

# (IN)TANGIBLE HERITAGE(S)

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# **DIGITAL TECHNOLOGIES FOR URBAN REGENERATION: A CASE STUDY OF THE FORMER BILEĆA STREET IN TREBINJE, BOSNIA AND HERZEGOVINA**

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## **INTRODUCTION**

The Digital or Fourth Industrial Revolution, which began in the 1980s, is the event that has contributed the most substantially to possibilities for global information dissemination. The explosion of digital technologies over the last twenty years has brought change to the conventional workflow. Institutions dealing with cultural heritage have recognised the opportunities afforded by digital technologies for the preservation of tangible and intangible heritage, especially the great potential they have shown for improving public access to different forms of cultural heritage and its reuse.<sup>1</sup> Over the last two decades, there has been a debate among experts about the benefits and drawbacks of using digital technologies for the purpose of preservation of cultural heritage, as well as the relationship between the material and virtual worlds. Digitisation has caused many controversies and dilemmas as to whether digital technologies can recapture the past outside what was previously the human sociocultural context. Heritage is revitalised not solely for its spatial presentation, but also for the experience and magic of feeling that one is in the past. This is a creative approach that allows one to experience history using all senses and is a way to present heritage that really appeals to people. The upside of digital technology is that it allows the protection, conservation and promotion of tangible and intangible heritage. Ideas and initiatives such as virtual museums, libraries and galleries are readily embraced when a site or an institution cannot be accessed physically, and they were actively implemented during the COVID-19 pandemic. It is often reiterated that the ultimate goal of using digital technology is to understand the past and to appreciate the achievements of ancestors.<sup>2</sup> The European Commission launched Europeana, a platform that provides access to cultural heritage through digital technology and is freely publicly accessible.<sup>3</sup> The use of digital technology is a two-way process in that it has influenced our understanding of heritage on the one hand, while on the other, cultural heritage has also influenced how digital tools can be used.<sup>4</sup>

## **DIGITISATION IN THE SERVICE OF REVITALISATION OF CULTURAL HERITAGE**

Globalisation and the modern way of life have led to heritage becoming a cornerstone of efforts to preserve identity. In recent decades, the protection of building heritage has been at the core of urban and cultural policy across Europe and beyond. These processes have seen the involvement of such

global international organisations as the UNESCO and ICOMOS, or within Europe's borders, the Council of Europe and the non-governmental sector, such as the Europa Nostra federation. Technological progress has opened up possibilities to preserve and revitalise both tangible and intangible heritage. Initially, it was museums that first began using digital technology, followed by efforts to revitalise tangible cultural wealth and making documentaries to bring history to life.

However, there has been relatively less research into the preservation and transmission of intangible heritage.<sup>5</sup> According to research, projects that have used digital technology to preserve intangible heritage include the UNESCO Atlas of the World's Languages in Danger and recording vernacular music.<sup>6</sup> Digital reconstruction of urban complexes such as streets requires an in-depth knowledge of everyday life, of how an area formed and how it was experienced. It is particularly difficult to reconstruct those urban places – or bring back their spirit – whose transformation has led to their physical disappearance.<sup>7</sup> New technologies can assist with establishing former street use patterns and understanding the culture of towns and cities. The importance of the case study presented herein is that it attempts to bring to life the historical and cultural life of Bileća Street, Trebinje's former high street.

## **METHODOLOGY**

The first part of the paper presents the method of theoretical analysis and the historical method employed as the research framework. In addition, for the needs of the research geodetic maps, photographs, newspaper articles and interviews with Krš residents, whose memories hold the answer about the key events in the Bileća Street area. The land use plan, functions, plot area and construction density in the area under consideration were very useful for the analysis. Instrumental for the research was analysing land use because it helped to establish residents' activities and routines. The historical development of Bileća Street is described briefly to present both the valuable architecture that has been destroyed and the buildings that remain. A close reading of narratives and anecdotes as well as newspaper articles and recorded interviews served as a source of information about the local culture of living.

The carefully collected materials analysed in the first part of the paper permitted the study authors to make conclusions about the characteristics of the area under consideration, and synthetic reasoning helped to see possibilities for its future development and revitalisation with the help of modern technologies.

## **THE STREET AS A PUBLIC SPACE FOR EXPERIENCING THE CITY**

Streets are public open spaces whose primary purpose is to allow the movement of and communication between people, as well as their interaction with the environment. Kevin Lynch and Norberg-Schulz believe that streets are places of cohabitation, 'small worlds', segments of the life in a town or city.<sup>8</sup> They represent a city's cultural entities whose local character is easily identifiable thanks to their being the stage and catalyst for human encounters. Many theorists agree that streets do not only allow movement but also social and artistic expression. Social and historical circumstances impact on how streets develop. It is this urban element that makes the daily life of cities and towns distinctive. Main streets serve a number of purposes and are typically found at city cores. These purposes or activities mark their identity and make them more easily recognisable within an urban street network. They are the cultural entities of cities that emanate the local character as built through relations between service providers and service users. Hence the urban critic Jane Jacobs' claim that 'If a city's streets look interesting, the city looks interesting; if they look dull, the city looks dull'.<sup>9</sup>

## THE HISTORICAL DEVELOPMENT OF BILEĆA STREET, TREBINJE

Trebinje is a city located on the border between Bosnia and Herzegovina, Montenegro and Croatia. Its climate is Mediterranean/Adriatic, thanks to its low altitude and the proximity of the Adriatic Sea on the one hand, and the high mountain ranges in the hinterland to the north on the other. Trebinje's urban development started under Ottoman rule in the 17th century, when its layout and identity were established. As the Venetians took control of Risan in 1684 and of Herceg Novi in 1687, the Turks retreated to their upcountry estates. According to historical sources, Trebinje had only one fortification incapable of protecting it from attacks, which forced the Turkish authorities to build a larger one. According to Korać, the fort, located on the bank of the Trebišnjica River, was built on the foundations of an old medieval town. Because the existing stronghold was small and easily penetrable, in 1706 Osman Pasha Resulbegović started works on a bigger one, better known as Banvir<sup>10</sup> (a name that fell into disuse after 1738; later it was also known as *ićesar*).<sup>11</sup> The existing fort was expanded, with more buildings added and the structure additionally fortified between 1706 and 1715, which gave the Trebinje Fortress today's appearance. It is likely Bileća Street formed in parallel with the works on the fortress beginning in 1706. Previously a stronghold of little import, Trebinje gained importance as it became the seat of a captaincy and an administrative, political, military and economic centre. The newly arriving Turks began settling not only inside the ramparts, but also in the so-called *Omanović mahala*, or neighbourhood, an area that corresponded to today's Krš district,<sup>12</sup> which the Trebinje *čaršija*, or bazaar, the commercial part of the town, developed from. This part of the town, named after the Omanović family, who were the first to settle in it, was initially the only neighbourhood outside the Trebinje Fortress. Over time, craft shops began opening in the neighbourhood, eventually forming the so-called *Gornja Čaršija*, or Upper Bazaar, very similar to the craft districts of Kujundžiluk in Mostar and Baščaršija in Sarajevo, albeit smaller. This was likely the location of the shops run by Mustafa-aga Ćatović of which Colonel Miloradović writes to Bishop Savatije Ljubibratić in his 1711 letter.<sup>13</sup> Alexander Hilferding, who visited Trebinje in 1857, wrote that the Trebinje bazaar was located outside the fort and that it had about 70 shops, in reference to the area along Bileća Street.<sup>14</sup> On both sides of the street stood rows of well-known coffee houses and general and craft shops in the style of oriental cities. It was the town's main commercial area and also the stage of all major events.



Figure 1. An Austro-Hungarian map showing Bileća Street

The arrival of the Austro-Hungarian occupation authorities brought changes to the area, with several modern buildings built in it; nonetheless, thanks to the use of natural materials, the style of the new constructions did not differ much from the adjacent oriental or local Herzegovinian houses. More changes in the vicinity of Bileća Street took place in 1910, when a part of the moat surrounding the Old Town was filled to destroy the breeding grounds of malaria-causing mosquitoes, as proposed by Dr. Rudolf Levi.<sup>15</sup> It was under Austro-Hungarian rule that Hugh Street formed near Bileća Street,



and the two came to constitute the town's principal thoroughfares, running to Dubrovnik Gate and Bileća Gate respectively.

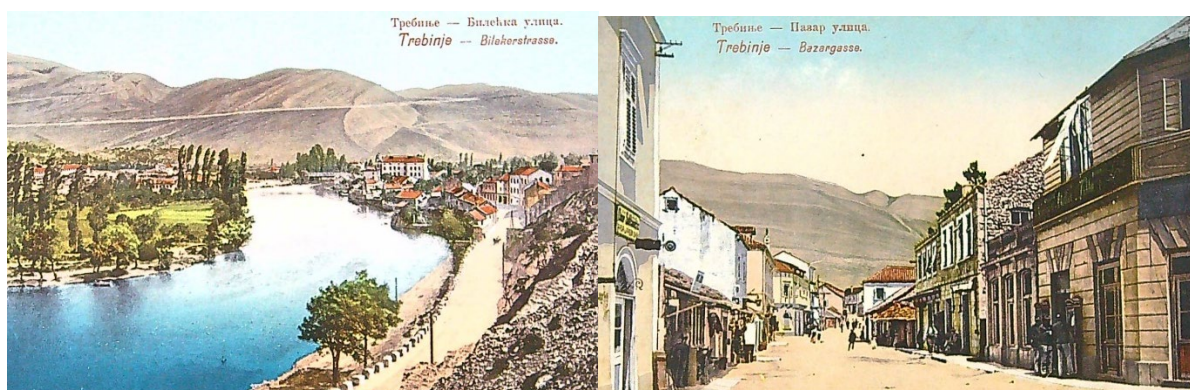


Figure 2. Postcard from the Austro-Hungarian period showing Bileća Street

Photographs and postcards dating back to the late 19th century and the first half of the 20th century are the best source of information on the appearance of Bileća Street. It was called *Bazargasse* at that time and it was the commercial centre of the town. Bileća Street ran from the main street, then called Tsar Street, which is today King Peter the Liberator Street, to Bileća Gate. Obviously, it owed its name to the fact it was a road leading out of town in the direction of Bileća. On both its sides Bileća Street was lined with general merchandise shops, craft shops and two-story buildings, the lower of which was used as a shop or workshop, and the upper as living quarters.

Today, we know how these buildings looked thanks to the photographic material remaining from the time of Austro-Hungarian rule, as well as the period of the Kingdom of Yugoslavia and the Socialist Federal Republic of Yugoslavia.



Figure 3. A photograph of Bileća Street taken from the upper tower of Bileća Gate in 1915. Most of the buildings shown were demolished to build a road in the mid-20th century

A photograph taken in 1956 shows the very much intact layout and building stock of Gornja Čaršija, i.e. the left and right sides of Bileća Street leading to Bileća Gate. The construction of the new road to Bileća required clearance of the part of the old bazaar on the right side of Bileća Street, an intervention that separated the Krš district from the rest of the town core. With the row of shops along



Bileća Street now broken, the commercial zone of the town ended at today's King Peter the Liberator Street.



Figure 4. Bileća Street on a 1956 geodetic map (left); an orthoimage of Bileća Street today (right)

The appearance of Bileća Street irretrievably changed in the second half of the 20th century, when the authorities endorsed the demolition of a number of buildings along the right bank of the Trebišnjica River, not taking into consideration their cultural and historical value. As claimed by the officials, the buildings were demolished primarily to make space to widen the street and due to problems with infrastructure, since the existing structures were either dilapidated or had problems with water supply and/or wastewater disposal. All buildings along the Trebišnjica River were torn down and streets built in their stead, as can be seen in the orthoimage in Figure 4 above.



Figure 5. Bileća Street today

### **Bileća Street urban patterns**

In addition to running spatial analysis – exploring the urban space of Bileća Street, this study required a historical interpretation of its urban life, with the aim of establishing its use patterns. This ensured not only analysis of the urban space, but also assessment of the additional dimension of the non-material value of the street use through history. The Time Machine is a project aimed at historic urban spaces, which seeks to map Europe's social, cultural and geographic evolution over time (<https://www.timemachine.eu>). It is a digitisation project that will allow Europe to turn its long history

and interculturality into an economic and social asset. 'The material culture of a particular locale might be utterly vanished due to changes (planned and unplanned) attributable to natural or human-made causes that have brought forth physical surroundings that differ from what historical agents experienced in the past.'<sup>16</sup> The obstacles posed by this type of research efforts concern finding authentic pictures of buildings; likewise, only very few photographs have been preserved from the time when Bileća Street existed to be used to complete the historical picture of the townscape of the former Gornja Čaršija. Many European cities are faced with the same problem as they look for answers to questions about living areas and urban landscapes. The lost space of Bileća Street can only be reconstructed with the help of geodetic data and photographs. A geodetic map of the town from 1956 provides accurate 2D spatial data for all buildings prior to their demolition. Most of these structures can be reconstructed in 3D with the help of photographs and postcards, especially the bird's eye view photographs taken from the surrounding hills and gate. Also of special importance are the publications of the Trebinje Photo Club titled *The Old Trebinje in Photographs*, which are records of the town's architecture, events and people.

Bileća Street connected the residential Krš district with the Old Town and was the commercial zone of Trebinje. At the end of Bileća Street, at the entrance to Trebinje, stood Bileća Gate, and along it, on both its left and right sides, stood rows of approximately 6-metre-wide craft and trade shops, whose layout and design is reminiscent of modular architecture. During the Austro-Hungarian period, the authorities built somewhat larger buildings, whose street fronts were 10 metres wide. Bileća Gate enclosed the town and Bileća Street, delineating this area for use by residents only. The old postcards show the buildings had one or two floors and were constructed from locally quarried gray Herzegovina stone used as masonry. Their flat facades were a combination of the Mediterranean and Central European styles. The use of stone slabs as the roofing material necessitated the gable construction. The street was fringed by the buildings and there were no yards or public green areas. The buildings had wooden awnings with merchandise displays underneath. All buildings had large windows on the ground floor, which increased the transparency of the street fronts. The street formed as a rim that separated the residential Krš from the Trebišnjica River. The plots were up to 100m<sup>2</sup> in size, with their average area at around 70m<sup>2</sup>. The street was a fairly straight line leading into the city, the perception of which was reinforced by the sloping terrain of the Krš district. Depending on the room, the size of the traditional windows varied between 60x80 cm and 80x110 cm, i.e., most often the width-height ratio was 1:1.4. A lot of the buildings had double-casement windows split horizontally into two parts, while those on the ground floor were true arches. The windows were installed from the inside of the stone frames and had outdoor wooden shutters. The shutters and the rest of the carpentry were painted blue. Some of the shops on Bileća Street had arched portals that served as the shop windows. The dominant colour was the Herzegovina stone gray, which stood in contrast to the blue woodwork of the original neighbourhood.

The streets leading into Krš are in the form of stairs 2-4 metres in width, with no space for motorised vehicle infrastructure. The terrain configuration of Krš made the area along Bileća Street suitable for commercial activity due to its position along the main route of access into the town.

### **Residents and the street life**

The physical aspect has an impact on the social aspect and activities in an area. The physical and social aspects influence the spiritual aspect because together they create memories and feelings in people as they follow their daily routines and engage in activities in a place. By analysing the physical remains of the street its appearance can be reconstructed, whereas its everyday life can be revived with the help of oral traditions and records of the memories of old Trebinje residents. The writings of local researchers and chroniclers, i.e. of local residents who were in love with Trebinje (Ljubiša

Andelić, Đorđe Odavić) allow one to visualise life in this part of the town in the past. Many photographs and postcards show clearly the names on the shops and coffee houses that were once located in this ‘bohemian’ neighbourhood that added charm to the town centre. There were a lot of shops and taverns on Bileća Street, and this is how we know about Mehmedaga Zubčević’s hardware shop, Omer Tičić’s pharmacy, Hivzija Galijatović’s haberdashery, and many others.<sup>17</sup> This part of Trebinje may be considered to have been its liveliest district because, besides the town market, it had the greatest circulation of people and goods.

Back in the 1980s, many residents of the Krš district pleaded for the revitalisation of Gornja Čaršija, together with its craft shops and all its distinctive features.

## CONCLUSION

This study focuses on Trebinje’s long-lost Gornja Čaršija, its social and cultural structure, as well as the daily life of its people and the changes it underwent through history. Bileća street and the Krš district, as the oldest parts of Gornja Čaršija, evoke nostalgia for the past, when they were an attractive, thriving part of the town core, with craft shops and live music heard from the old taverns visited by tourists who came mostly from Dubrovnik and Herceg Novi. Today, the Krš buildings are mostly derelict and Bileća Street partly destroyed following Trebinje’s urbanisation in the 1960s, which ruined one of its most attractive areas. As reported by the Trebinje Tourist Organisation, there are no organised tours around this part of the city because many of its residential buildings are dilapidated or have nothing to offer. The neighbourhood was slowly abandoned by its occupants in the second half of the 20th century due to lack of basic infrastructure, which is when it became a run-down urban settlement.

The Krš district and Bileća Street should be reconstructed with the assistance of cutting-edge technology, following the examples of cities across Europe, as much the historical data will permit it, based on cadastral maps and photographs. The area revitalisation would also require collecting old anecdotes and stories related to the street and the bazaar, the town’s former commercial hub, to pass on to the next generation. The buildings that have been preserved but whose ground-floor premises are vacant can be revitalised by accommodating in them modernised arts and crafts, while keeping the same old purposes and names. The existing buildings need to be restored to their original form, with the woodwork and facades repainted the same colours to give them their original appearance. This would attract tourists to this part of the city and facilitate life for the Krš dwellers because the area would be used daily. Thus far, 3D technology has not been used extensively in Bosnia and Herzegovina to revitalise building heritage. This method, which has become commonplace for historical cities, is locally used only very rarely. Bileća Street is an area with a sense of history and a space that has the potential to store memory. The buildings that cannot be fully restored in this way can be brought closer to tourists and the next generation with the help of modern technology. Creative revitalisation of the dilapidated Krš district and Bileća Street would not only preserve the distinctive ambience of this part of Trebinje, but it would also revive its old spirit, with its intangible heritage, old crafts and traditional way of life.

## NOTES

- <sup>1</sup> Interreg Europe. "Digital solutions in the field of cultural heritage." Accessed June 23,2022.  
<https://www.interregeurope.eu/find-policy-solutions/policy-briefs/digital-solutions-in-the-field-of-cultural-heritage>
- <sup>2</sup> Jasper Visser, "Strategies for a Heritage Revival in the Digital Age." In *Companion to European Heritage Revivals*, edited by Linde Egberts and Koos Bosma (Heidelberg, New York, Dordrecht and London: Springer Cham, 2014), 74.
- <sup>3</sup> Interreg Europe. "Digital solutions in the field of cultural heritage." Accessed June 23,2022.  
<https://www.interregeurope.eu/find-policy-solutions/policy-briefs/digital-solutions-in-the-field-of-cultural-heritage>
- <sup>4</sup> Van der Plaetsen, Piiter. "When the Past come to Life." In *Companion to European Heritage Revivals*, edited by Linde Egberts and Koos Bosma (Heidelberg, New York, Dordrecht and London: Springer Cham, 2014), 152.
- <sup>5</sup> Maria Economou, "Heritage in the Digital Age." In *Companion to Heritage Studios*, edited by William Logan, Máriéad Nic Craith and Ullrich Kockel (Oxford: Wiley Blackwell, 2015), 215.
- <sup>6</sup> Marilena Alivizatou-Barakou et al. „Intangible Cultural Heritage and New Technologies: Challenges and Opportunities for Cultural Preservation and Development." In *Mixed Reality and Gamification for Cultural Heritage*, edited by Marinos Ioannides et al. (New York: Springer International Publishing, 2017),130.
- <sup>7</sup> Gamzen Saygi and Marie Yasunaga. "The Digital Urban Experience of a Lost City. Using Mixed Methods to Depict the Historical Street Life of Edo/Tokyo." *Magazén 2*, no. 2 (2021): 193-224.  
<https://doi.org/10.30687/mag/2724-3923/2021/01/002>
- <sup>8</sup> Akkelies Van Nes, "The Heaven, the Earth and the Optic Array: Norberg-Schulz's Place Phenomenology and its Degree of Operationability." *Architecture and Phenomenology 3* (2008): 113-134.  
<https://doi.org/10.7480/footprint.2.2.690>
- <sup>9</sup> Jacobs, Jane. *The Death and life of Great American Cities* (New York: Random House, 1961),21.
- <sup>10</sup> Legend has it that it was at this place that a Trebinje Ban drowned in the Trebišnjica River
- <sup>11</sup> Vojislav Korać, *Trebinje – istorijski pregled II-period od dolaska Turaka do 1878. god, prvi dio* (Trebinje: Zavičajni muzej Trebinje, 1967), 218.
- <sup>12</sup> Vojislav Korać, *Trebinje – istorijski pregled II-period od dolaska Turaka do 1878. god, prvi dio* (Trebinje: Zavičajni muzej Trebinje, 1967), 209.
- <sup>13</sup> Vojislav Korać, *Trebinje – istorijski pregled II-period od dolaska Turaka do 1878. god, prvi dio* (Trebinje: Zavičajni muzej Trebinje, 1967), 218.
- <sup>14</sup> Aleksandar Giljferding, *Putovanje po Hercegovini, Bosni i Staroj Srbiji* (Sarajevo: Veselin Masleša, 1972), 42.
- <sup>15</sup> Kulturno-istorijski razvoj trebinjskog kraja od 10. vijeka do prve polovine 20. vijeka, Mijanović, Zoran, Accessed June 15,2022  
<http://muzejhercegovine.org/stalna-postavka-kulturno-istorijski-razvoj-trebinjskog-kraja-od-x-do-prve-polovine-xx-vijekal/>
- <sup>16</sup> Gamzen Saygi and Marie Yasunaga. "The Digital Urban Experience of a Lost City. Using Mixed Methods to Depict the Historical Street Life of Edo/Tokyo." *Magazén 2*, no. 2 (2021): 193-224.  
<https://doi.org/10.30687/mag/2724- /2021/01/002>
- <sup>17</sup> Selma Ćerimagić, *Trebinje i njegova okolina od 1878. do 1918. godine* (Sarajevo: Dobra knjiga, 2014), 200.

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