



ИСТРАЖИВАЊЕ ОСОБЕНОСТИ ПРИОБАЉА БАЊА ЛУКЕ У ЦИЉУ ДЕФИНИСАЊА СМЈЕРНИЦА БУДУЋЕГ РАЗВОЈА

Malina Čvoro, malinacvoro.arhitekta@gmail.com

University of Banja Luka, Faculty of Architecture, Civil Engineering and Geodesy

Резиме:

У овом раду истраживан је феномен односа ријеке као природног елемента и урбане средине као људске творевине. Њихов међусобни однос је сагледан кроз теме које се тичу просторно - програмских, перцептивних, естетских и културних потенцијала који у великој мјери одређују идентитет мјеста. Анализиран и приказан је примјер града Бања Луке који је посматран кроз више критеријума: позиционирање урбане структуре у односу на ријеку, морфолошке и топографске карактеристике, развијеност физичке структуре у приобаљу, приступачност, дистрибуција садржаја и наслеђе. У раду су приказани и резултати спроведеног анкетног испитивања корисника простора о идентитету, значају и начину коришћења простора приобаља у нашој средини. У циљу формулисања одређених препорука за унапређење простора приобаља, дефинисане су вриједности које ови специфични урбани простори могу да садрже у себи.

Кључне ријечи: приобаље, урбана структура, приступачност и идентитет

THE STUDY OF PARTICULARITY OF BANJA LUKA WATERFRONT IN VIEW OF DEFINING THE COURSE OF ITS FUTURE DEVELOPMENT

Abstract:

This Study examines the phenomenon of the relationship between the river as a natural element and the urban environment as a human creation. Their mutual relationship is observed through the topics which are related to the spatial - programmatic, perceptual, aesthetic and cultural potentials that largely determine the identity of the place. The example of the city of Banja Luka has been analyzed and presented from the point of view of several criteria: positioning of the urban structure with relation to the river, morphological and topographic characteristics, development level of the physical structure of the waterfront, accessibility, distribution of contents and heritage. The Study gives an overview of the results of the survey conducted among the users of the space with regard to the identity, importance and the way of using the waterfront area. The values which those specific urban areas may contain have been identified in order to formulate certain recommendations intended to improve the waterfront.

Key words: waterfront, urban structure, accessibility and identity.

1. INTRODUCTION

The Study focuses on the established relations between the city and the river. The main morphological characteristics of cities which are positioned next to the water flow or water surface are determined by the relation of the urban structure toward the water and their identity is very often the result of specific values realized in a single space of the waterfront and the aquatoria. [1] The waterfront is specific with relation to other town areas and characterized by a dominant linear shape and longitudinal character of the space which connects various parts of the city. The influence of the water flow on formation of the city pattern is evident but certainly not the only one, there are topography, climate, socio-economic and cultural influences, demography, etc.

In this research, the term coastal area refers to the city coast, which is located in the urban environment. Some of the definitions connect this part of the city to its nature of expansion. Trancik [2] categorizes it as a linear system of open spaces that extend through the city connecting one place to another. According to Hoyle [3], this is a specific space in a city that is very linear, but also very limited, is not elastic and contains much in it. There are coastal definitions that are related only to its port function and mark it as an area of many activities. Perhaps one of the more comprehensive definitions of the urban coastline is that it is a space with a watery edge in cities of all sizes. Water can be a river, lake, ocean, bay and / or canal. The coastline includes everything from a wildlife habitat to a container in the port and a wide range of activities that are contained in a randomly or uniquely built structure, with more or less owners and participants. This area may also include buildings that are not directly on the water, but are visually, historically or within a wider context. [4]

2. ANALYSIS OF BANJA LUKA WATERFRONT

Research of the Banja Luka waterfront was conducted in order to establish the possibility of upgrading the waterfront as the holder of the identity of the city. Identity has been seen through various levels: one refers to the particularity of its physical setting through the natural and the built parts and the other to the level of activities which take place at the waterfront. The stated particularities are considered at the same time as only possible reading simultaneously the special features and character of the area.

Therefore, within the paper, the waterfront of Banja Luka has been singled out as a separate case study which eventually leads to drawing of many conclusions which refer to the waterfront. Additional analysis of the relevance and the way of space utilization was carried out through the anonymous survey of the users of the waterfront on the spot in several places in the Republic of Srpska: Banja Luka, Gradiska, Prijedor, Novi Grad, Zvornik, Trebinje and Derventa. Comparative analysis of the results of the surveys conducted was used to draw conclusions about the current situation and specific relation of the urban tissue up to the water flow.

2.1. PARTICULARITIES OF BANJA LUKA WATERFRONT

The city and the territory on which it stands are not two separate units but complementary parts of one single structure. Whether the settlement followed the natural conditions related to the configuration of the soil or whether the built structures were in contradiction with the morphology of the terrain, their relations generate the main characteristics of the

urban space. Visual identity of the city is determined by its topography as the natural element and physiognomy as the characteristic of the constructed environment. Topography as the natural element has big influence on the visual identity of the city. "The City personality, its identity and the main formative features are born out of this seeming conflict between the nature and the physical, constructed forms of the city." [5]

2.1.1. Natural conditions of the waterfront

The City of Banja Luka and its entire territory is situated in the structural basin of the river of Vrbas. Vrbas river as the right tributary of the Sava river drains the central part of the north slopes of Dinaric mountain massif and generally flows in the direction from the south to the north. Its river banks are mostly steep in the part from the village of Karanovac to the mouth of Vrbanja River into the Vrbas and further to the north. Being the natural flow, the river makes characteristic meanders that create typical zones in each of the stated parts. Urban area of the city of Banja Luka was historically developed in the Vrbas canyon, i.e. in the Neogene basin of the river from the area of Novoselija to Zaluzani. The river of Vrbas, upstream and downstream from the urban area of Banja Luka has always been important natural resource with all its characteristics and has always been the backbone of life. Natural wealth of the river and its waterfront as a resource had never been sufficiently utilized and sometimes even devastated. / Karanovac, the mouth of Suturlija, etc. / Particularity of the river are thermal hot springs of Srpske Toplice spa concentrated on the right bank of the Vrbas river in close vicinity of the river. Those are unique phenomena in the area of entire urban waterfront what makes them the facilities of geological heritage of national importance. Those springs are used unreasonably and are not adequately organized.

Negative impact on the Vrbas River is reflected by the pollution of water with leachate waters whereas sanitary leachate waters of feces type have more dominant effect than pollution with industrial leachate waters. Beside letting in the leachate waters of various origin directly into the river, solid waste of different composition is illicitly disposed into the water. The sewage system partly covers the urban area whereas all utility and industrial leachate waters flow into the Vrbas River. In the past period / the last 15 years / a leachate water treatment facility was not built and there is no central system for treatment of leachate waters. [6]

2.1.2. Historical background

Favorable geographic position and vicinity of the river and the natural resources have led to formation of first settlements on the territory of the city of Banja Luka in the prehistorical times and there are archeological artefacts to support that. Written documents mention the name of the city of Banja Luka for the first time in 1494 in the Charter of the Hungarian King Vladislav II Jagelovic which was issued in Budim in Latin language. During the third decade of the 16th century when it fell under the Turkish rule, Banja Luka was a military fortress with civilian suburbs on both banks of the Vrbas. Since then the city has developed on the principles of oriental community and most intensively during the reign of Ferhat - Pasha Sokolovic as the center of the Pashalik from 1573 to 1639. At that time there were two centers, Upper Seher and Lower Seher which existed on both banks of the Vrbas River.

Cartography documents dating from the 18th century offer pretty clear picture about the urban morphology of the then oriental Banja Luka. "Overview of traffic communications undoubtedly show the dominant role of the longitudinal direction which follows the flow

of the Vrbas River and which was inherited from the Roman times in the course of urbanization. This communication direction in the oriental times and in previous eras represented the backbone which was connected with construction thus creating a linear scheme around which separate parts were distributed." [7] Banja Luka was developed as the administrative, political and cultural center of the area of Bosanska Krajina. In the middle of the 19th century the city had more than 10,000 inhabitants and was the third largest city in the Bosnian Pashalik. Other traffic directions were crucially affected by the position of the Kastel fortress which is located between the Vrbas river and its tributary of Crkvena. The biggest cross communication runs through the fortress itself over the fortress bridge connecting the Carsija near the Ferhad-Pasha mosque with Small Carsija on the right bank of the Vrbas river.



Photo1/ Banja Luka, the Map of the Kastel Fortress at the beginning of the 20th century and geodetic map of the city from 1884 with Big and Small Carsija /Source: <https://www.google.ba/search?q=wagner+debes+u+Husedzinovic,+S.,+Dokumenti+opstanka>

Travel writers, mostly foreigners who stayed in Bosnia, in Herzegovina and the surrounding areas in the second half of the 19th century observed that the river of Crkvena marked the border between the oriental and the European part of the city. [8] Throughout the 19th century Banja Luka has transformed upon the model of cities of the Central Europe. "The looks of Banja Luka is very interesting. I have not seen a longer or a narrower city anywhere in the world. A line of houses and country cottages stretch along the both banks of the Vrbas river at least six versts. Very often the whole city is encompassed by the width of one street... In Banja Luka there is also an old fortress which is splashed by the waters of the Vrbas river from all sides." [9] Just before the end of the Turkish rule, in 1872 - 1873 an important effort was made which affected the future character of the urban character of Banja Luka. That was construction of the section of railway line Dobrljin - Banja Luka, designed as the part of the future Ottoman Trans-Balkan railways.

With the beginning of Austro-Hungarian rule in 1879, Banja Luka became the center of the county and the area, corresponding institutions have been formed and built and the city center has intensively developed on the left bank of the Crkvena river. Planned elements of the regulations are omnipresent, geometrically regular blocks and wide traffic lines have been built. The oldest lines of trees in the center of the town date back to the Austro-Hungarian administration. [10]

The city center as we know it today was formed during the Vrbas Banate with the arrival of first Ban (the Duke), Svetislav Milosavljevic after 1929. Thanks to him, in between the two world wars, the City got representative facilities which are today the most important holders of the urban identity of the City: the City Hall and the Ban's Palace and in between them the Saint Trinity Church at the Square of the Serbian Leaders, the Hipotekarna Bank and Petar Kocic Park.

2.1.3. The Analysis of the waterfront from the aspect of flood protection

Upstream from Banja Luka two hydro power plants Jajce II and Bocac were built which dictate the water flow of Vrbas River through the city so that daily oscillations of the water level are very high. Bocac accumulation has very important role in transformation of the flood waves and active flood defense of the city of Banja Luka. Minimal levels of water flow are typical for later summer and early autumn months.

Character of the basin of the Vrbas river on the city territory is divided on the basis of its main characteristics. Since its length is approximately 26 kilometers in the city area and taking into account the spatial characteristics, density of population, the purpose of the areas and characteristics of the terrain, three main zones have been established:

- The South Zone which includes the zone of the river flow from the village of Karanovac to Srpske Toplice has the banks deeply cut and in this part there are no 100- year floods. /Photo 2a/
- The Center Zone which includes the river flow from Srpske Toplice to the mouth of the Vrbanja river and the left and the right bank differ by its profile and composition and here also there is no a 100-year flood. /Photo 2b/
- The North Zone which includes the zone of the river from from the mouth of Vrbanja river to the borderline with Laktasi municipality, the banks of the Vrbas river are lower and the river assuems the chatacetr of the inland river. /Photo 2c/



Photo 2 Banja Luka, spatial units: a. The South Zone, b. The Centre Zone, v. The North Zone / Source: attachment of the author /

It is a relevant observation that Vrbas River does not flood its basin very often since its banks are pretty high except in the area of Cesma in the sector of the big meander where high water level flood parts of the terrain. According to the data of the Hydrological-

morphology analysis, the size of flooded areas for a 100-year flood rank, is 260.50 ha. [11] Flood protection measures showed to be insufficient during the floods in May 2014 when the quarters of Lazerevo, Dervisi, Kumsale, Cesma, Prijecani, Krmine and Karanovac were flooded and population mostly evacuated. During those floods, the bridge near Vitaminka factory has been damaged as well as the pedestrian bridge in the area of Prijecani and the old bridge in Karanovac what led to the breakdown in water and power supply since the installations that ran over the bridge had been disrupted in Karanovac.

2.1.4. The relation of the city and the river

Different periods in the development of the city resulted in evolution of different urban and ambient complexes. The characteristics of the Turkish period when individual possession of the river bank took place is present in certain parts of the bank even up to the present days. Principles of oriental construction of residential settlements, so called 'mahallas' is characterized by irregular street scheme with land plots and individual facilities placed very close to the river and with economic backyards and backsides of the houses facing the water.

With the arrival of the Austro-Hungarians, new urban complex are built at the end of the 19th and beginning of the 20st century on the left bank of the Crkvena river which flows into the Vrbas river by the Kastel fortress. This complex has the features of the European cultural influence, regular street pattern with wide streets, regular blocks and buildings following the European architectural models. We could state that this complex has developed in the north, next to the railway route and the Emperor's Road at a greater distance from the river and with no significant relation with the water. In the second half of the 19th century the "Marija Zvijezda" Trappist monastery in Delibasino Selo had the major impact. The colony of the Trappist order was an encounter not only with different architectural and construction principles but also had economic relevance. The Trappists build the first electric power plant on the Vrbas River. [12]

After the Second World War development of the city is intense and modern architecture of international style appears with construction of high buildings of the new typology, free from traditional street and block regulation. Residential quarters are built in the waterfront, Obilicevo on the right bank and Borik on the left bank of the Vrbas river. /Photo 88/ scattered structure and irregular pattern as well as picturesque ambiance of the oriental mahalla were replaced by the multi-storey facilities for family residence in an organized regular pattern. Therefore, the most important traffic communications in the city were formed on the opposite side of the urban blocks which lean on the river flow. After the WWII, large scale of demolition and transformation of the existing urban structure was caused, inter alias, by the earthquake that hit the city in 1969 and resulted in a mixed style in the big number of the city parts. [4]

The waterfront of the Vrbas River downstream the Rebrovac Bridge was not particularly interesting for residential purposes but was used for construction of industry facilities. The period of socialist construction is characterized by construction of a big number of industrial capacities in the waterfront/located in the area of the estuary of Vrbanja into the Vrbas river where the Complex of Incel cellulose factory was built which used to be the industrial giant of former Yugoslavia that used to employ 16,000 workers/.

In the last two decades there were individual attempts to build at the waterfront with the changed attitude toward the water. Those interventions are sporadic and mostly of local character. In that sense the residential quarter under construction, Novi Borik, located

downstream the Incel bridge can be singled out. New approach to the waterfront could be expected in the future since the Banja Luka City Assembly adopted the "Regulation Plan Pertaining the Banks of the Vrbas river" prepared on the basis of the results of the open international urban planning – architectural tender in 2006. Unfortunately, this Plan to a large extent treats only the narrow belt of the bank neglecting the meeting points of the city with the water. In addition to that there is fear with regard to realization of the planned and the possibility of the city services to regulate the existing facilities built in unplanned manner which often downgrades the waterfront. [13]

2.1.5. Functions of the waterfront

Changing character of the function of the waterfront is one of its primary characteristics. Different periods of the city development brought along the change of the waterfront functions what was directly reflected on its shaping and structure. The presence of drinking water and using its power for watermills as supported by many evidence provide us with a clear picture about the first functions of the waterfront related to existence and the supply of water. / Photo 3, Left/

Defense function of the river is evident in the cities which developed within fortifications and in undercities on the water banks. The position of the Kastel fortress at the estuary of the tributary of Crkvena into the Vrbas river, as well as the existence of the water canal around the fort walls indicate the use of water for the purpose of easier defense from enemy. First forms of trading in open markets appear in the 16th century when a cattle fair is organized around the Kastel fortress. In the beginning the Fair was organized once a year and was quite known, then twice a year, then monthly and finally once a week. / In 1935 the closed facility of the City Market was built/. The Market was close to the river what points to the necessity to trade in the areas located in the vicinity of the water flow. /Photo 3, Right/

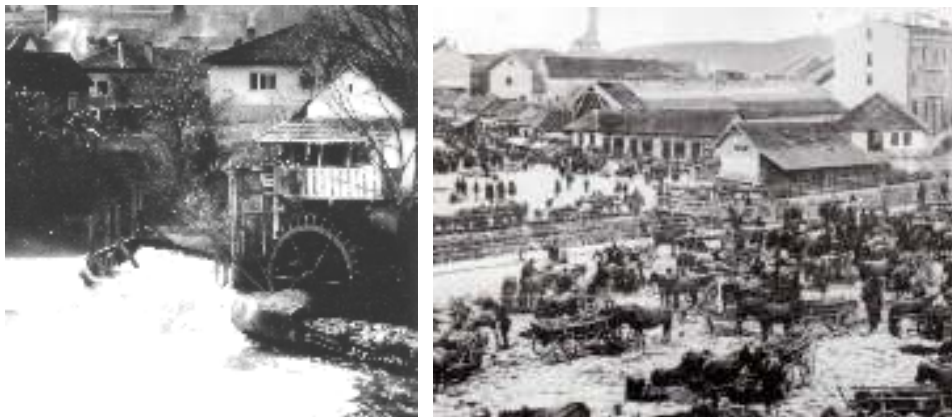


Photo 3 Banja Luka, watermills on the Vrbas River and Govedarica Market, the end of the 19th century / Source: Archive of the Urban Planning Institute of the Republic of Srpska, a.d., Banja Luka/

The manufacturing function in the waterfront becomes evident in the 19th century with the arrival of the order of Trappist who founded their monastery in the village of Delibasino Selo. They built the first electric power plant on the Vrbas river and several

manufacturing facilities. This function of the waterfront was particularly emphasized during the period of industrialization of our cities in the second half of the 20th century.

The natural space of the bank with rich vegetation by the river basin on the right bank in the part from the Venecija Bridge to Rebrovac Bridge is simply arranged but it is accepted by the users and intensively visited as a recreation zone. Recreational purpose is increasingly present through arrangement of separate sport equipment and several public beaches in the city area. Nevertheless, there is no logical continuity of such steps with regard to recreation in the waterfront nor is it followed by architectural framework of the space with necessary contents that would support the active use of urban waterfront.

Today, we talk about different intertwined functions along the city waterfront. The whole belt now is characterized by the new tendencies of exit the town toward the river and is reflected in separate examples of constructing residential and business facilities in the waterfront. The attitude toward the water is gradually changing and the tendency toward opening of the face of the city toward the river is getting more visible.

2.1.6. The bank vegetation

Vegetation as an inseparable part of the waterfront in the urban belt of the river is not articulated nor does it represent sufficiently articulated segment of the city greenery of Banja Luka and the urban space. Organization of this natural belt of the river with the corresponding banks could circle the horticultural complex of the city.

Creation of the landscape architecture facilities did not follow the city development in the adequate way although many plans dealt with the problem. Aspiration to organize the banks of the Vrbas river could be traced back to the earliest town planning documents of the city of Banja Luka. The first of them was the "Proposal of the General Urban Plan of Banja Luka" from 1952 made by Anatole Kirjakov which even though it has never been enacted, contains some valuable data about the city. The author of this Proposal describes the importance of the Vrbas River and its banks which, according to his Plan, should connect many new parks and areas for recreation which have public character. The Programme of Regulation proposes nine guidelines three of which were devoted to greenery, two related to natural features of urban landscape and one to the role of greenery with regard to formation of the identity of the city. [14]

As it is today, the vegetation is the most neglected segment of the city greenery. Due to its specificity that it is neither park nor forest / and certainly not the other part of the horticulture design / but makes a specific phenomenon which must be approached in a complex manner. Since the banks of the Vrbas River are florally and phytology unexplored and since this scientific component is unavoidable precondition for any practical work related to this phenomenon, it is necessary to start preparing the analysis of the situation with regard to vegetation of the river banks. [3] The vegetation of the banks as its inseparable part represents first of all a valuable ecological resource and characteristic environmental reference of Banja Luka which creates many valuable sights and micro-ambient. Unfortunately, the vegetation of the banks has thus far been the most neglected segment of the system of the city greenery thus far that in many parts led to significant downgrading of this area. The exit of the city to the river banks and integration of this precious natural resource with the city should be one of the priorities of urban development in the future period.

2.1.7. Cultural identity

Waterfront is a part of the system of open areas of the city and the way it connects with its most important squares and streets shall define the degree of connectivity of the city with the river. The main pedestrian street, Gospodska Street and the most important squares and parks in the city of Banja Luka do not tie their location to the river bank. We can only state that the main city square, the Krajina Square, partly opens the view toward the Kastel fortress and then indirectly through the market toward the river. As the result of its steep banks and the logic of the construction, the river is perceived only when we leave the city center and step down to one of the city bridges. Peculiarity of the place is set by the Kastel fortress and the City bridge which connects a former Big and Small Carsija and the level of integration of the city and the river and its opposite banks is here intensively realized.

One of the main characteristics of the waterfront of Banja Luka are banks of natural landscape with dominant structures of indigenous greenery. The banks are also known for its city beaches, natural and built beaches which are traditionally used by the local population during the summer months. The shortcoming of those areas is their insufficient accessibility and visibility from the direction of the city.

Cultural identity of the area is defined by the events which take place in its public areas as an expression of the urban way of life in the city. Every year events which last for several days take place which directly depend on the river and represent the most dynamic activities in the waterfront: many sport competitions and races in kayak and canoe type of boats, fishing, etc. when the waterfront gets alive in its role of a public area of the city. The most popular events in the summer period in Banja Luka are held in the open within the walls of the Kastel Fortress. Kastel Fortress is the oldest historical monument in Banja Luka what is supported by many archeological artefacts. „Project of Reconstruction and revitalization of the Kastel Fortress" was made on the basis of the first ranked solution of the international open tender and the works on reconstruction and revitalization of the damaged parts of the Fortress started in 2013. This intervention should create conditions for revival of the capacities of the fortress in future for cultural and tourism purposes.

Extensive and rich construction heritage of Banja Luka has unfortunately been severely devastated in the second half of the 20th century. [4] During the bombing of the city in 1941 during the Second World War and also in the major earthquake which hit the city in 1969, Banja Luka lost many valuable facilities. Beside wars and natural disasters, devastation of historical values was caused by specific approach to urbanization of cities on the territory of the whole former Yugoslavia which urged faster construction of residential blocks and industrial complexes within the city limits without appreciation for the context, urban and architectural tradition. One of the examples of such unthoughtful approach to the matter of urbanization is certainly the covering of the Crkvena River and its transformation into the canal. [15]



Photo 4, Construction of the power plant in Trapisti and its present condition / Source: Archive of the Urban Planning Institute of the Republic of Srpska, a.d., Banja Luka and photograph of the author /

Cultural – historical goods represent the testimonies of the existence of men and human civilizations in time and space and are very important part of entire men's heritage and therefore the identity. Within the subject of the research the facilities of cultural and historical heritage are included. Certain facilities of the waterfront enjoy certain level of protection whereas most of the facilities which possess architectural, ambient and aesthetic qualities are not under protection. Industrial heritage is not recognized under this term in the Law on Cultural Goods. [16] There is the term Facilities of Technical Culture and industrial heritage facilities on two important locations have been reported in this Paper as such. The first is in the village of Delibasino Selo as a very valuable heritage and legacy of the first Trappist colony: the water tower, the mill, part of the brewery and the first power plant on the Vrbas River. The second protected facility of technical culture is the Steel and Iron Foundry Jelsingrad founded in 1936, now in the industrial zone. / Photo 4 /

3. PROPERTIES OF THE WATERFRONT THAT CONTRIBUTE TO HIGHER SPACE QUALITY

Judging only on the basis of visual observation, we can say that the waterfronts in our cities are underutilized and often abandoned and apathetic. On the other hand, the position of our cities, being one of its basic characteristics, is always naturally related to the river and its banks. It is necessary therefore to point out to the properties of waterfronts which based on their analysis contribute to the higher quality of this interspace, at the meeting point of the city and the river.

3.1. Results of the survey of waterfront users

The survey conducted among the users of the space has been used to determine the importance and ways of using the waterfront in selected cities. Survey of random passers-by in the waterfront was carried out in several towns of the Republic of Srpska in April 2014. [17] The largest number of the respondents live in the city of Banja Luka, 117 of them. Regardless of the condition of the waterfront in their city, the vast majority of people interviewed in all seven cities stated that they were very happy to spend time along the

river bank, 86.3% of them in Banja Luka. The principles of using the waterfront has been analyzed, inter alia, by looking into the way the users move in the waterfront. It is evident that hiking is the basic type of movement of respondents in all cities. In addition to this, the movement by using bicycles in Banja Luka is also represented by 19.08% of those surveyed.

The survey questionnaire measured the identity of the area in terms of recognition and associative images that the inhabitants connect with the waterfront. Rest and recreation are the activities identified by the majority of respondents as the first association of the waterfront in the cities which were analyzed.

Unclear water and low level of equipping of the waterfront are negative characteristics that are recognized as such by a large number of users in Banja Luka. Table 5 gives a comparative overview of the initial associations of the interviewed in the waterfront area of selected cities. The answers obtained varied citing unclear water and river banks, low level of equipment in the area, the occupancy of the area, inability to use it as a public space, the level of flood defense protection, natural character of the waterfront, i.e. its vegetation, activities conditioned by the presence of the water, accessibility of river banks and the river, perception of the architectural framework of the waterfront and events taking place in the waterfront. 40.35% of the respondents in Banja Luka are dissatisfied with the landscape of the waterfront in Banja Luka.

Natural character of the waterfront, beaches and greenery are seen as the main properties of the waterfront in Banja Luka but also in many other cities. In the case when the town quay is built on the river bank, then it is exactly the quay along the river that is recognizable and the bearer of the identity of the waterfront as the respondents stated in Novi Grad and Gradiška.

Very rarely, the interviewed referred to the facilities of physical structure built in the waterfront as identity bearers. The exception are the gardens of the cafes along the Vrbas banks and the Kastel fortress as the cultural heritage monument in Banja Luka.

The accessibility of the waterfront and the water are important parameters for the use of the waterfront in the city. In cities where the river bank is easily accessible from the direction of the city, the inhabitants saw this as a distinct quality like the respondents in Trebinje. On the other hand, 24.56% of the respondents in Banja Luka determined the inaccessibility of the river bank as a significant deficiency while 34.21% see it as major disadvantage. / Chart 1 /

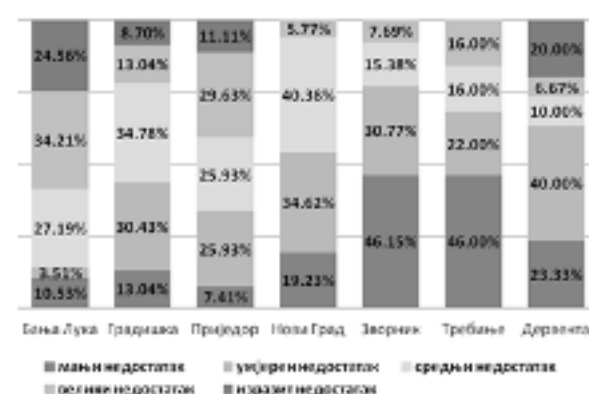


Chart 1 Comparative overview of the survey results by cities: Inaccessibility of the River Bank / Source: Cvoro, M., Doctoral Thesis: Transformation of Waterfronts Intended to Upgrade the Identity of the Cities in the Republic of Srpska and BiH, Banja Luka, 2015/

The largest number, 87.9% of the respondents stated that the waterfront in the city represented a potential that was not sufficiently exploited. The future appearance of the waterfront, according to the vast majority of the respondents' responses, insist on clean water and natural character of the waterfront and the river bank with high level of urban comfort. / Chart 2 /

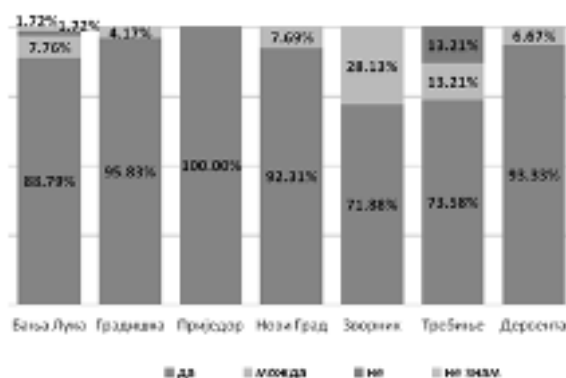


Chart 2 / Comparative overview of the survey results by cities: Waterfront is underutilized capacity / Source: Cvoro, M., PhD Thesis: Transformation of Waterfronts Intended to Upgrade the Identity of the Cities in the Republic of Srpska and BiH, Banja Luka, 2015/

On the basis of the results of the survey and the analysis of waterfronts in the cities stated above, the following conclusions could be drawn:

- Natural character of the waterfront and emphasis on this quality has been seen by most of the respondents in all cities included in the survey as its essential character. Affirmation and improvement of natural values of the waterfront is possible only if the primary condition is achieved and that is clean water. By contrast, in case the water and the urban waterfront are contaminated and polluted, the users see it as a significant and major disadvantage.
- The results of the survey indicate a different attitude of the cities included in the survey toward the river, but can generally be divided to those that have turned their "face toward the river" and another group of towns that have "turned their back to the river", the latter group includes Banja Luka. Accessibility to users, as an important attribute of the waterfront was also recognized during the analysis of the survey results. In case of inaccessibility of the waterfront, respondents identified this as a significant or major disadvantage of the waterfront.
- The interviewed users in the cities included in the survey confirm the assumption that the level of activities which the waterfront has to offer is very low in those cities. Too little contents and too few activities on the river bank is considered by the vast majority of respondents in all cities from the survey to be a significant or major shortcoming in their city. Various possibilities of using the urban waterfront are precondition for the waterfront to be accepted by the users.

- Vast majority of the respondents stated that the level of equipping the waterfront with basic elements of urban comfort, such as hiking and cycling tracks, benches for sitting, shade and lights was at a very low level. Based on the results of the survey, it can be concluded that when the level of urban comfort was low, users see this as evident and significant shortcoming of the waterfront in their city and vice versa, when a high level of comfort is reached, the value of the waterfront grows in perception of users.
- Free time and recreation are the activities identified by most respondents as the first associative thought connected with the waterfront in the cities included in the survey. Very small number of respondents recognized representative bearers of the cities' identities which represent its architectural heritage as the main association with the city waterfront.

Preservation and appreciation of the heritage should be promoted in the community such as ours in order to increase accountability and raise the awareness of the society toward the values of its architectural heritage which continuity shall enable the inhabitants of the city to identify themselves with their own environment.

3.2. Properties of the waterfront

In order to formulate certain recommendations for the improvement of waterfronts, the following chapter provides the properties which these specific urban areas may have:

- Comprehensibility
- Diversity
- Continuity
- Integration
- Comfort

The comprehensibility of the waterfront is determined by ensuring the quality of readability that will enable us to understand the environment with clearly defined characteristics, elements of a certain identity. By emphasizing the specific nature of the coastal area, its natural and created elements, the user identifies the space and develops awareness and responsibility for the site. The understanding of the waterfront landscape is also seen in a wider urban context, given its constituent role in the formation of the city matrix.

The diversity of activities along the river bank is seen as an opportunity to achieve a high level of contextual integration of the city and its waterfront. The waterfront should offer a wide range of options within which various activities of users would be represented. For the quality and intensive integration of the waterfront and the city, the continuity of various activities along the coast is of key importance.

Continuity achieved through cultural heritage enables the city's inhabitants to identify themselves with their own surroundings. This applies to cultural heritage in the broadest sense including cultural landscapes, movable and intangible heritage as well as architectural and archaeological heritage. Due to the significant role of the waterfront as a productive zone of the city, there are also facilities of industrial heritage that today represent an important resource for the urban reconstruction of cities. By enhancing and emphasizing heritage, we underline the specifics of the city and strengthen its identity in the contemporary scene.

The integration of the city with its river is realized in the waterfront and the prerequisite for quality integration is respecting natural factors as conditions, limitations and potentials

for the development of the city banks. The realized ecological values in the waterfront on one hand enable a higher degree of human recovery in the urban environment and on the other hand improve conditions for survival of other forms of life in the city. Waterfronts shaped as an integral space of natural and the built can contribute to the improvement of microclimate conditions in the city area and can help reduce and neutralize pollution and noise and visual and physical relaxation of the urban environment. / Photo 5 /



Photo 5 Banja Luka, park area in front of the University Complex downgraded by the sewage pipes / Source: Photo of the author /

The comfort and comfortability of a given space is realized through physiological, psychological and physical harmony between the man and his environment. The purpose of creating the urban space should be designing such a place that would provide comfort and safety to the user. One of the main characteristics of the waterfront in terms of comfort is safety and flood protection. The feeling that the waterfront offers protection from the unrestrained power of water increases its usefulness and also psychological value for the men. We should not forget also other physical attributes of the comfort of public space, which will form the scene of opportunities for social networking and contacts in the waterfront. [17]

4. CONCRETE ACTIONS AS GUIDELINES FOR FUTURE DEVELOPMENT

By providing multiple values of waterfronts, its significance / functional, aesthetic, ecological / for the city increases. On the basis of the waterfront characteristics defined, general guidelines which contain recommendations for the methods of affecting the process of transforming the waterfronts have been listed:

- Increasing the accessibility of the waterfront / increasing the access through concrete interventions which must be adjusted to individual cases can make the waterfront closer to the users and open possibilities for its more intensive use. At the same time, the protection and emphasis on attractive sights will provide special values of visual connection of the waterfront with the city/,
- The waterfront as the area of protection of natural values in the urban environment / the importance of protecting and emphasizing the natural phenomenon of the river in

the urban environment as one of the main features of the waterfront is necessary basis for future transformations and can be considered as one of the main recommendations for integration of the city with its river/,

- The waterfront as the place of preserving cultural identity / spatial identity as one of the segments of the overall identity of the urban space is determined by the natural and built structures connected to specific forms during historical development of the city. The structures built during the historical development of the city became an inseparable part of the spatial and cultural identity of the urban area, depicting various social, political, cultural and historical events. Representative bearers of the identity of our cities comprise architectural heritage of our cities. Within the framework of transforming and improving the waterfronts, it is necessary to prepare strategies to preserve the heritage and also mobilize its economic potential and give it new life/,
- Complexity of functions and content / In this paper, the diversity of activities along the river bank is seen as the opportunity to achieve high level of contextual integration of the city and its waterfront. The waterfront should offer more opportunities within which different needs of users will be met. The conducted survey found that the functions related to recreation of citizens and cultural events were seen as essential for the improvement of the waterfront and its vitality/,
- Improving the integration of the city and the river through development of public space / there is a growing interest for the improvement of the quality of the urban environment precisely through the domain of public space. In this study, the improvement of the waterfronts of cities is seen as a process directed toward the continuous social and cultural development of public space. The waterfront, formed as the public space of the city would contribute to the improvement of the identity of the city precisely through the relation between the city and the river /,[18]
- New physical framework of the waterfront / newly built architectural facilities entails further construction and raises the market value of already existing or reconstructed buildings in the waterfronts of the cities. All this has the effect of increasing the relevance of the entire urban area of the coast: new jobs, better housing, accompanying facilities and events in the area which was neglected. It is necessary that this transformation of the waterfront offers answers to today's needs of the society, but only by adapting to the existing spirit of the place and understanding the historical and natural context of the waterfront in the city. Otherwise, it may be that the development of the waterfront does not lead to its essential improvement/,[19]
- Increasing the level of urban comfort of the waterfront / improvement of the waterfront should be guided by the idea of designing the places that would provide comfort, comfortable and safe environment to the user. The possibility, at least to a certain extent, of conditions that will be acceptable to a larger number of users, implies certain properties of waterfronts. It is particularly important to provide conditions for physical safety of men in terms of flood protection. In this way, the psychological value of the waterfront for men and the value of this space at the city level will be increased in general/.

REFERENCES

- [1] Cvijić, J., Geomorfologija 2, Beograd: Državna štamparija Kraljevine Jugoslavije, 1926.
- [2] Trancik, R., Finding lost space. New York: Van Nostrand Reinhold Company, 1986., 105.
- [3] Hoyle, B., Water transport and urban development: Some geographical perspectives and propositions, New York: Springer Science+Business Media, GeoJournal, 31(4), 1993., 439-448.
- [4] Owen, J., The water's edge: The space between buildings and water. In: White K.N, Bellinger E.G, Saul, A. J., Symes, M. and Hendry, K. eds. Urban waterside regeneration. Problems and prospects. Chichester: Ellis Horwood Limited, 1993.
- [5] Radović, R., Forma grada – Osnove, teorija i praksa, Novi Sad: Orion Art Beograd, 2003., 39.
- [6] Regulacioni plan za uređenje obala Vrbasa u Banjoj Luci, Banja Luka: Projekt, a.d. Banja Luka, 2010., 13-18.
- [7] Ševo, L.J., Urbanistički razvoj Banje Luke, Banja Luka: Zavod za zaštitu spomenika kulture i prirode Banja Luka, 1996., 62-63.
- [8] Renner, H., Durh Bosnien und die Herzegovina kreuz und quer, Wanderungen, Berlin: Geographische Verlagshandlung, 1896., 427.
- [9] Giljferding, A.F., Putovanje po Hercegovini, Bosni i Staroj Srbiji – drugo izmenjeno izdanje, Beograd: Službeni list SRJ, 1996., 242.
- [10] Samić, M., Francuski putnici u Bosni i Hercegovini na pragu 19. stoljeća i njihove misli o njoj, Sarajevo: Veselin Masleša, 1966., 208.
- [11] Hidrološko - morfološka analiza rijeke Vrbasa na području grada Banjaluke, od granice sa opštinom Laktaši pa uzvodno do lokaliteta Tijesno na dužini od 26 km i Vrbanje na dužini od 3 km, Bijeljina: Zavod za vodoprivredu d.o.o. Bijeljina, 2008.
- [12] Husedžinović, S., Dokumenti opstanka, Zenica: Muzej grada Zenice, 2005., 190-194.
- [13] Regulacioni plan za uređenje obala Vrbasa u Banjoj Luci, Banja Luka: Projekt, a.d. Banja Luka, 2010.
- [14] Vujković, L.J., Došenović, L.J., Dizajn vrta, Banja Luka: Šumarski fakultet Univerziteta u Banjoj Luci, 2014., 34.
- [15] Prostorni plan Republike Srpske do 2015. godine, Banja Luka: Urbanistički Zavod Republike Srpske, Banja Luka, 2008.
- [16] Zakon o kulturnim dobrima, Banja Luka: Službeni glasnik Republike Srpske broj 11/95., 1995.
- [17] Čvoro, M., Doktorska disertacija: Transformacija priobalja u funkciji unapređenja identiteta gradova Republike Srpske i BiH, Arhitektonsko-građevinsko-geodetski fakultet Univerziteta u Banjoj Luci, Banja Luka, 2015
- [18] Gehl, J., Life between buildings - Using Public Space, Copenhagen: Danish Architectural Press. 1986., 12-13.
- [19] Vaništa - Lazarević, E., Regeneracija priobalja - Ugledanje na svetske primere, Book of Proceedings, 1.Symposium on Waterfronts in the Danube Region, Novi Sad: Fakultet tehničkih nauka, 2006., 53-60.