

Bridges in Bosnia and Herzegovina from Ottoman Empire

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Abstract

The bridge is primarily utilitarian construction to ensure continuity of communications at various obstacles, in an open natural environment as well as the physical structure that is designed and built by man.

The first appearance of the bridge is connected to the human need "to cross over to the other side" for existential reasons. As each time the given conditional natural features (geomorphology, water flows, water reservoirs ...), on the route of his physical barriers that occur very often, diverted travel route and regulate people's lives and their communities, from the individual man to the highest state level.

Bridge construction which solves the barrier, could be so important that the whole country opens huge economic opportunities that activates the natural resources to the extreme, to the people and the company involved in the regional and world civilization courses...

Because of its great importance, the bridge throughout human history has become the most representative picture of the man and his community. The number of bridges, their physical stability, potential engineering and architectural design, materialization (...), are the subject of ongoing research, which is, again and again, invent new dimensions beyond their pure utilitarianism.

This work is one of these attempts, where the bridge is treated in a very complex context: the territory of Bosnia and Herzegovina during the Ottoman rule. Selection of topic areas for the "bridge" is no accident: it should be noted that the area of Bosnia and Herzegovina "crossroads of the Worlds", both in

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the natural and geographical (Figure 01) as well as socio-historical sense. In these conditions, the bridge (as a physical structure) and got another meaning: philosophical, religious, aesthetic, psychological... As such, the bridge has become a popular topic in the literature (as authorial literature and in folk traditions), painting, film...

Keywords: *Bridge, Bosnia and Herzegovina, The Ottoman Empire, Water, Obstacle, Separation, Connection.*

Introduction

When we talk about the bridges that were built in Bosnia and Herzegovina during the Ottoman Empire, we want the debate to include a multitude of inputs of natural and social environments that are, for the space of Bosnia and Herzegovina, specific. On the other hand, and outputs of the bridge are unique.

In the natural-geographical terms, Bosnia and Herzegovina is a gasket on the Western Balkans, leaning close to the south of the Adriatic Sea, to the north in a broad contact with the Pannonian Plain. According to the Adriatic Sea, the high Dinarides, strong natural barrier, which Neretva valley cuts through so broad natural connection between the interior of Bosnia and Herzegovina and the Adriatic Sea. Successions are the source of many rivers that flow to the north (to the left in the Sava River, a tributary of the Danube), making more or less spacious valley. In this way, all historical paths (established by the Romans as the main communications) directed toward the Adriatic Sea on one side and the river Sava, on the other side, and from here to the whole world. East West Communications in Bosnia and Herzegovina, has always entailed a multitude of physical barriers on rivers, where they are always meant to overcome the integration of the territory of Bosnia and

Herzegovina in the state organizations that outperform every locality and temporality¹.

For the understanding appearance of bridges (as architectural and engineering programs) in Bosnia and Herzegovina is a very important input to its history. From the history we read an inevitable occurrence of bridges, as well as their demolition and renovation.

History of Bosnia and Herzegovina can be traced through the following periods: the prehistoric era (12000-7500 Paleolithic, Neolithic 7500-4000 BC, the Bronze Age 3300-700 BC, Iron Age, 700-400 BC), Ancient period, Illyrian Hellenism (300-27 BC), the Celts (fourth century BC), Romans (3rd century BC-3rd century), the Western Roman Empire (395-475), Goths (493-535), The origin of the Bosnian state (7-10 c.), The Eastern Roman Empire (476 -), Foreign invaders, Serbs (931-960), Croats (968), Byzantium (1019), Hungarians (1102-1135), Bosnia as duchies (1154-1163), Bosnia, as a kingdom (1353-1463), The Ottoman period (1463-1878), The Austrian-Hungarian Monarchy period (1878-1918), The Kingdom of SHS (1918-1929), Kingdom of Yugoslavia (1929-1941), The Age NDH (1941-1945), Federal Republic of Yugoslavia, SFRY ("Tito's Yugoslavia", 1943-1991), Bosnia and Herzegovina (1992-1995 -).

The transition from one historical period to another was, in general, is a dramatic, with "new winners and lords" tried to belittle the previous masters, and as far as possible eradicate traces of their culture and existence.

Finally, such a turbulent history has made Bosnia and Herzegovina specific and unique country which only a few can

¹ Apart from the fact that the Ottoman Empire was one of the most spacious empire in history, and it is one of the longest lasting empires (in the area of today's Bosnia and Herzegovina in the present period, 1463 to 1878).

understand. It will remain so mysterious and attractive to seekers for truth and meaning in life.

It is important to emphasize that the historically proven uniqueness of Bosnia and Herzegovina with respect to some states in the neighborhood and the world in general (ethnic and religious diversity, especially), going different views on its history, often diametrically opposed, according to certain ethnicities and religions².

Hence it is said that in Bosnia and Herzegovina, “there are at least three truths, at least three of history, at least three languages” ... wherein the observer from the side, with different internal prism that seeing the same things, it's hard to remain objective (not to side with any of the three dominant view).

A wide range of architectural programs

The strength of a society (the state) is not only measured by its territorial expansion and temporal stability, but also in terms of successful in science, art, practical realizations (engineering) and our broad range action of goods-“material culture”. One cannot overlook the fact that the space and the longevity of a society (the state) is proportional to the overall achievement of the designation of cultures and civilizations.

² “One of the themes that are echoed throughout this book is the fact that Bosnia and Herzegovina is a country that has its historical identity - that is actually one of the historical provinces in Europe, with almost uninterrupted history as a distinct geopolitical entity from the Middle Ages to the present day”.

Malcolm, N., *Bosna, kratka povijest*, Buybook, Biblioteka Memorija, Sarajevo, 2011., page 19.

The Ottoman Empire was established in three continents, through five centuries³. Bridges (examined here) are just part of a wide range of architectural programs that have been achieved in Bosnia and Herzegovina during the observed period⁴.

In this work will be processed the following bridges:

- Bridge of the Klepci Capljina (1517, endowment Mustafa Bey-Herzegovina sandzakbeg),
- Bridge at Plandište ("Roman Bridge", a bridge over the Bosna River in Plandište), Ilidza near Sarajevo (1530-1550),
- Kozija Ćuprija (Goat Bridge) on the River Miljacka in Sarajevo (before 1550),
- Old Bridge in Mostar (1557-1566, the work of the builders Hajredin),
- Latin Bridge in Sarajevo (1565, endowment But Ajni beg, Sarajevo Ajana)
- Karađozbeg bridge on the river Buna in Blagaj (before 1570),
- Mehmed Pasha Sokolovic bridge in Visegrad (1571-1577),
- Bridge on the Zepa (16th century),
- Arslanagića bridge in Trebinje (1575, endowed by Mehmed Pasha Sokolovic),
- Bridge the Duman-Firdus bridge Livno (end 16th century),

³ The Ottoman Empire was officially founded in 1299 (its founder Osman Sultan, 1281-1326), and finally ceased to exist 17.11.1922. (The last was the Sultan Mehmed VI). At their peak (1680), the Ottoman Empire was spread across 5.5 million km².

⁴ A wide range of architectural program was during the Ottoman rule in Bosnia and Herzegovina: mosques, madrassas, tekkes, bezistans, hans and caravanserai, hamams, sebiljs, sountains, public fountain, clock towers, the towers and manors, turbes (tombs, mausoleums), churches, synagogues, utilitarian buildings (railway stations)...

- Šeherćehaja bridge in Sarajevo (exact figures are not known upon the time and the builder of the bridge. Possible As mentioned years of construction 1585/1586, 1620),
- Stone Bridge in Konjic (1682).

It should be noted that most of the bridges (which survived until today), built in the reign of Sultan Suleyman the Magnificent (1494-1566), when the Ottoman Empire was at the peak of its powers. At this time, the main architect of the Ottoman Empire is a great Koca Mimar Sinan

(1489-1588), author of some of the most important bridges in Bosnia and Herzegovina. In important positions of the Empire there were many people whose origins are from Bosnia and Herzegovina⁵.

Interestingly, the almost entire literary opus of the writer Ivo Andric (1892-1975), was focused on the times of the Ottoman Empire⁶. Moreover, his novel *Na Drini ćuprija* (*Bridge on the Drina River*, 1945) has a bridge as the "main character" around which weaves a life in a time span of four centuries. For this novel, Ivo Andic won the Nobel Prize for literature (1961).

In the world there is no object/building which in itself embodies so much energy.

⁵ It is believed that during the reign of Sultan Suleyman the Magnificent 35 people from Bosnia and Herzegovina was the highest positions in the Ottoman Empire (grand vizier-Sadr Azam, viziers Four sadness, sorrow with three viziers, the great admirals-kapudan pasture).

⁶ In addition, Ivo Andric has earned a PhD in Graz (1924) with a thesis titled: *The Development of Spiritual Life in Bosnia and Herzegovina under the influence of Ottoman rule* (*Die Entwicklung des Lebens geistigen in Bosnien unter der der Einwirkung Türkische Herrschaft*).

Bridge

We can speak for the bridge, as an architectural - engineering program, in many aspects. From the engineering point of view, the consideration of the bridge would be similar in all regions of the world (and, consequently, also in Bosnia and Herzegovina) and in all times. The focus of these considerations would be placed on the appropriateness of engineering solutions in the context of solving specific physical barriers, in natural or man-built conditions⁷.

Bridge: utilitarian construction

In a purely physical sense, time is materialized line built by the man with the aim of linking existentially important places

⁷ Here are some of the world's most famous bridges in current history:

1. Taşköprü (Stone Bridge), Adana (384),
2. The Ponte Vecchio („Old Bridge“), Florence (1345),
3. The Charles Bridge (Czech: Karlův most), Prag (1357-1402),
4. The Kintai Bridge (renoviran 1673),
5. Richmond Bridge, London (1777),
6. The Széchenyi Chain Bridge, Budapest (Hungarian: Széchenyi láncíd) (1849),
7. Westminster bridge, London (1862),
8. Bruklinski most, New York (1883),
9. Tower bridge, London (1886-1894),
10. The Sydney Harbour Bridge (1923-1932),
11. Golden gate, San Francisco (1937),
12. The San Diego-Coronado Bridge, San Diego (1969),
13. The Bosphorus Bridge, (1973),
14. The Nanpu Bridge, Shanghai (1991),
15. Erasmus Bridge (Dutch: Erasmusbrug) (1996),
16. The Tsing Ma Bridge, Hong Kong (1997),
17. Akashi Kaikyō Bridge, Kobe-Naruto (1998),
18. The Magdeburg Water Bridge (German: Kanalbrücke Magdeburg), Magdeburg (2003),
19. (le Viaduc de Millau), Francuska (2001-2004),
20. Hangzhou Bay Bridge, Zhejiang (2008).

(points) in the space of a single unit that generates meaningful life⁸. In so doing, found the physical space (geomorphology and other natural features: rivers, lakes, forests, deserts ...) determine the geometric complexity of times: once in the form of a time line and sometimes more or less tortuous (in the horizontal plane or by a longitudinal profile). Once a man is fully adjusts its natural resources in defining the route, and sometimes real extreme bold intervention in their existing natural space in order to simplify the pathway, reduced or made more comfortable.

The bridge is the construction that resolves conflicts between human needs and natural limits. Bridge shortens the time, a bridge binds two river banks, in short, a "bridge has achieved continuity in discontinuity". Bridge enhances communication among people and goods, integrates natural place, people, culture and civilization⁹.

⁸ "From everything that man in your life instinct rises and builds, nothing is in my eyes better and more valuable than bridges. They are more important than houses, lighter, more general than temples. Everyone and to each the same, useful, meaningful always erected on the spot where Cross most human needs are more persistent than other buildings and do not serve anything that is secret and evil".

(Andrić, I., *Znakovi pored puta*, Sabranih djela, 1976.

Source:

http://www.svetlost.org/podaci/ivo_andric_znakovi_pored_puta.pdf.

Access: 13.03.2013.).

⁹ About importance of bridge for the existence of people talking and the following passage from the story *Bridge on the Zepa*, Nobel laureate Ivo Andrić:

"He (the Grand Vizier Yusuf, donor) determines all their considerable help, no matter how many more are there in Zepa, and at the same time ordered to see what they need most of the buildings. And he was told that there were four houses Setkic that richest in the village, but the village and the whole region is exhausted, that their dilapidated mosque and sooty, thought the dry fountain, and the worst is that they do not have a bridge to Zepa. The village is on the hill near the confluence of the Zepa to Drina, and the only way to go to Visegrad through Zepa, fifty steps above the mouth. Whatever way bridge of logs, water ga damned. For either overflows Zepa,

Depending on the obstacle to be overcome, “bridge” may represent pieces of stones arranged in a water obstacle in the span length steps, the man jumps over obstacles, pitched rope (Figures: 02., 03.), a wooden plank, ...

Conceptualization and materialization of the bridge determine our attitude toward solving the natural barrier: does it work temporarily or permanently. In doing so, the temporary solution (generally) cheaper and durable solutions-contracting¹⁰.

In the considered period (16th century), the area of Bosnia and Herzegovina was part of the Ottoman Empire, and in that part of the periphery of the empire where the appearance: large desire and enormous efforts for its expansion to the west of Europe. Although the territory of Bosnia and Herzegovina were built a number of wooden bridges¹¹ and the construction of persistent, demanding and expensive engineering stone bridges communications provided stability and intensity of life of the Empire.

suddenly and unexpectedly, as well as all the mountain streams and undermine and wash away the beams, or swell Drina and Zepa stop and stood at the mouth, and she grows up and blow the bridge as if it never existed”.

Andric, I., *The Bridge on the Zepa*.

(Source: <http://ebiblioteka.blogger.ba/arhiva/2009/02/11/2052787>).

¹⁰ Once the temporary solutions of high sofiticirana and system solutions to overcome obstacles, designed in a way their reusability. Such solutions are “floating” (pontoon) bridges, prefabricated bridges (steel bars) ... These are solutions that overcome water obstacles in conduct of military operations or in the event of natural disasters.

¹¹ "Wooden bridge it was very much, ranging from small bridges on streams and rivers, such structures that to satisfy the needs of the largest rivers Bosna, Drina, Vrbas, Neretva”.

Čelić, Dž. i Mujezinović, M., *Stari mostovi u Bosni i Hercegovini*, Veselin Masleša, Sarajevo, 1969., page 29.



Figure 02. "bridge" across the Mekong River

(Photo: <http://ngm.nationalgeographic.com/ngm/flashback/0204/index.html>)



Figure 03. Suspension Bridge on the Neretva River

(Photo: <http://www.panoramio.com/photo/5138547>)



Figure 04. Ponte di Rialto, Venice, Italy (1591)

Arhitekt: Antonio da Ponte

(Photo: <http://www.touropia.com/most-famous-bridges-in-the-world/>)



Figure 05. Chengyang Bridge, China (1912)

(Photo: <http://www.technology.am/most-amazing-bridges-around-the-world-052127.html>)

Bridge: symbol of life

Path, as a physical structure, symbolized life: once straight and carefree, sometimes steep, sometimes tortuous with many obstacles. Obstruction is a symbol of death ("anti life"), and its solution is a symbol of life. Bridge always implies a connection, continuity, well, friendship, life¹²... Like any other human construction, the bridge beyond its usefulness to the extent that it is used as a symbol of man's interpretation of establishing continuity in all spheres of its practical, artistic and spiritual action.

¹² "The bridge, uniting two of the Sarajevo road, linked the town with its surrounding villages. Actually, to say "linked", it is just as true as to say that the sun rises in the morning so that people could see around them and finish their work, and sets in the evening so that we could sleep and rest from daily effort. Because the great stone bridge, a rare structure of unique beauty, as we do not have much richer and busier towns ("I only have two of these in the Empire", was said in ancient times), is the only permanent and safe passage in the whole of the middle and upper course Drina and necessary clasp on the road that ties with Serbia and Bosnia through Serbia, remains, and with other parts of the Turkish Empire, all to Istanbul. A township and its surrounding villages that are just always inevitably develop the major traffic points with both sides of major bridges". Andric, I., *The Bridge on the Drina River*, a novel.

Arch it constructs and that fully correspond properties of stone as a building material. Unlike the beams, as carriers in whom the cross section directly influenced range and mechanical-structural performance of the material is real, onions (or ceiling) can be made from a relatively small elements (pieces of stone, for example) on a relatively large range. At the height of the character of his arrows (the height of the apex of the arch line connecting the two supports port) the parameter that gives constructive performance arch (vault). In this way, the arc "offset" material, and makes a bow, in a sense, tensegriti construction. Onions in its manifestation suggests a long, long symbolized a "door for a better world".

The bridge links the "this" (transient) and "one" (eternal) life¹³.

The importance of link, a man that builds a bridge to the "this" world, and that is always associated with the construction of expression of particular efforts and sacrifices. Many arts use the bridge as a metaphor for life: architecture, literature, music¹⁴, film¹⁵ ...

¹³

- In Latin, for example, the word *pontifex* meaning *builder*, so the Pope as Pontifex symbolizes the bridge between humanity and God.
- Initiation of the Chinese secret societies are marked by crossing the bridge.
- "Bridge of Sighs" (Ponte dei Sospiri) in Venice, connecting the place of trial and executions.

¹⁴ *Bridge over Troubled Water* (1969), song performed by Simon and Garfunkel (Paul Simon, Art Garfunkel):

...„Like a bridge over troubled water
I will lay me down.
Like a bridge over troubled water
I will lay me down“...

¹⁵

- *The Bridge on the River Kwai*, director David Lean (1957),
- *The Bridge (Most)*, Bosnian film, director Hajrudin Krvavac (1969),
- Czech film *The Bridge (Most)*, directed by Bobby Garabedian (2003).

In doing so, the bridge builders are always on the side of life and destroyers of bridges on the side of death. The tension and the constant struggle builder and destroyer symbolize the time in which the alternating two opposites, life and death.

Bridge: aesthetic message

The bridge was built by raising “good people” for the common good. Since an existence, the bridge should be reliable and stable construction, which summarizes its totality best and most sublime of human essence. Bridge build exceptional individuals, making its prevalence often inexplicable to ordinary people¹⁶. Bridge, like concrete and meaningful construction, is an expression of goodness and power of its founders, and the action that can create exceptional individual (engineer-artist)¹⁷ that is just such a work stand out from the everyday and ordinary.

¹⁶ “But the landscape was not able to cleave the bridge, no bridge to the landscape. Seen from the side, its white and boldly bent bow seemed always isolated and alone, and surprised passengers as unusual thoughts, stray, and was caught in the rubble and the wilderness”.

Andric, I., *The Bridge on the Zepa*.

(Source: <http://ebiblioteka.blogger.ba/arhiva/2009/02/11/2052787>).

¹⁷ Among the best known builders of bridges can be enumerated as:

- Koca Mimar Sinan (1489/1490-1588): Mehmed Pasha Sokolovic Bridge over the Drina River in Visegrad (1571-1577),
- Gustave Eiffel (1832-1923): The Bridge on the Truyère River Garabito (1884),
- Robert Maillart (1878-1940): The Bridge on the Thur River at Felsegga (1933),
- Sir Norman Foster (1935 -): Millennium Bridge, UK (1996-2000), Millan Viaduct, France (1996-2004), Arsta Bridge, Sweden (1994-2005),
- Santiago Calatrava (1951 -): Bach de Roda Bridge Philip II, Barcelona (1984-1987),
- Shandong Gaosu Group: Jiaozhou Bay Bridge (2011) ...

Bridge: philosophical message

One of the oldest themes in philosophy, the relationship between good and evil. We saw that the bridge was built, which more than any other building in general, used the maximum number of people. Hence the construction of the bridge can be considered the best possible good work that man can do.

As we are talking about building bridges in Bosnia and Herzegovina during the administration of Ottoman Empire, Islam, as a religion and as a general view of the world, was the focus of every human activity¹⁸.

In line with this view of the world, and do it behind his life ("this" world) leave the good work, is to understand the organization of the universe and to understand the place and role of man in it. "This" world (life on Earth) is a short-lived, and only opportunity which God gave to man to do the good work that he will, in proportion to its size, to determine the location of "that" world¹⁹. Moreover, the man, and after his

¹⁸ "You will not be achieved until the charity share a part of the wealth ga love yourself". (Qur'an, Ali Imran, 92),

- "Do good to be happy and saved". (Qur'an, Al-Hajj, 77),

- "If someone does as a bit of good will see it". (Qur'an, ez-Zilzal, 7).

Source: Quran (Translation: Besim Korkut), Oriental Institute in Sarajevo, special editions VII, Sarajevo, 1977).

The Sunnah (tradition from the life of the Prophet Muhammad (PBUH) states:

"With the death of a man cease all his works, except in three cases:

- If you leave behind a well-bred offspring,
- The knowledge that people use (scientific work),
- What good hair use to the people".

¹⁹ In Gazi Husrev Bey endowment states:

"The intellectual and intelligent man was no secret that this world is transitory. Benefits puck and fruits Waqf does not stop until the world began, and its effect is permanent. Because he understood the content of these principles, an accomplished through knowledge and understanding, whom God has honored a pure soul, human perfection, angelic qualities,

departure from the “this” world (after death), to be inscribed on good works (meaning, it will be alive) if you leave behind a lasting good work²⁰.

Ordinary people, however, in their own way of experiencing and understanding the great things the sui physically stable, using them as a metaphor for the physical strength and endurance:

- “Hard as on the Drina”.
- “Hard faith like on the Drina”.

The most famous bridges in Bosnia and Herzegovina from the Ottoman rule

As construction of the highest national importance, the most important bridges in Bosnia and Herzegovina during the Ottoman Empire were built by people of the highest position in the state: Sultan Suleiman the Magnificent, Grand Vizier Rustem Pasha, Grand Vizier Mehmed Pasha Sokolovic.

This subject is well covered in our scientific and technical literature²¹.

great and good deeds, nobles guideline heroes, sun emir, emir Husraw Bey el-Gaza's present commitment to the governor in Bosnia, raises beautiful mosque in Sarajevo, which finds its beauty best buildings”.

(Source: <http://www.islambosna.ba/tekstovi-i-knjige/oziljci-vremena/29210-vakufname-u-gazi-husrev-begovoj-biblioteci>. Access: 14.03.2013.).

²⁰ “As long as the world endures benefit Waqf does not stop its activity until judgment day ends”.

Quote from the First Gaza Husrev Bey endowment (1531).

(Source: <http://www.vakuf-gazi.ba/>. Approach: 14.03.2013.).

²¹ ... “16 span the golden age of bridges in Bosnia, with 34 objects, 17 th century with only 10, in 18th century grow to 15 bridges, which are mostly updates”.

Čelić, Dž. i Mujezinović, M., *Stari mostovi u Bosni i Hercegovini*, Veselin Masleša, Sarajevo, 1969., page 29.

Bridge of the Klepci near Capljina (1517)

Bridge of the Klepci near Capljina, across the Bregava river, built (1517) Herzegovina Sanjak Bey Mustafa Bey Davudpašić. His physiognomy and elegance reminiscent of the Old Bridge in Mostar. Unlike the Old Bridge in Mostar (which, it looks as infiltrated the rocky bank of the river, which connects), a bridge over the Bregava river in Klepci appears as a distinct and bold intervention of man in a natural area: stone bridge, on flat ground, bridging the river (which, when the swell is achieved enormous destructive power) in a range, such as long (Figure 06). This bridge is considered one of the masterpieces in the construction of infrastructure facilities from the time of the Ottoman Empire administration in Bosnia and Herzegovina²².

The range of the bridge 17.52 m, while the arrows of his arch 6.30 m spandrel arches vault for about 4 cm retracted inside compared to the frontal walls allowing the arch accentuated. Tread width of the bridge is 3.75 m with a steep grade line. The highest point of the running surface of the bridge is 7.20 m above the minimum water level of the Bregava river, and 6.44 m on the right and 5.71 m on the left bank. Tread processed cobblestone bridge of river pebbles.

²² The bridge was declared a national monument of Bosnia and Herzegovina (decision from 21st to 27th January 2003.).



Figure 06. Bridge of the Klepci near Capljina
(Photo: <http://www.panoramio.com/photo/14435409>)

Bridge in Plandište ("Roman Bridge", a bridge over the Bosna river in Plandište), Ilidza near Sarajevo (1530-1550)

Bridge in Plandište near Sarajevo ("Roman Bridge")²³ is the only preserved bridge that was built in the Bosnia river under the Ottoman Empire administration²⁴. This bridge²⁵, which is an extraordinary silhouette incorporated into the landscape is built on flat ground, so that its geometric and structural features correspond to the variability of water mass (flow) of Bosna river during the year, an access ramp to the surrounding terrain to the bridge itself are relatively long, inundation with rectangular openings (10x100 cm) which, in the case of floods over the role of the bridge failure. Length of the ramp on the east side is 85.30

²³ The name "Roman Bridge" comes, it is believed, hence it is in this place was built the bridge during the Roman Empire, and that the present bridge was built from the material of its predecessor.

²⁴ It is possible that this is the only stone bridge built on the river Bosna the Ottoman Empire, since it is not known whether other bridges across the river Bosna which are mentioned (Čekrekči bridge and bridge Hajji Mustafa Dawood Pasha which were built in the Visoko) were of stone.

²⁵ The bridge was declared a national monument of Bosnia and Herzegovina (15th to 21st March 2005.).

m, while the length of the bridge 52.10 m width of the bridge (with a parapet-stone fence) is 4.55 m, and a height at its highest in the 4.50 m in the part above the normal flow of the Bosna river, a bridge river has six supports to conventional cross-section (with the icebreaker in the upstream side), while the third line, in its background (downstream strain) has built counterfort. The bridge has seven clean-circular arcs of different radii, which corresponds to the designed level of the bridge. Moving from the east towards the west end of the bridge, according to its length, the ranges of arches are as follows: first vault 3.30 m, 4.10 m vault second, third vault of 4.90 meters, while the range of the fourth (central) 5.70 m arch bridge. Certain elements are aesthetically highlighted: their-profile arches back from the front walls of the bridge, and the parapet (fence) -inserting a thin rim in contact with the main body of the bridge (Figure 07).

Materialization of the bridge, during its construction, the highest level: the main body of the bridge is built of finely cut stone blocks set in lime mortar, parapet of finely cut stone blocks associated with iron cramps set in lead, while the walkway bridge made of flat pavement.



Figure 07. Bridge at Plandište ("Roman Bridge"), Ilidza near Sarajevo

(Fotos: <http://www.panoramio.com/photo/21245184>)

Kozija ćuprija (Goat Bridge) on the Miljacka river in Sarajevo (before 1550)

Kozija ćuprija (Goat bridge)²⁶ was built across the Miljacka river, three kilometers upstream from Sarajevo, on the route of the famous caravan route (Istanbul road) who led from Sarajevo (more precisely, from Šehercéhaja bridge, over Alifakovac and Goat Bridge, continues over Praca and Gorazde, Serbia and Bulgaria) to Constantinople (Istanbul). This bridge had a role of the gates of Sarajevo, which were built in Sarajevo and welcomed the royal governors, viziers.

Kozija ćuprija (Goat bridge) is a stone bridge with a single arch (span 17.60 m) whose coastal walls- abutments facilitated with one circular opening on both sides of the central arch. The total length of the bridge is 42 m, and the width is 4.75 m bridge elements are emphasized in a manner typical of the Ottoman period stone bridge: port profile is a bit far from the plane of the

²⁶ Goat bridge was declared a national monument of Bosnia and Herzegovina (30th August-05th September 2004.).

support walls and the stone parapet cornice-thin line separated into part of his contact with the main body of the bridge (Figure 08).

For this bridge (and for all the great and important buildings in Bosnia and Herzegovina from the Ottoman period) related to numerous legends, in some way complement his physical appearance.



Figure 08. Kozija ćuprija (Goet Bridge) on the Miljacka river in Sarajevo

(Photo: Professor A. Hadrović, PhD, 02.05.2014.)

Stari most (The Old Bridge) in Mostar (1557-1566)

Old Bridge in Mostar, under the orders of Sultan Suleiman the Magnificent, built in Mostar (1557-1566), over the Neretva river, where previously there was a wooden bridge (1452). Obviously, it is extremely important to that point (and the natural barrier) to communicate between the Adriatic Sea and Bosnia, which followed the river Neretva. His architect-builder was Hajreddin, one of the best students of the great Mimar Sinan. The bridge is arched, one ranged, with a steep contour alignment, typical for most of the bridges were built in the Ottoman Empire. The range of ports is 29 m, the height of his

arrows 20 m long and 4 m bridge is part of a larger urban areas²⁷, where the two towers (Halebija Tara on the right and on the left bank of the Neretva River, which originate from the 1444th year) is so grown together with Corps bridge to appear as a natural part of his (Figure 09).

Similar to other bridges, the construction of significant achievements in Bosnia and Herzegovina during the administration of the Ottoman Empire, and the bridge was connected with many legends²⁸.



Figure 09. Stari most (The Old Bridge) on the Neretva River, Mostar

(Photo: Professor A. Hadrovic, PhD, 01.05.2013.)

²⁷ Declared a national monument of Bosnia and Herzegovina (06th-10th July 2004.). Stari most (The Old Bridge) and urban ensemble around him is on the UNESCO World Heritage List (2005).

²⁸ One of them talks about how his architect, Mimar Hajruddin given a task in such a rigorous manner the execution of his duties, that he was threatened with death in case of failure. Legend says that Mimar Hajrudin preparing for his funeral at the time of removal of cribs, at the very end of the bridge. One of the most difficult moments in the history of the bridge took place 09th November 1993. when they collapsed HVO forces after relentless artillery shelling.

Latinska ćuprija (Latin Bridge) in Sarajevo (1565)

Latinska ćuprija (Latin Bridge) is a bridge built (1565) in Sarajevo, significant Ajni Ali-Bey over the Miljacka River in the center of the oriental part of Sarajevo (Figure 10). Prior to the current bridge, at this point it is a wooden bridge built in (1541) by Hussein, the son of a certain Širmerda. The term "Latin" gave people kind of a bridge connecting the right bank of the Miljacka, cars and mahalla populated Muslims and the left bank, mahalla populated Christians (colony Dubrovnik's retailers).

The bridge was built of cut stone²⁹, with three supports the Miljacka coastal persistent and strong walls of stone wall and four vaults. The pillars of the bridge have a common cross-section of Ottoman stone bridge: the upstream Strain poles have a sharp profile (icebreaker), and in its hinterland strong buttresses. Attracted the attention of circular perforations body bridge, one above the two central pillars of the Miljacka, which remind us of the similar (but with the coastal regions of the body of the bridge) to Kozija ćuprija (Goat bridge) over the Miljacka river, two miles upstream from the bridge.

²⁹ Similar to the history of all the major bridges in Bosnia and Herzegovina, and for this the most important events. Certainly the most famous assassination attempt on the road (on the approach to the bridge on the right bank of the river), he Gavrilo Princip crown prince the Austro-Hungarian Franz Ferdinand and his wife Sophie, Duchess Hohenberg (28.07.1914.). It is known that the assassination was the occasion for a declaration of war on the Austro-Hungarian Monarchy, Serbia and the reason for the First World War.

It is interesting that on this bridge was built Crown Ferdinand Monument (Monument to murder, 28.06.1917.), But also that this monument was removed, and the bridge named after the assassin (Gavrilo Princip), Princip bridge. This is the name of the bridge, was between the First and Second World War, then from the end of World War II until 1992. year, when he returned to the original name.

The vaults of the bridge have a profile of pure circular arcs with ranges (from left to right bank): first opening 6.20 m, 3.00 m pole first, second hole 6.80 m, 2.40 m second column, third hole 8.40 m, 2.40 m third pillar, the fourth hole 7.00 m, and coastal approaches the sap of 3.00 m total length of the bridge (today) is 39.20 m, although its length in its original form (before regulation Miljacka river bed) was 50 m.



Figure 10. Latinska ćuprija (Latin Bridge), Sarajevo
(Photos: Professor A. Hadrovic, PhD, 02.05.2014.)

Karađozbeg bridge on the river Buna in Blagaj (before 1570)

Karađoz-beg bridge on the river Buna³⁰ is raised (before 1570) Zaim hajji Mehmed Bey, more popularly known as Karađoz-Bey³¹, the largest benefactor in Herzegovina. The bridge is situated at the point where you take the (old) way towards Stolac from Mostar-auction sales Buna spring, 700 meters downstream from the Buna, (Figure 11). It is assumed that the

³⁰ The bridge was declared a national monument of Bosnia and Herzegovina (06th to 11th December 2003.).

³¹ Karađoz Bey is much better known brother of Rustem Pasha, the grand vizier and son in law of Sultan Suleyman the Magnificent.

bridge was built on the site of the medieval river crossing Buna³².

Geometric characteristics of design and engineering of this bridge are the ones that are common to the stone bridges of the Ottoman Empire: it changes more or steep profile Nivea bridge adjustments arising from the construction field and the flow of water, or the size of the arches (arches) bridge. This bridge has five arches resting on four pillars in the river bed, and two feet on river banks. The pillars of the bridge are made of fine klesanoni stone blocks, with cross-section which is common for this type of bridge. The radi of the arches are increasing from the coast to the middle of the bridge, symmetric with respect to the center of the bridge: the end arches (the first from the coast) have a range of 3.90 m, 4.90 m second, while the middle vault has a range of 6.00 m total length of the bridge is 33.40 m or 50 yards, including an access ramp. The plane roadway width of the bridge is 2.68 m and the total width of the bridge (including a parapet) 2.98 m walkway of the bridge is paved with cobbles.

Bridge vaults are accentuated their frontal arcs (about 3 inches) in relation to the plane of the walls, while the parapet (fence) bridge-wall of cut stone, separated by a thin wreath (sticking a row of stone blocks) from the base Corps bridge.

³² Čelić, Dž. i Mujezinović, M., *Stari mostovi u Bosni i Hercegovini*, Veselin Masleša, Sarajevo, 1969., page 206.



Figure 11. Karadžobeg bridge on the river Buna in Blagaj
(Photo: Professor A. Hadrovic, PhD, 01.05.2013.)

Mehmed Pasha Sokolović bridge (1571-1577)

Mehmed Pasha Sokolović bridge construction, which binds to an extremely long period of existence (more than four centuries), turbulent history, many great historical figures, outstanding engineering and construction and architectural and creative ventures, and countless individual-human fate that is an artistic way, tried to bind and enlightening writer-Nobel laureate (1961) Ivo Andrić's novel *Na Drini Čuprija* (*The Bridge on the Drina river*, 1945).

Mehmed Pasha Sokolović bridge³³ is the most famous bridge in Bosnia and Herzegovina, not only from the period of the Ottoman Empire, but in general. This bridge is built during the height of the Ottoman sultans, Suzejman the Magnificent and one of the most famous grand vizier of the Ottoman Empire, Mehmed Pasha Sokolovic, one of the most famous masterpieces

³³ The bridge was declared a national monument of Bosnia and Herzegovina (21st to 27th January 2003.). This bridge is on the UNESCO World Heritage List (2007).

of the greatest Ottoman architect Mimar Koca Sinan, (Figure 12).

The bridge was built (1571-1577) on the Drina river on the way to be the steadiest crossing the Drina river, one of the biggest obstacles to the Ottoman Empire to its west, the famous *Carigradskoj džadi* (Constantinople Judd).

The bridge has eleven arches resting on nine powerful columns (cross-sectional 11.50/3.50-400 m) in the bed of the Drina river, and on one wall whose profiles are in the form of pointed arches, typical of most of the construction of Ottoman architecture. Ranges vaults of 10.70 to 14.80 m, with a bow on the right bank of the range of 5.20 m.

Bridge, on the left bank of the Drina river, ramp access to powerful 120 whose length and width 6.60 m length of the bridge is 179.44 meters and the width of its roadway plane-pavement is 6.00 m fence bridge of stone wall width of 60 cm. Fence from the main corpus bridge divides crown height of 30 cm, derived with rows of stone blocks. In the middle of the bridge, on its upstream strain is an impressive stone portal with an epitaph (inscription) on the bridge and its vakif while facing the portal, on the downstream side of the bridge widening (sofa) for sitting and resting.

Not one building in Bosnia and Herzegovina is not wrapped so much more living legend and controversy as Mehmed Pasha Sokolovic in Visegrad. It combines the past, present and future and, as such, the most striking symbol of Bosnia and Herzegovina, and life in general.



Figure 12. Mehmed Pasha Sokolovoća Bridge in Visegrad
(Photos: Prof. dr A. Hadrović, 04.08.2011.)

Bridge in the Zepa river (16th century)

Bridge erected (16th century) in Zepa, situated on the left bank of the Drina river, twenty miles downstream from Visegrad Drina. The bridge was built with a view to ensuring the stability of communication between the settlements on the left bank of the Drina. After a hydroelectric power plant (and raising the Drina), the Bridge was submerged. As this is an extraordinary work of great value³⁴, the property was “transferred” (1967) to a location upstream from the mouth of the Drina river in Zepa.

Although there is little precise information on the construction of this bridge, a more precise image of its geometrical-structural and architectural elements can be concluded that the time of its construction, builders who have designed and craftsmen who built it coincides with the time and other circumstances related to Mehmed Pasha Sokolovic in Visegrad. This bridge has been the subject of many legends,

³⁴ The bridge was declared a national monument of Bosnia and Herzegovina (25th to 31st January 2005.).

including the Nobel Prize winner Ivo Andrić who wrote great narrative, *Bridge on the Zepa*, where this beautiful bridge is used as a template for an essay about life, art and the artist, good and evil, transience and eternity.

Most of length 21.60 m and width 3.95 m was carried out with a single arch. Its frontal sections of pointed arches span 10.20 m of height 6.50 m, with strong supports and the coastal flat grade line. The fence of the bridge is made of finely cut stone blocks, 20 cm wide (Figure 13).



Figure 13. Bridge on the Zepa River
(Photo: Professor A. Hadrović, PhD, 04.10.2009.)

Brief overview of building bridges in other parts of the Western Balkans during administration of Ottoman Empire

Officially, the Ottoman Empire was founded in the 1299th year, and its founder and the first sultan were Osman I (1281-1326). First Capital, was the Sogut (1299-1326), a city in Asia Minor, and spread Imperje, capital grew in a row: Bursa (1326-1365), Edirne (Jedren, earlier Hadranopolis, 1365-1453), Constantinople (Stambol, formerly Constantinople and now Istanbul, 1453-1922).

Similar to all previous great civilizations (Mesopotamia, Persia, Egypt Antique, Greece Antique, Rome Antique), so the expansion of the Ottoman Empire followed the construction of roads and bridges on natural obstacles their preferred route.

Over a period of more than seven centuries, was the highest achievement in the construction of bridges, both on the territory of today's Republic of Turkey in the areas so long as the administration has reached the Ottoman Empire. In particular, intensive construction of bridges were in the direction of Europe (the European part of Turkey, Bulgaria, Macedonia, Bosnia and Herzegovina, Greece, Albania ...).

Among the most valuable achievements of bridges in the territory of the Ottoman Empire of Turkey to mention:

- Long Bridge (Uzunköprü) on the river Ergen, Uzunköprü in Edirne (1426-1443), which was designed by the architect Müslühiddin, during the reign of Sultan Murad II (Fig. 18). The bridge was built as a reconstruction of the ancient bridge, which had 174 arches, length 1392 m, width 6.80 m

- Sultan Suleiman bridge, Büyükçekmece (1568), which is a construct Koca Mimar Sinan, (Fig. 19).
- Tunca Köprüsü, Edirne, (1615), the endowment Ekmekçizade Ahmet Pasha, which was designed by the architect Sedefkar Mehmet Aga, (Fig. 20).
- A large number of bridges on the Firtina river, Çamlıhemşin, Rize Province on the Black Sea coast (Fig. 21).

In extremely valuable achievement bridges in the territory of present Bulgaria include:

- Kadin Bridge in the Struga River, Nevestino (1470), the endowment Isak Pasha (the time of Sultan Mehmed I, 1389-1421), (Fig. 22),
- Old Bridge (Старият мост) on the river Maritsa, Svilengrad (1529), the endowment Mustafa Pasha, the work of the architect Mimar Sinan. The bridge is 295 m, width 6 m, the bridge has a 20 (21) range, and the highest range is 18 m, (Fig. 23).

One of the most famous bridges erected during the Ottoman rule of Greece's Bridge on the River Arachthos, Arta (17th century), (Fig. 24).

In Albania there are more valuable bridges, of which Mes Bridge (Ura e Mesita) on the Cyrus river near Shkodra (1770), one of the most famous. The bridge was endowed Kara Mahmud Bushatija, (Fig. 25).

The most famous bridge in Macedonia in Skopje Stone Bridge (1451-1469, built in the reign of Sultan Mehmed II El Fatih the Conqueror. Bridge is 214 m long and 6 m wide, (Fig. 26).

The most famous bridge in this period in Kosovo's Bridge on the River Bistrica in Prizren (15-16 centuries), (Fig. 27), the

Serbian White Bridge in Vranje (1844), (Fig. 28), in Montenegro the Bridge on the Ribnica river, in Podgorica (16 c), (Fig. 29).

One of the most spectacular bridges at all, built for the government of Sultan Suleyman the Magnificent was a wooden bridge near Osijek, Croatia. This bridge was constructed by a Koca Mimar Sinan and performed under the direct supervision of the Grand Vizier Ibrahim Pasha Pargalia (start of construction August 16th 1526th). The Bridge was a 7 km long, 6 m wide, and combined with the Osijek Darda, (Fig. 30). This building was the construction of strategic importance in the campaign wars against the Ottoman Empire of the Habsburg dynasty. Suleiman bridge was finally destroyed by the Croatian nobleman Nikola Zrinjski VII (1664).



Figure 18. Long Bridge (Uzunköprü) on the Ergen river, Uzunköprü near Edirne (1426-1443)

(Architect: Mimar Müslihiddin)

(Photo: <http://www.edirnecityguide.com/uzunkopru/>)



Figure 19. Sultan Suleiman the bridge, Büyükçekmece, Turkey (1568)

(Architect: Mimar Koca Sinan)

(Photo: <http://www.panoramio.com/photo/9721151>)



Figure 20. Tunca Köprüsü (Ekmekçizade Ahmet Paşa Köprüsü), Edirne, Turkey (1615)

(Architect: Mimar Mehmet Sedefkar aga)

(Photo: <http://www.panoramio.com/photo/212489>)



Figure 21. Bridge on the Firtina river, Çamlıhemşin, Rize Province, Turkey

(Photo: <http://www.mytripolog.com/2009/04/turkey-four-season-at-the-same-time-part-3/>)



Figure 22. Kadin Bridge on the Struga river Nevestino, Bulgaria (1470)

(Photo: <http://bulstack.com/2009/09/23/kadin-bridge/>)



Figures 23. Old Bridge (Старият мост) on the river Maritsa, Svilengrad, Bulgaria (1529)

(Architect: Mimar Koca Sinan)

(Photos: <http://www.panoramio.com/photo/47420414>)



Figure 24. Bridge on the Arachthos river (Αραχθός), Arta, Greece (17th century)

(Photo: <http://foter.com/ff/photo/8379172493/d4d09b7c4d/>)



Figure 25. Mes Bridge (Ura e Mesita) on the Kir river, near Shkoder, Albania (1770)

(Photo: <http://albaniatoday.files.wordpress.com/2011/06/mes-bridge.jpg>)



Figure 26. Stone Bridge in Skopje, Macedonia (1451-1469, reign of Sultan Mehmed II the Conqueror Al Fatiha)

(Photo: <http://www.panoramio.com/photo/34934055>)



Figure 27. Bridge on the River Bistrica, Prizren, Kosovo (15-16 centuries)

(Photo: <http://www.panoramio.com/photo/1732156>)



Figure 28. Beli (White) Bridge, Vranje, Serbia (1844)

(Photo: <http://www.panoramio.com/photo/11282119>)



Figure 29. Bridge on the Ribnica river, Podgorica, Montenegro (16th century)

(Photo: <http://www.panoramio.com/photo/13857943>)



Figure 30. Suleiman's Bridge (the Hungarian publication Tolna World History) (1526)

(Photo: http://en.wikipedia.org/wiki/File:Esz%C3%A9ki_h%C3%ADd_.jpg)

Conclusion

By the house (residential building at all), the bridge is a building that is the closest relationship with the concept of existence. If the house is a place in space (where one exerts the greatest extent of their size), then the time-punctuation or more regulated physical communication between. Barriers to the

communication prevents relations between, and thus represents a negation of communication, a negation of life. The bridge is a physical structure that obviate the barrier, a structure that man creates and materializes in the way of maintaining those dimensions of communication, and their intensity, to impose life force pulsing between individual sites (events) in the space. In this way the bridge becomes a place that, even more than any other place in the area, takes on a multitude of dimensions, becomes the common denominator of all of that bind, and the expression of life energy that pulsate to a particular communication.

The importance of communication, and thus the importance of the bridges along the communication barriers, proportional to the strength of society (the state) which is being built. Needs to be reminded that the greatest architectural and engineering achievements made in the midst of great civilizations.

This paper would like to confirm the forward received treatise, but go a step forward: to examine the effect of the bridge, explore the range of its meaning, in the middle of the lower level of general development when it finds itself in a larger sphere of powerful states and civilization. The study shows that the bridges were built in Bosnia and Herzegovina for the era of the Ottoman Empire administration (at the peak of its power, during Sultan Suleiman the Magnificent), an expression not only of expediency, but overall being of people and society of Bosnia and Herzegovina: religion, morality, philosophy, art, myths, legends ...

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