allusions to local building styles (domes, arches, lattices) (Abdrassilova *et al.*, 2021; Meuser, 2014).

The authors compared large public buildings from the Soviet era which adequately shaped the architectural appearance of the cities of Kazakhstan, and post-Soviet era buildings with a similar function. The comparison revealed the specific form-making features of the architecture of the two periods. Politicization of all aspects of life, including architecture, in the Soviet era influenced the appearance of the buildings, which were traditionally solemn, and used standardized techniques and elements of construction. Only some unique objects received decoration using national motifs: domes, pylons, ornamental grilles and stained-glass windows, decor,

and stylized stalactites which were "replicas" of regional construction techniques.

The creative achievements of architects from post-Soviet Kazakhstan stemmed from the Soviet experience but gained a new momentum when they started to search for a regional architectural identity. Kazakh architects look for the origins of the intangible culture and interpret them in modern shapes. We believe that the transformation of Kazakhstan's architecture in the 21st century through understanding the regional identity can provide a harmonious symbiosis of traditional values and new technologies.

The combination of progressive construction technologies with the formation of avant-garde architecture of dominant and cultural significance at the regional level is a characteristic of modern architecture in Kazakhstan. The artistic look and architectural and planning solutions for new buildings are created with due regard for the natural and climatic, historical, cultural and social context, using new construction technologies and referring to the world experience of construction. This approach contributes to building an architectural environment which is mentally "native and friendly" for the local population, as well as modern, easy to understand and attractive for foreign tourists.

CONCLUSIONS

Thus, the analysis of Soviet and post-Soviet buildings in Kazakhstan reveals a picture of a gradual change in the creative paradigm from the romanticism of the 1970s to the monumentalism of the 1980s and then the avant-garde of the 2000s; it takes us it takes us from the Soviet international architecture to the post-Soviet understanding of regional identity.

The study performed has shown that the degree of transformation of the architecture in modern Kazakhstan is influenced by the following factors:

- the high-quality basic level of architecture of public buildings and structures as a legacy of the Soviet era, which reflected the local artistic and imagery specifics in accordance with the historical period;
- changes in social and economic conditions as a result of a change in the social and political realities, the collapse of the USSR, and Kazakhstan gaining independence in 1991;
- the governmental policy for establishing an international image of the country through building architectural brands: construction of a new capital city, holding international contests for designing the most significant buildings and engaging world-class architects, implementing advanced design and construction technologies;
- creative competition between Kazakhstani and foreign architectural experiences, rethinking the interpretation of looks and symbols of the traditional Kazakh architecture by foreigners; and
- adjusting form-making techniques according to world trends: extending compositional means towards the avant-gardism of the modern architecture of Kazakhstan.

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Received March 2020; accepted in revised form October 2021.

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Polugodišnje. - Drugo izdanje na drugom medijumu: Spatium (Online) = ISSN 2217-8066
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