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Dean

Slaviša Trajković, PhD

Editor

Milan Tanić, PhD

Co-Editors

Milena Dinić Branković, PhD

Slaviša Kondić, PhD

Aleksandra Mirić, PhD

Vuk Milošević, PhD

Text formatting, prepress and cover

Milan Brzaković

Vojislav Nikolić

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MODERN TRANSFORMATIONS OF CITY RIVERFRONT - COMPARISON OF THE RIVERFRONTS OF BELGRADE AND ZAGREB

Slobodan Bulatović

*The University of Belgrade, Faculty of Architecture, Serbia
PhD Student, bulatovic-s@hotmail.com*

Aleksandra Đukić

*The University of Belgrade, Faculty of Architecture, Serbia
PhD., Full Professor, adjukic@afrodita.rcub.bg.ac.rs*

ABSTRACT

City riverfronts are parts of urban areas that have become increasingly interesting in space reconstruction and revitalization in the last few decades. This situation has occurred due to several different factors. The most important factor is undoubtedly the value of the land along the river and the possibility of forming high-quality spatial landscapes. In these parts of the city, in urban centres worldwide, attempts are being made to organise the entire life of the city. This research seeks to examine changes in the examples of the city riverfronts of Belgrade and Zagreb. These two cities are attractive for research because they were formed on the banks of the same river and have similar spatial-geographical characteristics. To research the mentioned changes in the paper, the spatial planning and urban documentation will be analyzed, focusing on the transformations of the riverfront of the two mentioned cities. It is important to emphasise that this paper seeks to examine the transformations in the last twenty years, i.e. in the 21st century. This research tries to summarise all the changes made to the city riverfronts and their effects on the spatial configuration of Belgrade and Zagreb. It also seeks to answer whether such space transformations are favourable or not, or what impact do they have on changing the broader image of the city. Based on the results, proposals and guidelines for future transformations of urban riverfronts will be given at the end of the paper.

Keywords: *Urban riverfronts; modern transformations; planning documentation; urban landscapes; Belgrade and Zagreb*

1. INTRODUCTION

The development of cities from the appearance of the first urban settlements until this day is conditioned by the close distance from water courses. For the population, the proximity of watercourses represented the possibility of supplying residential buildings with water, using that water to irrigate agricultural areas, and various other activities (Živaković-Kerže, 2008). This undoubtedly had a significant influence throughout history on the planning policies of the development of cities because the position of water courses and the terrain configuration dictated the further development of urban areas. Furthermore, the improvement of infrastructure systems intended for water supply and the problems caused by floods influenced the relocation of urban settlements to a certain distance from the river banks. As a result, the riverfront area received a different type of use and was used as an open public space or as an area for food production, and very often as an area for transporting various goods and services. As stated above, it can be concluded that water surfaces next to them have always represented very significant elements of urban space (Khalifa et al., 2021). On the one hand, citizens and many city administrations worldwide perceived these spaces and still perceive them today as public. By contrast, due to the value of the land along the river courses, as well as the significant progress in the field of infrastructural development, the owners of private capital, as well as a large number of actors in planning, consider these areas extremely important for further urban and economic development.

Differences in the relationship of the population, but also of the actors in the planning processes towards the areas along water courses, are visible all over the world. Therefore, these differences can be seen by comparing the planning policies of cities developed on the same river course and with similar spatial and geographical characteristics. The aim of this work is precisely through a comparative analysis of planning documents to investigate how cities such as Zagreb and Belgrade treat river banks. In other words, this paper attempts to research the differences between the two mentioned cities, that is, their planning processes during the past two decades. Even more, it is essential to emphasise that the "Belgrade on the Water" project is crucial for this research. At the same time, the Zagreb coast is analyzed following the conclusions given in the spatial and urban plan. The results try to figure out the changes that took place during the mentioned period on the cities' riverfront and how these changes affected their spatial configuration. Most importantly, based on the observed results, we attempt to answer whether these changes are good, that is, what impact do they have on the broader picture of the mentioned cities and their urban development. The conclusions of the work, in addition to a critical review of the research results, will contain specific recommendations and guidelines for the future transformations of river banks.

2. BACKGROUND RESEARCH

City shores, as mentioned, have always been important for human settlements. As such, they were used in various ways. Today, in the period of increase in the number of inhabitants in the city, the riverfront areas are becoming more critical in the urban structure (Attia et al., 2018). Many cities use these areas as open public spaces intended for a large number of residents belonging to different demographic categories. In recent decades, many European and North American cities have been turning more and more city riverfronts into open public spaces in an effort to bring city life down to the riverfront (Mann, 1988). This approach to spatial planning is undoubtedly based on scientific works. In his work *Urban Open Spaces* (1987), Mark Francis includes the city's riverfront that is not intended for living in the category of open public spaces. In this way, the city's shores become available to everyone with the possibility of using them for various events, resulting in a better connection of citizens with the space and better relations in the social community. In addition, in this way, city shores become part of the network of open public spaces in the urban structure, allowing for further adequate city development near these spaces. The German city of Frankfurt is one of the cities where the purpose of the city's riverfront was changed for a better quality of life and connections between people. Namely, in this city, before and during the Covid pandemic, the use of part of the city's riverfront was repurposed, and access to traffic was prohibited from promoting green mobility and improving the quality of life (Pandit et al., 2021). All of the above indicates that cities around the world use their riverfronts to preserve green areas, as well as improve the quality of life, and of course also provide the population with the opportunity to complete their free time or perform recreational activities not far from their place of residence (Fainstein, 2010). Generally speaking, when it comes to urban development along rivers, specific criteria must be met to endanger the city's overall development and the social community. This primarily refers to examining the planned project's direct and indirect impacts on the area's ecological aspect. It is crucial to examine the various risks this project may cause to other parts of the city. This undoubtedly refers to possible natural disasters such as floods or the occurrence of landslides due to water retention (Follmann, 2015).

Nevertheless, the use of city shores in the manner described in the previous paragraph is perfect both for the urban structure and for the inhabitants, many cities in the planning process still decide on a different way of coasting. As previously mentioned in the paper, the number of city inhabitants has been increasing rapidly in recent years, and city authorities are facing the problems of urban space expansion and renewal. In this regard, many cities along rivers, lakes and other bodies of water have decided to develop new settlements precisely in the riverfront zones. With regards to this, large cities take advantage of the inherited infrastructure, such as city ports, etc., and reconstruct it to develop an entirely new city centre in those areas. One such city is Hamburg. Namely, in this city, the location of the old city port was used to create a new centre with business and residential facilities for thousands of people (Krüger, 2009). This project called *HafenCity* has completely changed and even improved the city of Hamburg in terms of quality of life and broadened the job market, as well as quality open public spaces.

However, there are many examples of cities that were guided by the same or similar principles in the planning process to improve their river banks and turn them into new residential and business settlements. On the other hand, this did not proceed according to the intended concept. For example, at the beginning of the third millennium, the city of Edinburgh tried to regenerate the former port of Granton with the help of the

Waterfront Edinburgh project. Still, that project failed at a certain point (Kallin, 2021). What was shown through the idea of actors in planning the new waterfront in Edinburgh is that despite the potential that a particular area has, too much desire for quick financial success can lead to the project's failure.

Riverfront zones in cities, therefore, from historical settlements to the present day, have a crucial role. In recent years, even decades, the regeneration and reconstruction of these spaces in cities have been trying to raise the residents' quality of life. Of course, this can result in the development of new public spaces and residential areas. In these processes, planning documents have the most significant importance, that is, the actors who participate in creating these documents. In the capitals of the Republic of Serbia and the Republic of Croatia, Belgrade and Zagreb, in the last two decades, a large number of plans and proposals were made that explicitly dealt with the city's riverfronts. Those plans treated the banks of the Sava River in different ways and the existing built-up areas in the riverfront zones. Due to the significant similarities between the two mentioned cities in terms of spatial planning and spatial-geographical characteristics, it is exciting to compare the application of planning documents adopted in the last two decades. Through these comparisons, one can undoubtedly conclude how certain planning decisions affect the spatial configuration and the broader picture of the city, but also the quality of life of the citizens.

In connection with what was aforesaid, this paper aims to point out the importance of the city's riverfront in terms of the inhabitants' quality of life and the urban structure. Based on the results obtained through a comparative analysis of the planning documents of Belgrade and Zagreb, an attempt is made to find an answer as to whether the city's riverfronts are the new drivers of urban regeneration or whether they are spaces that should be intended for recreation and rest for citizens. As mentioned in the introductory part of the paper, the concluding part of the research will contain recommendations and guidelines for future planning and development of riverfront areas in large cities.

3. METHODOLOGY AND MATERIALS

High-quality and effective spatial planning can undoubtedly be considered crucial in ensuring the progress of urban areas in which efforts are made to ensure a high-quality standard of living and sustainable urban development (Baffoe et al., 2022). This is because planning a specific area should improve the quality of life, which implies respect for the citizens' needs and improves spatial and social aspects that lead to better socio-economic development.

Considering the mentioned importance of the planning documentation, this paper, through the method of comparative analysis of this type of documentation of Belgrade and Zagreb, tries to investigate and compare the changes in the spatial configuration of the mentioned cities, which are the result of the adopted planning documents. Through the mentioned method, answers can be obtained adequately to the questions of how actors in the planning process treat transformations of city amenities and what contribution this process has in terms of the socio-economic aspects of the city. The two mentioned cities were chosen for this research for several reasons. Namely, these cities have certain similarities. Belgrade and Zagreb are the capitals of the countries in which they are located, and they were also developed on the banks of the same Sava river. Also, their similarities are reflected in the fact that, in the period of their most excellent development, both cities belonged to the same country, Yugoslavia. In this respect, they were developed according to the same urban principles. Indeed, based on this fact, these cities still have very similar urban planning systems today.

The spatial and urban plans of the above-mentioned cities are going to be analyzed in this paper. Also, plans that include smaller, isolated parts of these two cities will be included, but whose planning solutions are directly focused on the city's riverfronts. As already mentioned in the introductory piece of the paper, the plans created in the previous twenty years will be analyzed. Accordingly, the following plans will be analyzed for the area of the city of Belgrade:

- Changes and additions regional spatial plan of the administrative area of the city of Belgrade, adopted in 2011 and created to review the planning solutions defined in the primary document Regional spatial plan of the city's administrative area of Belgrade, adopted in 2004.
- Spatial plan of the area of special purpose for the development of part of the coast of the city of Belgrade – the area of the banks of the Sava River for the "Belgrade on the Water" project was made following the decision made by the Government of the Republic of Serbia at the session held in June 2014.

- The General Plan of Belgrade 2021 was adopted in 2003. This planning document was initially valid until 2021. Still, in the period after 2003, changes and additions were made to the basic plan, and in 2016, the General Urban Plan of Belgrade was adopted based on this document.

The plans that are important for this research and that relate to the development of the city of Zagreb are:

- Zagreb 2000+ New urban strategy: The general urban plan of Zagreb is a planning document adopted in 2000 and was based on several other plans and concepts from the 20th century. In 2016, amendments to this planning document were adopted.
- The urban development plan of Jankomir-Prisavišće, was adopted in 2008 to define the essential purpose and way of using the space defined by the plan.
- The document Amendments to the General Urban Plan of the City of Zagreb in 2017, which was adopted in 2017, was created based on the General Urban Plan of the City of Zagreb adopted in 2007.

4. RESULTS

Spatial planning in order to create a high-quality and interactive urban structure is the first step toward contributing to the spatial transformation and improvement of the socio-economic conditions of the place (Assche et al., 2020). That is why the documents created in the planning process are of utmost importance in researching and evaluating planning practices and their solutions. These documents are certainly one of the primary means for comparing the situation during and after the implementation of ideas and ideas of actors in the planning process. In this part of the work, a comparative analysis of the planning documents of the cities of Belgrade and Zagreb will be performed. In addition, those documents that treat the riverfront transformation in the mentioned cities will be analyzed.

4.1. The riverfronts of the cities Belgrade and Zagreb

Many cities treat city shorelines in different ways. In the 21st century, great amount of attention is being paid to the potential of the city's riverfronts, and precisely because of this, these areas are characterised as the most significant in the planning processes. Such a case is also noticeable in the two capital cities of the Balkan states, the Republic of Serbia and the Republic of Croatia. Belgrade as the capital of the Republic of Serbia and Zagreb as the capital of the Republic of Croatia are urban areas whose built-up areas are increasing yearly. For this reason, city authorities and various private investors strive to find new areas in the central parts of cities or their immediate vicinity, which can become new places to revitalise urban space. In these cities, in recent decades, increasing attention has been focused on the city's riverfronts, which were intended for certain activities or represented undeveloped accessible areas during the earlier periods of the city's history.

These two cities were fascinating because they belonged to the same state thirty years ago. Accordingly, they mostly had the same or similar principles in the planning process, conditioned by legislation and similar planning schools. This certainly impacted today's planning practice and decision-making aimed at the arrangement of urban space. Of course, the similarities of the riverfronts of these cities are also visible in the fact that they were formed on the same river Sava and had similar relief characteristics.

However, these two cities have specific differences in planning solutions related to riverfront development. Namely, in the third millennium in Belgrade, the realisation of an urban megaproject called "Belgrade Waterfront" was started, which greatly influenced the planning boom in the city itself and the country, at least when it comes to legal regulations (Grubbauer et al., 2018). On the other hand, Zagreb's city has strived to adequately arrange the riverfront through various urban competitions and plans for many years and decades. Still, there was great cohesion between the ideas that the riverfront should become a new residential area or that it should remain an open public area mainly intended for sports activities (Matković et al., 2012). Figure 1 shows the area where the development of "Belgrade Waterfront" megaproject was planned and started, while Figure 2 shows the area of the Zagreb waterfront.



Figure 1: Belgrade Waterfront location (Source: Bing, 2015)



Figure 2: Zagreb Waterfront (Source: www.crorivers.com)

4.2. Comparative analysis of planning documents of Belgrade and Zagreb

As already mentioned in the paper, in the XXI century, actors in the planning process paid much attention to the coasts of Belgrade and Zagreb for twenty years. In this regard, in many planning documents, it is possible to find proposals, guidelines, ideas and visions for the arrangement and construction of the coastlines mentioned above. In this work, documents will be singled out in which the city's coastline is defined concretely, i.e. documents that determine the future use of these areas.

Belgrade

The city of Belgrade, i.e. the city authorities and many participants in the planning process in recent years, have initiated arranging the Sava coast and forming an entirely new residential and business settlement. This settlement, named "Belgrade Waterfront", should in the future represent an entirely new centre of the city with clearly expressed characteristics of socio-economic development. That project, of course, received a lot of negative and positive criticism over time, but despite that, it is being implemented to a large extent. In addition to the mentioned part of the coast, the city of Belgrade has many more landscaped features on the riverfronts, but this project is one of those that has a massive impact on the broader picture of the city.

Table 1: Planning documentation for the Belgrade riverfront

<i>Planning documentation</i>	<i>Year</i>
<i>The general plan of Belgrade 2021</i>	<i>2003</i>
<i>Changes and additions regional spatial plan of the administrative area of the city of Belgrade</i>	<i>2011</i>
<i>Spatial plan of the area of special purpose for the development of part of the coast of the city of Belgrade - area the banks of the Sava River for the "Belgrade on the Water" project</i>	<i>2014</i>

The city of Belgrade, as mentioned, has a very long coastline that is very diversely arranged. Sports and recreational facilities, green areas, economic activities, etc., are represented on Belgrade's shores. However, in this research, the focus is on that part of the Belgrade coast, which is trying to be given a completely new image and role in the city's further development. That part of the Belgrade coast became the subject of numerous types of research. It is a part of the coast on the right bank of the Sava where the project "Belgrade on the Water" is implemented. Table 1 lists three planning documents based on which a conclusion can be drawn as to how this part of the coast was treated. More precisely, based on these plans, it is possible to determine what this coast looked like before the project implementation and what results are expected after the performance of the planning documentation. Accordingly, it is possible to assume what impact the new imagined part of the city will have on the broader picture of the city and the socio-economic aspect.

In the Regional Plan of the Administrative Area of the City of Belgrade from 2011, the part of the observed coastline characterised as the area of the Sava Amphitheatre is defined as an area that must be adapted to the urban contents that should be built in that zone, but in such a way that the entire coast is opened for unhindered access to water. This plan envisages the formation of new complex business and commercial zones in Belgrade's mentioned area. The spatial plan of the area of the particular purpose for the development of the part of the waterfront of the city of Belgrade - the area along the Sava River for the project "Belgrade on the water" from 2014 fully defines the site where the modern transformation of the riverfront is planned. In the same planning document, green public areas, as well as cultural and historical heritage that exist in a defined area, are singled out. The plan emphasises the importance of existing green public areas in terms of air quality and temperature regulation and as spaces intended for citizens' meetings, communication, enjoyment, socialising and recreational activities. During the preparation of the planning document, many different cultural and historical heritage objects were listed. Certain buildings on the site date from the end of the 19th century, while a large number of them were inherited from the 20th century. It could be said, therefore, that this area was affluent in public areas and heritage objects before the transformation, according to the data from the plan.

On the other hand, the main goals of this plan are the affirmation of the tourism of the city of Belgrade and based on the arrangement of the coasts, the formation of integral ambient units based on cultural and historical heritage, and the improvement of the tourist offer in the function of tourism by creating areas for shopping, and the construction of residential and business facilities with the aim making an offer of a more significant number of residential and business spaces. The General Plan of Belgrade 2021 from 2003 also supports the idea of modern transformation of the coast with the aim of its rehabilitation and activation. This plan also characterises the coastal area being transformed as one of the locations for constructing cultural facilities of the highest national importance.

Based on the above plans, it is evident that the city authorities of the city of Belgrade and actors in the planning process have recognized part of the Belgrade coast as an area that can become a new tourist and economic centre of the city. Without a doubt, it can be said that this kind of transformation of the space, in which multi-storey buildings and shopping centres will dominate, has a direct impact on the broader picture of the city. An increase in the number of users of this area may lead to an overload of the city's infrastructure systems. Indeed, the concentration of new multi-storey buildings will undoubtedly reflect the complete urban image of the city of Belgrade.

Zagreb

In contrast to the Belgrade riverfront in the city of Zagreb, the city authorities have repeatedly tried to organise the riverfront during the last few decades. In connection with this, various tenders were announced, and planning documents were drawn up. However, Zagreb's coastline remained mainly intended for sports and recreational activities without significant changes in the construction of new residential and business facilities or activating the city's tourist offer in the coastal zone.

Table 2: Planning documentation for the Zagreb riverfront

<i>Plans</i>	<i>Year</i>
<i>Zagreb 2000+ New urban strategy, Proposal of the new General Urban Planning of the city plan of Zagreb</i>	<i>2000</i>
<i>Urban development plan of Jankomir-Prisavišće</i>	<i>2008</i>
<i>Amendments to the General Urban Plan of the City of Zagreb in 2017</i>	<i>2017</i>

Developing the Zagreb riverfront has always been an exciting challenge for planners and city authorities. For a whole century, the actors in the Zagreb planning process have been trying to find an adequate solution and model according to which they would arrange the city's riverfront so that it becomes the new driving centre of Zagreb's development. As in the case of the analysis of the transformation of the coast of Belgrade, three essential documents have been singled out in this part of the work, through which the vision of the future development of the Sava coast can be seen most adequately. Indeed, it is critical to emphasise that many documents and initiatives treat this part of the urban structure in specific ways. Table 2 shows the three

analyzed planning documents on the basis of which conclusions are drawn about the development of the Zagreb waterfront.

As early as the beginning of the third millennium, the city of Zagreb tried to solve the undefined status of the Sava coast in a way to determine its clear purpose in further urban development. In the spatial planning document from 2000, the area of the city's coastline is defined as a "skipped" area in the planning process with exceptional potential. In this document, the area along the Sava River is mainly characterised as an area intended to develop infrastructure systems to improve the city's water supply, sewerage, and traffic network and as a sports and recreational area. Although there is a great desire of the city authorities for complete development of this area, there are no concrete solutions, also, in the Jankomir-Prisavišće urban development document from 2008. In addition to numerous concrete solutions and projects, there are no concrete solutions for transforming the Sava coast. To the greatest extent, the development of new public facilities in the immediate surroundings and the preservation of green areas to further promote the greenery of the city of Zagreb are sought. The amendments and additions to the General Urban Plan of the City of Zagreb from 2017 clearly define the visions for the further development of the City of Zagreb and, thus, the banks of the Sava River as part of the urban area. This plan proposes preserving wide undeveloped spaces between the built structures of the settlement. Also, it strives to develop and improve the cultural and tourist offer and promote sports and recreational activities while preserving the green areas along the Sava River.

Based on the above, a clear difference can be seen regarding the treatment of city shores in the planning documents of Belgrade and Zagreb. However, it is essential to emphasise that these two cities, although they are the largest cities in the states, differ in terms of population and built-up near river banks. Indeed, there is a noticeable difference in terms of the relationship to the riverbanks, i.e. their use. While the city of Belgrade in the 21st century is trying to move the city and tourist life to the coast, the city of Zagreb, on the other hand, is trying to preserve the rich green spaces along the river and improve them, thus making it a detractor of development in another way. Nevertheless, it is essential to emphasise that during the last time, the idea of transforming the city's shores was present in Zagreb, and still is exactly the way it is happening in Belgrade.

5. DISCUSSION AND CONCLUSIONS

City riverfronts are parts of the urban structure that ennoble cities and make the city space much more diverse. Richard Marshall, in his book *Waterfronts in Post-Industrial Cities* (2004), states that urban riverfronts are extremely important in cities because they improve anaemia in their immediate environment and the entire city. It is crucial to emphasise that throughout the riverfront's history, significant changes have taken place. Thus these spaces in many cities have become places for people to gather and connect, from being a pure business zone. Furthermore, it is undoubtedly vital to emphasise that these areas have become important economic and development hubs of cities. As mentioned in the paper, many cities in recent decades have decided to develop new settlements in these areas to initiate a major reconstruction of the city and, at the same time, provide housing for new city residents. All of this directly affects the city's image's breadth and the urban structure's quality.

This paper shows that planning documents play an extremely significant, if not the most important, role in developing a project from idea to realisation. Based on these documents, it is possible to evaluate the needs for the completion of a specific idea, that is, a project, and it is possible to determine how that project affected the entire city. Cities of Belgrade and Zagreb, due to their history, population, and importance as administrative centres must adapt their urban structure to the needs of the wider population. Precisely because of this, the actors in the planning process in both cities, through concrete examples of the transformation of city shores, clearly convey the idea of exploiting the area's tourist potential. It is clear that tourism represents one of the essential tools in development, and it must undoubtedly be included in the plans of the mentioned cities. However, as seen in the paper, in terms of coastal planning, there is a big difference between the two analyzed cities. Belgrade is undoubtedly striving to transform its riverfront in a way that has been very popular in recent decades all over the world, as seen in the already mentioned city of Hamburg. Namely, through the "Belgrade on the Water" project, the tourist offer in this city is completely changing, as well as the broader picture of the city, and all of the above have a significant impact on the socio-economic aspects of this city. On the other hand, in the city of Zagreb, the planners are trying to preserve the green area and sports activities along the Sava river, thus aligning themselves with the cities that want to promote the banks as open public spaces to everyone. Nevertheless, following the trends in European and world cities, building new settlements along the river and creating a unique cultural and touristic city offer is being promoted from time to time in Zagreb.

Following what was stated in the paper, the basic conclusion is that the modern transformations of the city coasts are precisely those in which the purpose of the city coast, as well as its appearance, is completely changed. In this transformation, without a doubt, the overall image of the city also changes, and thus also many other spatial and social aspects. This change can be a ban on the use of traffic in a specific area and the use of the coast for open public spaces. Still, in the 21st century, it is a pervasive case that cities around the world tend to reconstruct the coastal area to build new housing - business premises and make the coast a development centre of the city in this way. For such transformations to take place with as much benefit as possible for all users of the space and as minor damage as possible to the cityscape, it is necessary:

- Involve citizens in decision-making processes and, through public insights, clearly determine their needs and desires from a specific space;
- Conduct analyses and studies to determine how the transformation of the city coast will affect the city and its functioning;
- During the transformation process, it is mandatory to try to preserve the spatial potentials in the form of green areas as much as possible, as well as the cultural and historical riches of the area.

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