

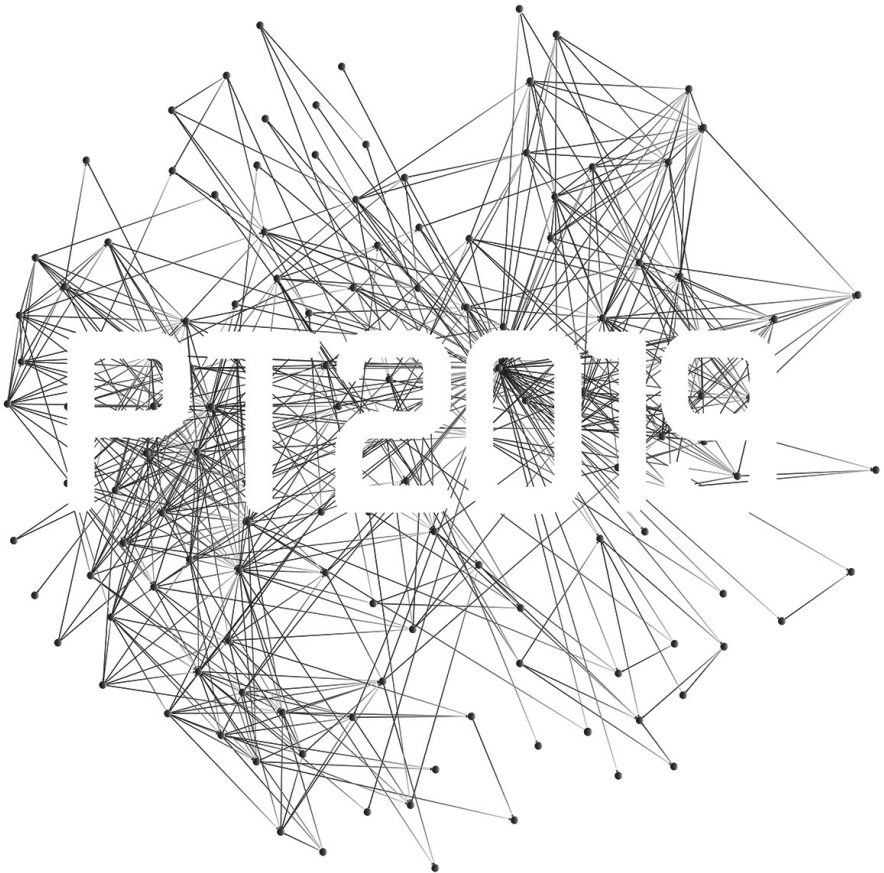
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6th INTERNATIONAL
ACADEMIC CONFERENCE ON
PLACES AND TECHNOLOGIES

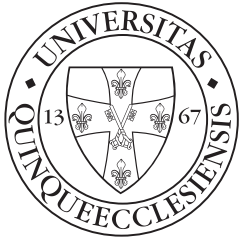
PLACES AND TECHNOLOGIES 2019

THE 6th INTERNATIONAL ACADEMIC CONFERENCE ON
PLACES AND TECHNOLOGIES

EDITORS: Dr Tamás Molnár, Dr Aleksandra Krstić-Furundžić, Dr Eva Vaništa Lazarević, Dr Aleksandra Djukić, Dr Gabriella Medvegy, Dr Bálint Bachmann, Dr Milena Vukmirović
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PLACES AND TECHNOLOGIES 2019

**KEEPING UP WITH TECHNOLOGIES TO TURN BUILT HERITAGE INTO
THE PLACES OF FUTURE GENERATIONS**

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SEARCHING FOR THE CODE OF NEW BELGRADE'S OPEN SPACE: CASE STUDY OF BLOCK 37

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ABSTRACT

New Belgrade was among the biggest building sites in Europe after World War II, and especially during the 1960s and the 1970s. Being located within the capital of former Yugoslavia, this entirely new part of the city also represented a statement in establishing a modern socialistic state. New Belgrade was planned and built in correspondence with the postulates of modernist urbanism and according to the new contemporary set of urban indicators, with an orthogonal matrix consisting of units called super-blocks, which became independent local communities to a certain extent. The continuity of the open spaces that are formed by the built structures within the super-blocks is one of the most interesting aspects of these blocks and this paper aims to highlight them as one of New Belgrade's grates qualities.

The main goal of this paper is to explore the structure of open space of these super-blocks. This will be done through the set of urban indicators such as: percentage of open space (green areas, sport and recreation areas, traffic areas, pedestrian paths, etc.), floor space index, lot coverage, etc. The paper will also examine the current threat of occupation by privatization of the open space of New Belgrade and the division of the super-block structure into smaller pieces.

Keywords: New Belgrade, urban indicators, open space

INTRODUCTION

After World War II the period of massive migrations of people from rural to urban settlements caused the development of many cities. This was an opportunity for the functional city concept (Mašić, 1965) to answer to this need with an idea of physical structures with a high density of inhabitants, but with the same amount of outdoor and indoor space area per inhabitant. While the indoor space provides the residents with their basic needs for sleeping, hygiene and

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eating, the outdoor space provides them with other basic needs such as recreation, but also sun, air and greenery. Today, we are aware that the topic of publicly accessible open space within residential urban structures also has an important social function on a global level (PPS, 2016; UN Habitat, 2015) because it supports the development of individual and collective ties to the everyday physical environment, within the patterns of beliefs, preferences, feelings, values, and goals that are shared through it (Manzo and Perkins, 2006).

The city of Belgrade has had a constant lack of housing stock since the end of World War II, and the Urban planning institute worked intensively in the field on overcoming this problem through the creation of the GUP in 1972 (Aničin, 1972). Because of that, New Belgrade was among the biggest building sites in Europe, and especially during the 1960s and the 1970s. In the 1961, a general Yugoslav competition was announced for the three neighbourhoods (blocks 33, 37 and 38) as well as a regional center (blocks 34 and 40) within the so called Third region of New Belgrade (Mišković, 1974). A detailed plan for these residential neighbourhoods was adopted in 1963 and its realization was lasted from 1966 to 1970. According to the regulatory plan for the area of the New Belgrade Municipality, the Third region was established between the system of the streets which are today called Tošin Bunar, Pariske Komune, Omladinskih brigada and Milutina Milankovića and it consists of eight residential blocks (1,3,4,33,37,38) and a regional center in between them. The regional center was planned to answer the need for building capacities such as administration, commercial activities, cultural and social life (Jakšić, 1971), but it was never developed.

Within the New Belgrade area now, there are fully formed business and shopping districts (Marić, Ninković and Manić, 2010; Jovanović, 2017). Unfortunately, we are witnessing this ongoing transformation and one of them is taking place in Milutina Milankovića street, which is one of the boundaries of our case study- Block 37. Anyway, the Third region is one of the most preserved areas of New Belgrade, generally unspoiled by new commercial activities (Jovanović and Djukanović, 2018). This particular research represents one of the extensions of the wider research about the Third region of New Belgrade (Jovanović, 2017; Jovanović and Stupar, 2017; Jovanović and Stupar, 2018; Jovanović and Djukanovic, 2018). The main aim is to explore if residential blocks within this system have the characteristics that could provide good quality of life in terms of publicly accessible open space. We are calling these characteristic the code, because they consider the chosen set of urban indicators which should provide good quality of life in terms of answering the need for sport and recreational activity, but also for sun, air and greenery.

Firstly, Belgrade's overall attitude towards open space will be examined through the most important planning documents at this moment – the Belgrade Master Plan (MP) from 2003 and 2016 and The General Regulatory plan for the City of Belgrade (GRP) from 2016. Through these official documents we will problematize the norm of outdoor space through urban indicators, such as: percentage of open space (green areas, sport and recreation areas and playgrounds), floor space index and lot coverage. Using Block 37 as a case study, through a comparative analysis of the information from the MP and GRP conclusions will be made considering this block's existing norms of outdoor space. Based on that we will see how the modern planning practice deals with defining the mentioned parameters and then discuss the results.

SEARCHING FOR THE CONTEMPORARY NORMS THAT DEFINE OPEN SPACES

Being a city shaped under the influence of different cultures and ideological systems, Belgrade's streets and public areas vary in size, shape, character and overall type, making a standardized set

of criteria for future development and reconstruction of the existing spaces somewhat difficult. In this paper we deal with the territory of New Belgrade that is unique when compared to other urban neighbourhoods due to its super-block structures that stand out within the city's urban milieu. Analysing the existing plans and official studies that treat the area of New Belgrade and Block 37 within it, we will, on one hand, determine if there is a professional consensus in shaping open spaces, while also offering a comprehensive parallel between them. The parameters deemed as relevant for the examination of open public spaces are the percentage of open space, floor space index and lot coverage, as well as other spatial indicators when available. As we will see, different plans treat this topic to a different extent, some of them not offering New Belgrade specific criteria.

Within the current planning system in Serbia open public spaces aren't generally treated as a coherent spatial entity, they are fragmented and determined by parameters unique to their specific usage, some of which indirectly shape the existing or proposed built frame. The plans in their current state do not recognize a general standard needed per resident of a housing block, giving a wider outline that ultimately determines their dimensions as well as spatial characteristics. The Belgrade Master Plan from 2016 generally recognizes that a detailed and comprehensive study of open public spaces is a needed tool that would help in utilizing this urban resource in future plans that would further the development of the capital city of Serbia (Urban Planning Institute of Belgrade, 2016). A study concerning public open spaces within the city's central zone of Stari Grad was done in 2009 (Urban Planning Institute of Belgrade, 2009). This study aimed not only to properly identify and categorize them by type, but it also tried to give a framework meant for furthering and developing the urban planning practice (Urban Planning Institute of Belgrade, 2009). Leaning on the then valid master plan and other documents, the study emphasizes the importance of creating norms and standards for planning and designing open public spaces. The study itself represents an important step and just the first phase in a process that is meant to individually deal with other urban zones of Belgrade in a similar manner. It is important to highlight that the study ultimately didn't produce any set of specific or general norms for shaping outdoor spaces.

Through Table 1 we organized the parameters found in the Master and General regulatory plans of Belgrade that have shaped the city and will contribute to shaping it in the future. Each of the shown parameters deals with the rules, recommendations, and restrictions that are applicable to the location of Block 37 and general rules for shaping open spaces throughout the city. In order to highlight that not all of these parameters that deal with open space differ from each other for the very different areas of the city and to showcase how little general norms there are for shaping open spaces, we organized the gathered criteria through four categories:

1. General parameters define rules and restrictions that apply primarily to new housing settlements in the general city region;
2. Open-block specific parameters define rules and restrictions that apply just to open-block structures within the city (as zonally defined by the plan) and no other parameters specific for the case study location are given through the plan;
3. Multifamily open-block specific parameters define rules and restrictions that apply to the open-block structures predominantly meant for multifamily housing within the city (as zonally defined by the plan) and no other parameters specific for the case study location are given through the plan;
4. Special parameters define rules specially defined for areas of New Belgrade that also concern the case study location of Block 37.

Table 1: An overview of the main parameters that determine the spatial characteristics of open public spaces

Name of the plan	Parameters that shape open public spaces
The Belgrade Master Plan 2021 (2003)	General parameters: <ul style="list-style-type: none"> - Primary school parcels with surfaces for physical activities, school garden and a parts reserved for the necessary expansion of the capacity of the school: 20-25 m²/per child / 2,15-2,7 m²/inh. within the gravitational field of 300-600m of walking distance Multifamily open-block specific parameters: <ul style="list-style-type: none"> - Maximum spatial occupancy per total parcel area: 30% - Percentage of green areas per total parcel area: 30% - 40% - Playgrounds (children ages 3-11) per total parcel area: 1m²/Inh. (min. 100-150 m²) - Minimal distance between housing units: 1h of the higher building - Percentage of green spaces per totalblock area: 30%
The Belgrade Master Plan (2016)	Open-block specific parameters: <ul style="list-style-type: none"> - Green areas in housing blocks are planned in accordance with the standard: 15–16 m²/inh.
The General regulatory plan for the City of Belgrade (2016)	General parameters: <ul style="list-style-type: none"> - 23m²/inh. of public green spaces (for recreation) - 300m minimal distance from housing unit/block - Playgrounds for children ages below 3 is 2m² per child / 0,15 m² per inhabitant - Playgrounds for children ages to 6 is 5m² per child / 0,5 m² per inhabitant - Sports courts should have an area of 5m² per block inhabitant - Sports - Primary school parcel area: 1,5-3,0 m²/inh. within the gravitational field of 300-600m of walking distance. Open-block specific parameters: <ul style="list-style-type: none"> - minimum 20m²/inh. of green spaces Multifamily open-block specific parameters: <ul style="list-style-type: none"> - Maximum allowed floor space index per block: 2.0 - Maximum allowed lot coverage per block: 50% - Minimal percentage of open and green spaces per building complex: 65% - Minimal percentage of spaces covered by greenery per building parcel: 30% - Maximal building height: Existing buildings Special parameters: <ul style="list-style-type: none"> - The space is considered a previously protected historical area. - It is forbidden to construct new permanent buildings. - Spaces for open green areas must have a minimum of 70% of the green areas must be covered with greenery, while a maximum of 30% can be covered with paving, playgrounds, sports courts, etc.

As we can see, each of the plans deals with open spaces a bit differently, where some parameters aren't specifically defined for spatially and contextually different city locations. When examining the current official planning documents, we can concur that the Belgrade Master Plan of 2016 defines specific standards concerning open green spaces, while other types of open public spaces aren't directly dealt with within the plan. Open green spaces in open-type housing blocks can be found in areas of the city such as New Belgrade and the plan defines them as organized green areas, usually parks, that are meant for relaxation, playgrounds, sports and recreation of the local community. According to the plan, these types of spaces within the open-blocks of the entire city are planned by the standard of 15-16 m²/inhabitant (Urban Planning

Institute of Belgrade, 2016a). The plan also prohibits new construction and major changes in existing open green spaces that would impact certain city areas such as New Belgrade, in a way that would endanger their existing characteristics that were identified by the plans as one of their exquisite qualities.

The General regulatory plan for the City of Belgrade from 2016 also deals mainly with defining the character of public green spaces. A general standard concerning the entirety of the city defines that new housing settlements should have a minimum of 23m²/inhabitant of public green spaces (such as parks, squares, forests, etc.) that must be accessible within a 300m radius of the dwelling space (urban block) (Urban Planning Institute of Belgrade, 2016b). When building new and reshaping existing spaces, there are specific parameters in place for spaces meant for playgrounds and sports courts. The plan defines the norm of 5m² per inhabitant of the urban block as the needed space for open sports courts, while the size of the playgrounds should range from 0,15m² to 0,5m² per inhabitant depending on the age of the children that the space is meant for (Urban Planning Institute of Belgrade, 2016b). While the aforementioned rules generally apply to the entirety of Belgrade, there are some rules specific for the analysed area of New Belgrade within the GRP for the City of Belgrade. Block 37 is recognized as a protected area of New Belgrade in the GRP due to its cultural and historical significance, where the construction of new buildings is prohibited. It is also stated that within these blocks existing green spaces generally must have at least 70% of their spatial coverage covered in greenery, while the other 30% can be used for artificial pathways, playgrounds, recreational areas and/or similar types of open spaces.

From this primary analysis, we can gather that there is no general consensus among planning experts when dealing with new and existing open public spaces within housing settlements. The rules sometimes seem confusing, very general and they lack needed criteria for generally and specifically shaping city blocks. Certain parameters defined by the number of inhabitants are given within the plans, but they generally deal with green spaces and open sports courts. Overall, when comparing the previous Belgrade Master Plan from 2003 and the current one, we can see a noticeable step forward in the current planning practice.

CASE STUDY: NEW BELGRADE, BLOCK 37

As the first step the main parameters relevant for the study and which best define the open spaces in Block 37 in its existing state were examined and they are: total area (approx. 174000m²); area without school, kindergarten and block's commercial center is approx. 150292 m²); number of inhabitants (approx. 7000 inh.); GDBA (approx. 189500m²); green spaces (Including pedestrian streets, playgrounds and sport terrains approx. 115000m²); areas covered by additional activities (playgrounds in total approx. 8400m²).

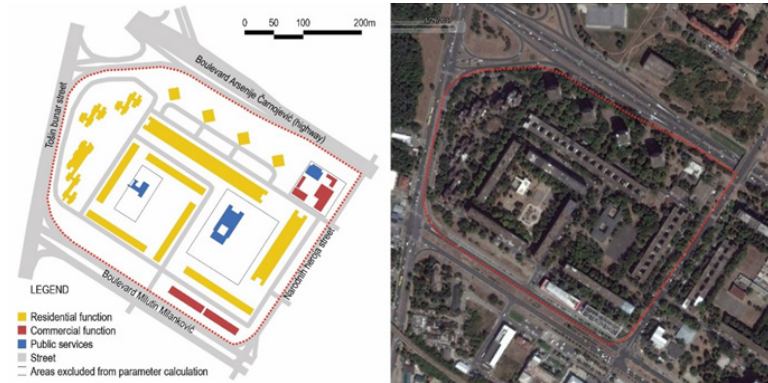


Figure 1: Structure of the open space within the Block 37

After this examination of the current spatial characteristics of the location (Figure 1), Table 2 was formed to showcase the comparative analysis between parameters from Table 1 and the current state in Block 37.

Table 2: Comparative analysis of the parameters of the plans and current situation within Block 37

Level	Parameters	Plans	Block 37
General	Public green spaces	23m ² /inh.	16 m ² /inh.
	Playgrounds for children ages below 3	2m ² per child / 0,15 m ² per inhabitant	In total 1,2 m ² /inh.
	Playgrounds for children ages to 6	5m ² per child / 0,5 m ² per inhabitant	
	Sports courts	5m ² per block inhabitant	0,14 m ² /inh. / 0,63 m ² /inh. (with school open courts)
	Primary school parcel area:	2,15-2,7 m ² /inh. (BMP 2003) 1,5-3,0 m ² /inh. (GRP)	1,9 m ² /inh.
Open-block specific	Green spaces	20m ² /inh.	16 m ² /inh.
	Green areas in housing blocks	15–16 m ² /inh.	16 m ² /inh.
Multifamily open-block specific	Floor space index	max. 2.0	1.3
	Lot coverage per block	max. 50%	21%
	Percentage of open and green spaces per building complex	min. 65%	79%
	Percentage of spaces covered by greenery per building parcel	min. 30%	> 30%
	The space as a previously protected historical area	Forbidden construction of new permanent buildings.	Permanent buildings were built in 2008.
	Spaces for open green areas	Min. 70% covered with greenery and max.30% covered with sports courts, paving, playgrounds, etc.	accomplished

It should be highlighted that some areas such as the school, kindergarten and commercial center were excluded from the overall approximation because they are fenced or with a huge percentage of commercial use. From Table 2 we can see that generally all the criteria are in accordance with the current planning practice, with two exceptions – a significantly lower percentage of space for sport courts and building in the protected area.

There are a few courts for sport within the parcels of the local school, but there is no local regulation for inhabitants of the block in terms of using the school's sport courts when children do not have classes. Even with that, we can concur that the area percentage meant for these activities is very low. The reason for this is the character of this type of urban structure, which should have had a regional center that is supposed to compensate for lack of these activities. We can conclude that the only problem in this case lies within the fact that the originally planned regional centre was never developed (Jovanović and Đukanović, 2018).

As previously mentioned, the location of Block 37 is recognised as a previously protected historical area of New Belgrade in the GRP for the City of Belgrade, where the construction of new buildings is prohibited. Nevertheless, two new business facilities were built on the edge of the block (Jovanović and Đukanović, 2018). These new commercial buildings have contributed to more traffic and cars in the block and the fact that they are set too close to the existing dwelling lowers the quality of living in the block.

DISCUSSION AND CONCLUSIONS

This paper is a part of a wider research concerning the treatment of open spaces in super blocks in the New Belgrade area and it represents just one glimpse into a very complex research topic. The fact that GRP for 2016 does not define precisely what belongs to artificial public spaces, opens the door for re-examining the potential of these not properly defined types of open spaces within future research, and by extending the existing practice. This research should be developed further by examining the parameters in the previous plans in order to check if open spaces were described and treated differently.

According to the comparative analysis made within this research, Block 37 still has enough existing resources and a chance to develop and to adapt to different (non-permanent) activities. The situation in the other 5 residential blocks within the Third region of New Belgrade is probably very similar, but it could also be examined using this methodology. Also, the fact is that there is still enough unused space within Block 34 for the regional center to be established would complement the insufficiency of existing sport and recreational activities.

Beside these positive conclusions, still a serious threat is starting to emerge along the Milutina Milankovića street, that has affected Block 37. When the plans are examined carefully, we can see "free lots" for building commercial buildings in the same regulation. Development of such content will also shrink the already very modest capacities of parking spaces. Also, the uncontrolled development can lead to the formation of segregated open spaces that would endanger the unique type of spatial resources which New Belgrade has to offer.

We can concur that not all of the aspects identified as crucial for the future development of New Belgrade's open spaces have been covered by the planning norms. This fact can be seen as a big issue since they can endanger the adequate functioning of the local communities living within these blocks. One of the ways of preserving open space of these blocks as a precious resource is to build up the capacity of the local community which will fight for the quality of life within the neighbourhood they are living in.

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