

## Article

# Potential of Former Mill Race Corridors for Urban Regeneration Strategies—A Case Study from Podolíneč in Prešov Region (Slovakia)

Juraj Illes <sup>1,\*</sup> , Katarina Kristianova <sup>2</sup>, Viera Joklova <sup>1</sup>  and Aida Shayegani <sup>1</sup> 

<sup>1</sup> Institute of Urban Design and Urban Planning, Faculty of Architecture and Design, Slovak University of Technology in Bratislava, Namestie Slobody 19, 812 45 Bratislava, Slovakia; viera.joklova@stuba.sk (V.J.); aida.shayegani@stuba.sk (A.S.)

<sup>2</sup> Center of Landscape Architecture, Faculty of Architecture and Design, Slovak University of Technology in Bratislava, Namestie Slobody 19, 812 45 Bratislava, Slovakia; kristianova@stuba.sk

\* Correspondence: juraj.illes@stuba.sk

**Abstract:** In the past, mill races were part of the urban structure of many towns in Slovakia. As regulated and artificially created waterways, they served to drive mills, rollers, or hammers. With the use of new sources of energy, they lost their functions, and most of them were dried, filled, or buried underground. In our research, we examine the former mill race corridor in Podolíneč (Prešov region, Slovakia) and its potential to contribute to urban regeneration strategies. The research steps included the following, namely 1. Identification of the route of the mill race corridor according to historical sources, 2. survey of its current state and its spatial preservation in the urban structure, 3. evaluation of the possibilities of its new uses, which could increase the quality and attractiveness of urban public spaces. The research results show that the fragments of the corridor of the extinct mill race are still identifiable in the urban fabric, and in the cadaster, they are in public ownership and suitable for new uses. The fragments of the corridor of the extinct mill race in Podolíneč represent a potential for strengthening the blue and green infrastructure, pedestrian and cycling greenways, and a potential for the presentation of cultural heritage values, which could contribute to the improvement of the qualities of the urban environment.

**Keywords:** mill race; blue and green infrastructure; greenways; cultural heritage; urban regeneration strategies; urban streams



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## 1. Introduction

The transformations of the relations between the urban environment and the phenomenon of water play a significant role in the urban regeneration strategies [1,2]. Well-known examples of urban transformations of city–water relations are the spectacular transformations of embankments and former ports in the environments of large cities [3–6]. From an urban planning point of view, the contact of water and the urban structure is an important space, “a materialized symbiosis of the bipolar quality of the urban and natural structure” [7] (p. 107). The interactions of natural and artificial elements create a strong phenomenon of genius loci, the identity of a place [8]. In the current urban regeneration strategies in the context of water, a specific emphasis is put on the environmental and ecological aspects of water in an urbanized environment, adaptation to climate change, and issues of blue and green infrastructure [9–14]. Many urban regeneration projects focus on the revitalization and re-naturalization of rivers, streams, and water bodies, on restoring the environmental and ecological functions of water in urbanized areas, and on rainwater retention [15–24]. The revitalization and opening of watercourses and the restoration and return of water elements into the urban structure represent a significant contribution to the quality of urban landscapes and public spaces, and have a significant place-making

potential [25–30]. Many works are devoted to the problem of opening covered streams or their parts [12,13,30–33]. Many urban streams have disappeared from the surface as a result of urban growth. Among the reasons was the gaining of space for the construction of roads and buildings or the use of stream water for the transport of wastewater. Spirn [34,35] points out that even buried streams can have important meanings for the identity of the place and the local community. Currently, efforts to uncover canalized streams and restore their beds are increasingly applied in urban blue–green space planning while recognizing the high ecological and social benefits of the opening, especially in supporting the resistance to the effects of climate change and the revival of the cultural ties with water [31].

In the past, along specific water channels, the mill races were part of the urban structure of many towns. They were historically built as artificial water channels or were created by regulating the original watercourses and their branches. The natural conditions, geomorphology of the terrain, hydrological conditions, and morphology of watercourses created various local prerequisites for the use of watercourses and for the construction of the mill races. The mill races were used as a source of energy to drive various kinds of mills, rollers, or hammers, that is, devices that used the power of the water flow through a water wheel to drive mechanisms enabling grinding, sawing, crushing ore and stone, forging iron, shaking and combing flax and hemp, or beating and felting woolen fabric into cloth. They enabled the use of water energy for the production of many material goods—flour, textiles, lumber, paper, or metal products. The mill races began to lose their importance with the invention of the steam engine and the use of coal, the accessibility of which also began to be ensured by the development of railway transport. Later, with the technological development of water turbines, some mill races and old mills were adapted for electricity production. However, they could not compete with other sources of electricity production, because they could not provide sufficient capacities. When the mill races lost their economic importance and became perceived as an obstacle to modern urban development, many of them were filled or buried and channeled underground [36–38]. In Slovakia, the changes in ownership, expropriation, and nationalization of mills, and the collectivization of land after the end of World War II and during the period of nationalization and industrialization of the national economy after 1948, as well as approaches towards anti-flood measures and water management in the second half of the 20th century, specifically contributed to the disappearance of the water mills and mill races [39].

Nowadays, society is once again aware of the benefits of the presence of water in an urbanized environment and, at the same time, of the importance of cultural heritage values. Various examples, specifically from towns from neighboring countries, with similar conditions as towns in Slovakia, show that the preservation and revitalization of the former mill races, new uses, and the presentation of the historical traces of their corridors are able to contribute to the urban regeneration strategies and increase the overall quality of the urban environment, as well as to the esthetics and attractiveness of public spaces.

Many examples show that the mill races play important roles in contemporary urban regeneration strategies. In Gdańsk (Poland), the Radunia Canal is involved in the contemporary life of the city; it flows under the modern shopping center and is presented in its central hall [40,41]. In Toruń (Poland), the preserved unique mill race system built by the Teutonic Knights in the 13th century contributes to the values for which Toruń is a UNESCO World Heritage City [42]. In Germany, the successful implementations of urban regeneration strategies, focusing on the transformation of brownfields into residential areas or into parks, such as, for example in Offenburg, Freital, or Erfurt, include the revitalization of the mill races [43–45]. Several examples show that also dry and filled corridors can be reused. The case of Plzeň (Czech Republic) shows that it is possible to return the water to the part of the dried and filled corridor of a former mill race [46]. In Prešov (Slovakia), a part of the dry and filled corridor serves as a cycling route [47]. The extinct mill races represent a hidden heritage, and its interpretation through various cultural activities is an opportunity to create awareness and promote a not well-known history as, for example, in Lancaster (UK) [48].

The revitalization of the corridors of the mill races represents challenges and opportunities for urban landscapes. Mill race corridors offer the potential for place-making, strengthening the ecosystem services of blue and green infrastructure, the potential for the creation of pedestrian and cycling routes, greenways, and recreational areas [49], and also possibilities of energy use [38]. The mill races represent historical and cultural heritage, and the presentation or interpretation of their values, even those that have disappeared, can enhance the quality and attractiveness of urban public spaces for both residents and visitors [36,37].

In this research, we examine the corridor of the former historical mill race in Podolíneč, a small town in the Prešov Region in Slovakia, and its potential to contribute to contemporary urban regeneration strategies. The main aim is to evaluate the possibilities of its revitalization, its new uses, or the possibilities to interpret its extinct heritage values.

## 2. Materials and Methods

### 2.1. The Study Area

Podolíneč is a small town located in the northwestern part of the Prešov Region of Slovakia, in the Stará Ľubovňa District (Figure 1).



**Figure 1.** Prešov region in the Slovak Republic and the location of the town of Podolíneč.

The Prešov Region is located in the northeastern part of Slovakia. It borders Poland in the north and Ukraine in the east. It is one of the eight Slovak administrative regions. It has an area of 8972.8 km<sup>2</sup> and 808,090 inhabitants (as of 31 December 2023) [50]. It is administratively divided into 13 districts. The region has a predominantly mountainous landscape of the Eastern and Western Carpathians with an outcrop of the Eastern Pannonian Basin in the southern part. Due to the different altitudes of highlands and lowlands, the region's northern temperate-continental climate is divided into three climatic areas—cold, moderately warm, and warm. The upper sections of the main rivers of Hornád, Torysa, Topľa, Ondava, Laborec, and Poprad are located in the territory of the Prešov Region. The Poprad and Dunajec rivers form a part of the border with Poland and belong to the drainage area of the Baltic Sea. There are 665 municipalities in the region, 23 of which have the status of a town (Bardejov, Giraltovce, Hanušovce nad Topľou, Humenné, Kežmarok, Levoča, Lipany, Medzilaborce, Podolíneč, Poprad, Prešov, Sabinov, Snina, Spišská Belá, Spišské Podhradie, Spišská Stará Ves, Stará Ľubovňa, Stropkov, Svidník, Svit, Veľký Šariš, and Vranov nad Topľou, Vysoké Tatry). The administrative center of the region is Prešov. With 82,286 inhabitants (as of 31 December 2023), it is the third-largest town in Slovakia [50].

Podolíneč developed in the Poprad Basin, in the valley of the river Poprad. The first written record of Podolíneč dates from 1236. The Slavic settlement, destroyed in 1241 and 1285 during the Mongol invasion of Hungary, grew fast and received city privileges in 1292 for welcoming German settlers from Silesia. In 1412, it obtained the status of a free royal town [51]. Today, the municipality with a population of 3055 (as of 31 December 2023) keeps its town status [52]. Its historic center is formed around a triangular main square surrounded by late Renaissance burgher houses, with a centrally placed early Gothic Roman Catholic church and Renaissance bell tower. It is surrounded by a partially preserved set of fortification walls. The historic center was declared a monument reserve in 1991 due to its historical values [53].

The mill race, built outside the fortification walls via the regulation of the arm of the river Poprad, powered a mill and served as a fortification moat. This area was an important part of the town, concentrating the economic activities that required water use. The mill race was dried and filled during the 2nd half of the 20th century [53].

In our research, we examined the potential of the remnants of the mill race corridor for urban regeneration strategies. The research included archival research to identify the route of the historical mill race according to historical sources and on-site research to survey the current state of the mill race corridor in the current urban structure as a basis for the evaluation of its potential for urban regeneration strategies.

## 2.2. Methodological Steps of the Research

The research consisted of 3 methodological steps:

1. Identification of the route of the mill race corridor from historical sources;
2. Survey and analysis of the current state of the mill race corridor in the current urban structure;
3. Evaluation of the potential of the mill race corridor for urban regeneration strategies—formulation of ideas for its possible use and recommendations for practice.

### 2.2.1. Identification of the Mill Race Corridor from Historical Sources

The first step of the research was the identification of the route of the mill race corridor from historical sources, in different historical periods. This first stage aimed to find out the gradual transformations of the mill race corridor in Podolíneč in the past. In this step, primarily historical maps were used, but also literary and visual sources (archival documents, historical engravings, historical photographs).

The important sources were the military maps of the Habsburg Empire and historical cadastral maps: the First Military Survey of Königreich Ungarn (1782–1785), the Second Military Survey of Hungary (1819–1869), the Third Military Survey of the Habsburg Empire (1869–1887), and maps of the original cadastral record from 1871 (reambulated in the 1930s). Other map sources from later periods included topographic maps 1:25,000 (1955), 1:5000 (1958), 1:10,000 (1964), and 1:10,000 (approx. 1990). Online available map sources for Arcanum maps were used. This stage of the research was based on research in the Central Archive of Geodesy and Cartography and Cadastre of the Slovak Republic (ÚAGK), in archival sources of the State Archive in Prešov, including its workplaces, in municipal archives, and the Archive of the Monuments Board of the Slovak Republic and archives of its regional offices.

The research was also based on sources from the local community, local monographs, historical photographs, postcards, as well as stories and memories shared by local interest groups, e.g., on social networks.

### 2.2.2. Survey and Analysis of the Current State of the Mill Race Corridor in the Current Urban Structure

In the second step of the research, the state of the current existence of the mill race corridor in the urban structure of Podolíneč was examined. For the verification of its current existence in the urban structure, current map sources, cadastral maps, and orthophoto



maps were used, available online through Geoportal, which provides a database for the geographic information system and is part of the information system created and maintained by the Geodesy, Cartography, and Cadastre Authority of the Slovak Republic. The information about the state of the current existence of the mill race corridor was collected from the Basic Data Base for the Geographic Information System (ZBGIS). Other sources included Mapy.cz and Google Maps with the Streetview service. Publications and articles in the daily press, local periodicals, or posts on social networks following the current events in the town, current land-use planning strategies, land-use planning documentation, urban master plans, and documents on the principles of the protection of monument areas were examined.

For the assessment and detailed analysis of the current state of the mill race corridor in the urban structure, on-site research was crucial. During the on-site visit, the entire route of the mill race corridor was examined and documented via photographs.

Based on the survey, the following aspects were analyzed:

- degree of spatial preservation of the corridor in the urban fabric;
- degree of preservation of the technical objects along the corridor (e.g., mills, weirs, modifications of banks, etc.);
- legibility and ownership of corridor parcels in the parcel fabric of the current cadastral record;
- current and planned functional uses along the corridor in the urban fabric.

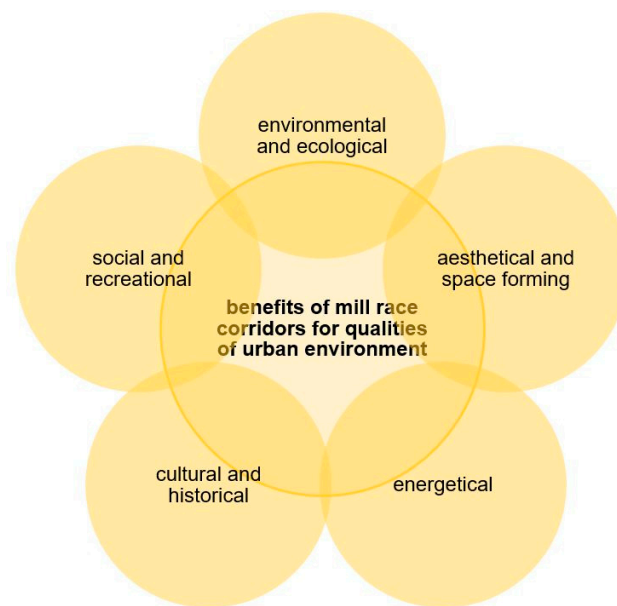
The analyses of these aspects are important for the purposes of evaluating the various possibilities of using the mill race corridor and its potential for urban regeneration strategies.

### 2.2.3. Evaluation of the Potential of the Mill Race Corridor for Urban Regeneration Strategies

The corridor of the mill race in Podolíneč, which was analyzed in the previous stage in terms of the degree of its preservation, the preservation of technical objects, the nature of ownership relations, and the conditions of the current and planned functional use in the urban structure, was in this stage evaluated in terms of its potential for various possibilities of its use and valorization. The evaluation of its potential enabled the suggestions of conceptual ideas for the possible use of different parts of the mill race corridor and the formulation of recommendations for the local government to protect and valorize this heritage.

The evaluation of the potential of the heritage of mill races for the current urban regeneration strategies was based on the assumptions that mill races—those preserved, but also the traces of those that have disappeared—can mean various benefits for the urban structure and urban public spaces. These assumptions relied on the concepts of urban green and blue infrastructure and its ecosystem services [54,55] and the concepts of heritage interpretation and valorization [56–59]. The benefits of urban green and blue infrastructure and its ecosystem services, including the wide range of provisioning, regulatory, and supporting services, covering the ecological and environmental aspects up to the benefits of cultural non-material services contributing to human well-being, are described and assessed by a large number of publications [60–64]. The benefits generated by heritage interpretation and valorization can be both direct and indirect, derived from the satisfaction of its direct users and the whole community. They are of an economic and social nature, influencing the increase in tourism, trade, and services or creating a sense of a common identity and place attachment [65,66]. The possibilities of the application of these conceptual approaches—the green infrastructure and the heritage interpretation and valorization approach for formulating suggestions and conceptual ideas for the revitalization and new uses of mill race corridors, as well as the amount and variety of the gained benefits—are mainly influenced by the degree of the preservation of the mill race corridors. It is possible to strengthen the green and blue infrastructure functions of the preserved mill race corridors or their preserved fragments, which can bring multiple benefits of various types and forms of green and blue infrastructure into the urban environment. While the continuous lines

of mill race corridors can form greenways or biocorridors, the fragmented parts can be used for small-scale elements of urban green and blue infrastructure, for example, rain gardens or bioswales. When it is impossible to find tangible remnants of mill race corridors in the urban fabric, the techniques and methods of intangible heritage interpretation can help commemorate the extinct heritage values [48]. An overview of the potential benefits resulting from the use and valorization of the mill race corridors, contributing to the qualities of the urbanized environment and the quality of life in urban settlements, is given in Figure 2.



**Figure 2.** An overview of the possible benefits of mill race corridors for the overall quality of the urban environment.

### 3. Results

#### 3.1. Identification of the Mill Race Corridor in Podolíneč from Historical Sources

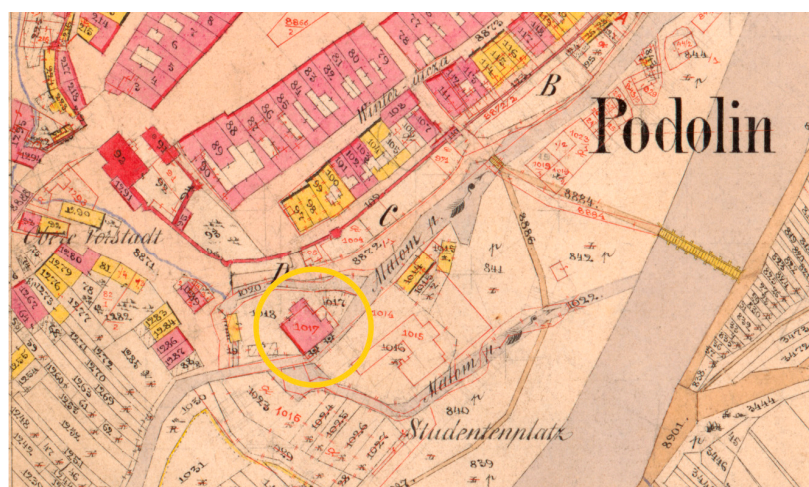
The map of the First Military Survey of the Hungarian Kingdom (1782–1785) captures the existence of the mill race in Podolíneč, in the period of the end of the 18th century [67]. It shows that the mill race developed from the originally natural arm of the river Poprad. The map shows the location of the mill and the route of the small stream flowing around the fortifications (Figure 3). The map of the Second Military Survey of Hungary (1819–1869), which was carried out on the territory of the current Prešov Region from 1819 to 1827 [68], shows the mill race including the weir on the river Poprad and the mill (Figure 4). The mill race is depicted on the map of the Third Military Survey of the Habsburg Empire (1869–1887), which was carried out on the territory of the current Prešov Region from 1875 to 1876 [69]. The most useful source, depicting the details of the mill race corridor and details of the mill building, including the number of wheels is the cadastral map of the original cadastral record from 1871, reambulated in the 1930s [70]. It shows the corridor of the mill race in its last functional form in the first half of the 20th century (Figure 5).



**Figure 3.** The mill race and location of the mill (M) on the map of the First Military Survey. The mill race developed from the originally natural arm of the river Poprad [67].



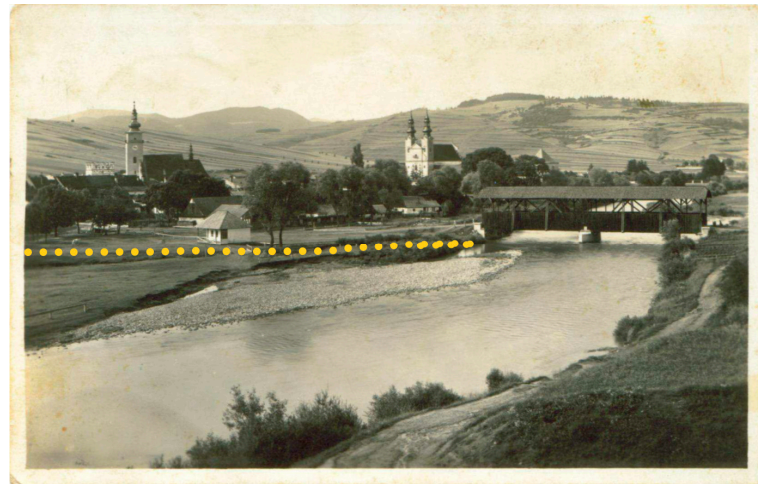
**Figure 4.** The mill race, location of the mill (M), and weir (W) on the river Poprad, depicted on the map of the Second Military Survey [68].



**Figure 5.** Detail of the mill race and its branches and the building of the mill, with two wheels, on the map of the original cadastral record from 1871, reambulated in 1930 [70] (map no. 20).



Photographs from the period of the first half of the 20th century have also been preserved (Figure 6).

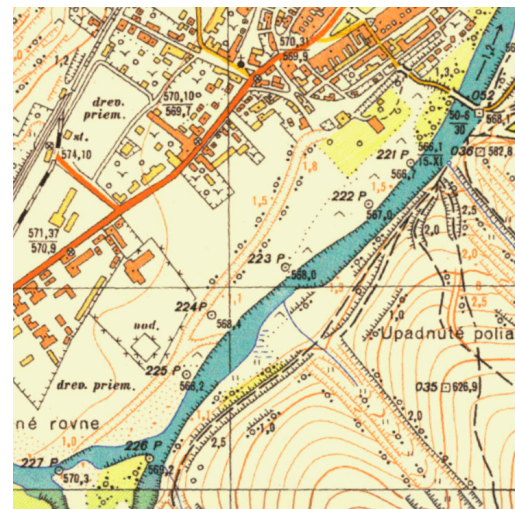


**Figure 6.** View of the town from the river from the south, 1940s [53]. In the foreground, the branch of the mill race flowing into the river Poprad is highlighted.

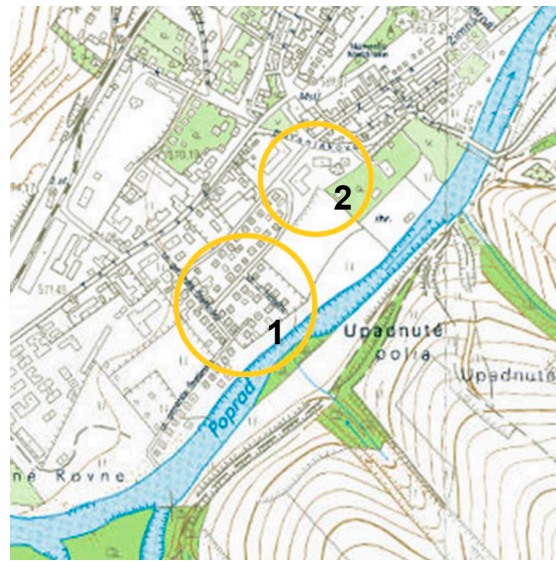
On the topographic map from 1955, the corridor of the mill race is depicted with a water flow. One branch of the mill race, located near the mill and flowing into Poprad, has disappeared [71] (Figure 7a).



(a)







**Figure 8.** Development of family houses (1) and block of flats (2) in the 1970s and 1980s interrupted the mill race corridor depicted on the Basic Topographic Map from 1990. The mill has not been preserved [75].

### 3.2. Survey and Analysis of the Current State of the Mill Race Corridor in the Current Urban Structure

The survey and analyses of the current state show that the mill race corridor is partially preserved only in the form of fragments of parcels in the current cadastral record [76]. They are under public, municipal, or state ownership (Figure 9). The mill, weir, inlet, and outlet technical objects are not preserved. The public ownership and functional uses determined by the current land use plan [77]—green spaces and civic and commercial amenities—support the possibility of using the potential of the fragments of the corridor for urban regeneration strategies. The principles of the protection of the monument reserve [53] also set the requirement to preserve the corridor in the buffer zone (Figure 10) as an open space to keep the possibility of commemorating the mill race.

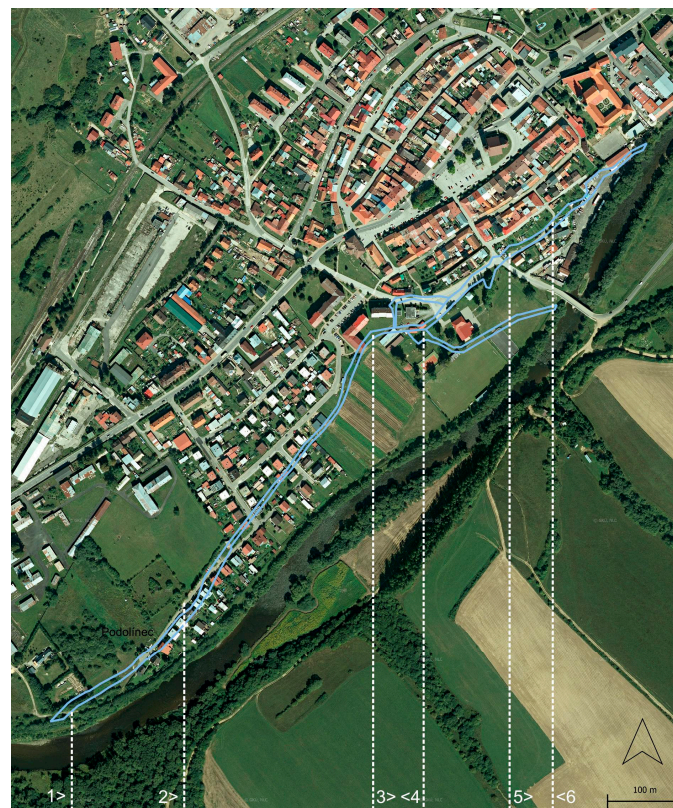


**Figure 9.** Corridor of the extinct mill race in Podolínec on the current cadastral map with the location of the place of the extinct mill and fragments of parcels of the mill race corridor under public ownership still identifiable in the current real estate cadaster.



**Figure 10.** Analysis of the current ownership relations along the corridor of former mill race and analysis of the current functional uses in the urban structure along the corridor.

The corridor of the former mill race was examined during the on-site visit, and the accessible parts were documented via photographs (Figure 11). They capture the different types of the environment along the route and show the spatial possibilities for applying modifications that could commemorate the mill race and improve the quality of public spaces (Figures 11 and 12).



**Figure 11.** The corridor of the extinct mill race in Podolíneč on the orthophoto map [78]. The orthophoto map allows observation of the occurrence of accompanying vegetation structures. The places documented by photographs (1)–(6) taken during the on-site survey are marked on the map.





**Figure 12.** Photos capturing different types of environments along the corridor of the extinct mill race. The route leads from the area of the former inlet of water to the mill race (1), along the road through the residential zone of family houses (2), through the public spaces of blocks of flats (3,4) to the area in direct contact with the historical center of the city and monument protection zone (5,6).

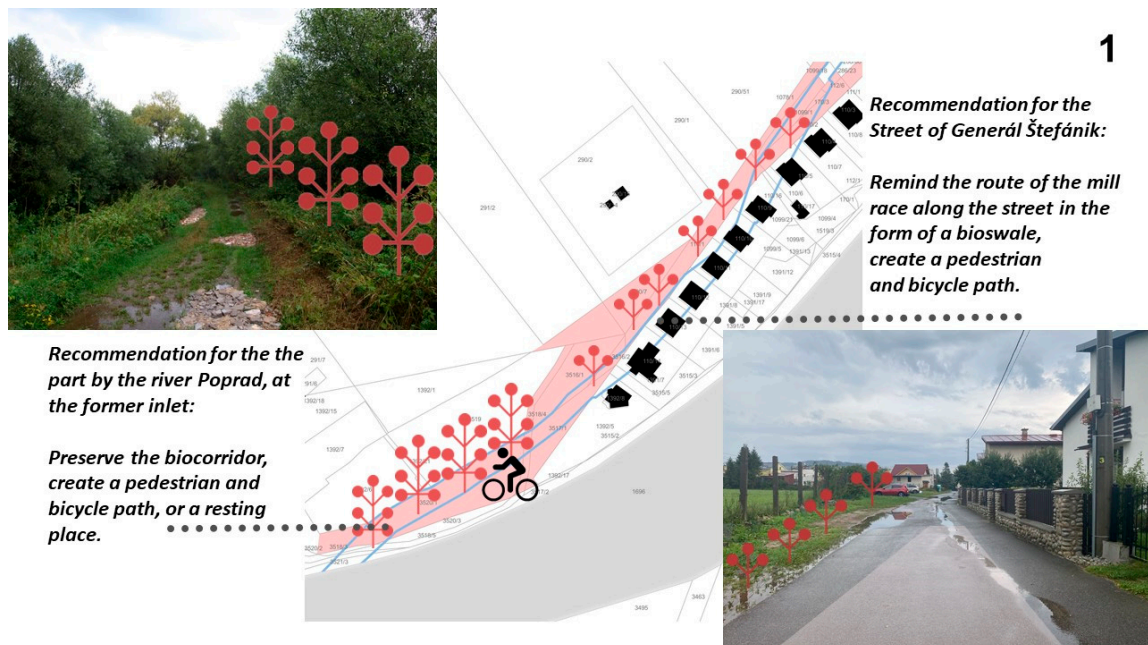
### 3.3. Evaluation of the Potential of the Mill Race Corridor for Urban Regeneration Strategies

Based on the survey and the analyses of the current state, the three parts of the corridor of the extinct mill race were identified, which, from the point of view of ownership relations and the spatial and functional conditions of the urban structure, can be used for strategies of urban regeneration:

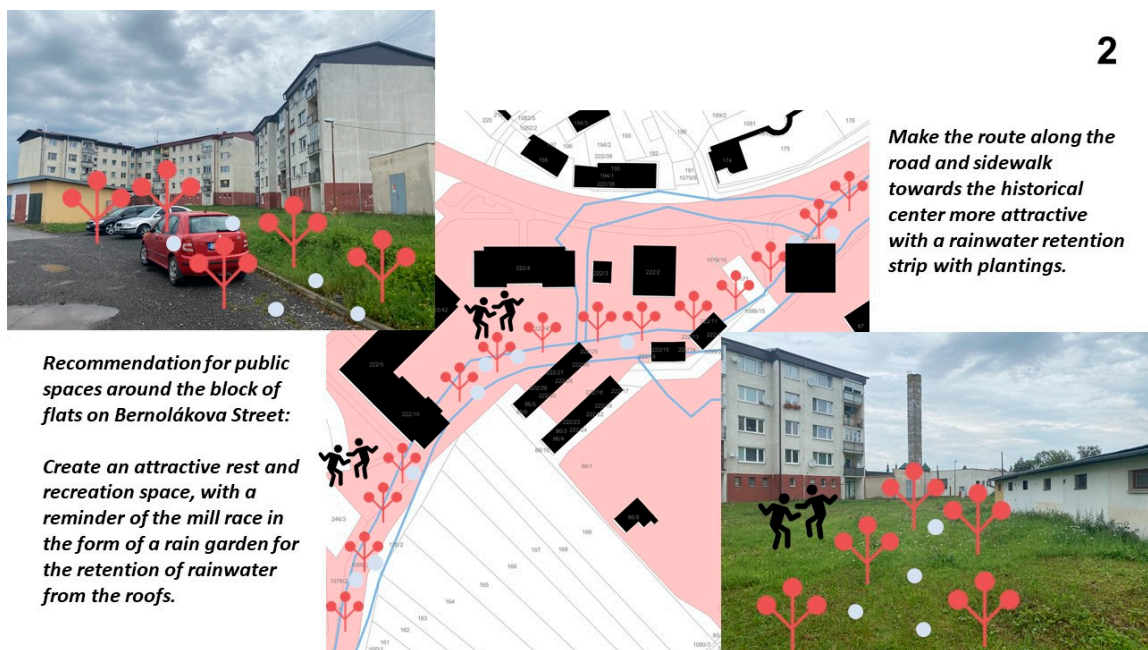
1. the part by the river Poprad, at the former inlet to the mill race, continuing along the Street of Generál Štefánik, in the neighborhood of family houses (Figure 13);
2. the part forming public spaces around the blocks of flats and along Bernolákova Street (Figure 14);
3. the part in contact with the historical center of the town, south of Kláštorňá Street (Figure 15).

These three parts were selected according to the analyses of the current state because they are the parts where the fragments of parcels of the former mill race corridor are preserved (Figure 9). These preserved fragments of parcels are under public ownership (municipality and state). They are surrounded by public spaces also under municipal or state ownership (Figure 10). The ownership rights are an important factor that allows the municipality to implement new ideas for using and presenting the heritage of the mill race corridor. The other parts along the route of the former mill race corridor are not suitable and not usable for redesign and revitalization interventions because they are under private ownership, built up by family houses and buildings of small industries. In these parts, the

parcels of the former mill race corridor are not identifiable in the current cadastral record (Figure 10).



**Figure 13.** Evaluation of the urban regeneration potential and recommendations for the first part of the former mill race corridor by the river Poprad and along the Street of Generál Štefánik in the neighborhood of family houses.



**Figure 14.** Evaluation of the potential and recommendations for the public spaces around the blocks of flats and along Bernolákova Street.





**Figure 15.** Evaluation of the potential and recommendations for the part in contact with the historical center of the town, south of Klášterná Street.

For the three selected parts, recommendations were developed for the different possibilities of using the hidden potential of the heritage of the mill race, which could contribute to the urban regeneration strategies and the quality of public space improvement. The on-site investigation and photographs (Figure 12) document that the public spaces today are of low quality, do not offer a diversity of uses, and do not encourage people to meet and interact, socialize, rest, play, or participate in sports. The conceptual ideas for redesigning these public spaces (Figures 13–15) suggest possibilities for how to increase their quality and attractiveness, diversity of uses, place attachment, and local identity through valorizing the heritage of the former mill race corridor and implementing the current approaches of green and blue infrastructure planning. The conceptual ideas and recommendations reflect the specific conditions of the surrounding urban setting, land-use plan, and monument protection requirements and try to offer a variety of uses that could respond to the community's needs. The suggestion of various possibilities and variety of options can serve as a preliminary starting point for discussions and participatory processes with the local community, informing about the existence of the mill race heritage and stimulating the imagination of the possibilities of how to present or interpret the heritage in public spaces. Discussion and participation can verify the expectations and needs of the community, affirm their shared rights to the public spaces, and serve as a base for design guidelines and planning criteria or for preparing architectural design competitions for implementing these ideas.

### 3.3.1. Evaluation of the Potential and Recommendations for the Part by the River Poprad, at the Former Inlet, and Along the Street of Generál Štefánik

The recommendation for the site by the river Poprad, near the place of the former weir and inlet of water to the former mill race, is to preserve the biocorridor along the river, support the natural character of the area, create a pedestrian and cycle path, or a rest area, with a reminder of the mill race history. Along the Street of Generál Štefánik, it is possible to commemorate the route of the mill race in the form of a vegetated bioswale for soaking up rainwater and being planted with native plants supporting biodiversity (Figure 13). These design ideas could contribute to the urban regeneration strategies by valorizing the

mill race heritage, strengthening the ecosystem services of green and blue infrastructure, and supporting the greenway walking and cycling connections and recreation activities.

### 3.3.2. Evaluation of the Potential and Recommendations for the Public Spaces around the Blocks of Flats and Along Bernolákova Street

The currently neglected and unused public spaces around the block of flats on Bernolákova Street need transformation to create an attractive relaxation and recreation area for residents, equipped with a children's playground, benches, or other elements according to the residents' needs. The recommendation for the revitalization is to remind people of the mill race, for example, in the form of a rain garden, for the rainwater retention from the roofs of apartment buildings and garages. For the design of the public spaces around the block of flats, usually, typified products of children's playgrounds, benches, and outdoor equipment are used. The mill race presentation in the space can strengthen the specific identity of the place and the sense of the inhabitants' place attachment.

The presentation of the mill race along Bernolákova Street, following the corridor of the former mill race towards the historical center, can be made more attractive with accompanying planted bioswale. Also in this part of the corridor of the former mill race, it is possible to check the possibilities for creating a cycle path (Figure 14).

### 3.3.3. Evaluation of the Potential and Recommendations for the Part in Contact with the Historical Center of the Town, South of Klášterná Street

In contact with the historical core of the town, the corridor of the extinct mill race is preserved in the form of an open green space, with exceptional space-forming qualities and views. It is necessary to preserve this open space and not to build it up, in order to preserve the views towards the historical center. It is suitable to maintain the use of the space via current forms of community gardens, with low plantings. It is also possible to consider the return of water to the corridor, for example, in the form of rainwater retention. Since the area is located near the historical center visited by tourists, it would be suitable to remind them of the nonexistent mill race via an information board (Figure 15).

The Principles of the Protection of the Monument Zone also set out the demand to protect and not build up this open space to preserve the possibilities of reminding people of the heritage of the mill race. Unfortunately, this significant location cannot be connected with the river in continuation along the route of the former mill race to the place of the outlet. This part of the corridor was sold to a private owner and built up in the past period when the municipality and community were unaware of the values of the mill race heritage.

## 4. Discussion

The evaluation of the potential of the heritage of the mill races for the current urban regeneration strategies is based on the assumptions that the mill races—those preserved, but also the traces of those that have disappeared—can mean various important benefits for the urban structure and urban public spaces: environmental and ecological, social and recreational, cultural–historical, esthetical and space-forming, or energetic. The amount and variety of these benefits are mainly influenced by the degree of preservation of the mill races and their corridors.

The mill races preserved with the flow of water represent a valuable cultural and technical heritage, important elements of the green and blue infrastructure forming green corridors, greenways, cycling and walking tracks, connecting urban settlements with the landscape, and providing recreational opportunities, or in some cases, also sources of electric energy provision. The revitalization of the mill races, and opening and daylighting their covered parts offer great potential for the urban regeneration strategies. Many examples from the small towns in the neighboring regions show the values of the mill races and the contributions of their revitalization to the urban regeneration strategies. In Litovel (Czech Republic), called “Moravian Venice,” the mill race flowing through the main square and under the town hall tower is the main attraction of the town [79]. The revitalization and restoration of the ecological functions and water quality in the mill races in Prostějov

and Chrudim (Czech Republic) were highly appreciated by the residents [80]. In Slovakia, long-term efforts are underway to revitalize the mill race in Košice [81].

The case of Podolíneč studied in this research represents an example of the extinct mill race, preserved only in the form of the dry and filled fragments of its corridor. Several studies and successful implementations show the possibilities of and approaches to how to reuse and valorize the remnants of the mill race corridors in the urban regeneration strategies [37,46,47,82,83]. In the cases where the mill races have been preserved only in the form of dry corridors and their fragments, it is possible to check the possibilities of reviving the water, as in the case of Plzeň [46], or options of creating greenways and green walking and cycling routes, as, for example, in the cases of Veľký Šariš or Prešov (Slovakia) [47,82]. The preserved parts of the spatial corridors of the former mill races, with accompanying vegetation, can form lines of biocorridors and a green skeleton of connections of the urban environment with the landscape. The relics of mills and technical objects carry cultural heritage values and can be presented in various forms along cycling or walking routes [37]. When only some parts or fragments of the spatial corridor of the former races are preserved, it is possible to verify their use for the small elements of green and blue infrastructure [83], for example, for rainwater retention. The fragments of the corridors of the former mill races can be presented in public spaces as elements that make the space attractive and recall its memory, cultural–historical, and technical values, as, for example, in the study of the courtyard of Krnov Castle [83].

These approaches inspired the examination of the mill race corridor in Podolíneč and its potential for new uses, which could contribute to the urban regeneration strategies. The research results show that the fragments of the corridor of the extinct mill race are still identifiable in the urban fabric of Podolíneč and the cadaster, and they are under public ownership. The research also shows that the evaluation of the possibilities of new uses of fragments needs to assess and reflect the specifics of the individual spatial and functional characteristics of the site and the surrounding urban landscape setting. While in the first part of the corridor, the natural character of the riverbank site supports recommendations to strengthen the biocorridor and greenway functions, in the second part around the block of flats, the emphasis is placed on using the mill race corridor to support the identity of active and attractive public spaces for residents, with the application of the current trends of rainwater retention. The recommendations for the third part reflect the specifics of the protected monument zone, with expected visits by tourists. The approach of the return of water in modified forms of water retention and the approach of heritage values' presentation and interpretation, which resonate in the proposed recommendations for all the parts of the former mill race, are based on the concepts of contributions of urban green and blue infrastructure and heritage valorization [54–59] to the urban regeneration strategies. The option of the regeneration of water flow is not recommended. The analyses show that the conditions of the current state of the mill race corridor in the urban fabric do not allow this option. When evaluating the benefits of mill races and issues of their regeneration, it is necessary to discuss the aspects of their impacts on the fluvial system of the water courses and aquatic organisms. Small dams and weirs used to divert and regulate the flow change the streambed and the inorganic and organic material transfer, and can act as a migration barrier for fish. The functional mill races need professional care for their flows and their maintenance is necessary, as well as regular revitalization interventions to improve their ecosystem functions.

The research tries to contribute to the raising of awareness about the values of the mill races and their corridors and the possibilities of their use in accordance with contemporary needs. Historically, the mill races in towns were mostly located on the edge of the urban structure, in industrial zones, and in the recent past, they were not the object of protection or valued for their values. The research results, acquainting the citizens of Podolíneč with the races, many of whom do not know about the historical heritage of the mill race, could initiate discussions and participatory processes on how to use this heritage and improve the quality of the public spaces. The research can serve as an example for other municipalities

to consider the potential of the mill race corridors, their spatial protection and preservation for possible public uses, and avoid the thoughtless sales of their parts as in the case of Podolíneč or Prešov.

Many communities have become aware of the values that they have lost due to the disappearance of the mill races, and they try to remember this heritage in different ways [34,35]. In some cases, only the names and routes of streets remind people of the corridors of the mill races (Mill Street, Tannery Street, etc.). Even when the remnants of the mill race corridors have been built over, it is still possible to remember their heritage through presentation and interpretation in various forms, tangible or intangible, including virtual applications that educate about the lost cultural heritage [48,84].

## 5. Conclusions

The mill races are evidence of the civilizational and technical development and belong to a diverse and rich cultural heritage including their material and immaterial forms. The research draws attention to the potential of the former mill race corridors to improve the quality and attractiveness of urban public spaces, create pedestrian and cycling connections and greenways, and be significant elements of green and blue infrastructure, which is becoming a meaningful requirement in the context of the adaptation of the urban environment to climate change. The research contributes to the considerations of how to preserve the fragments or the cultural footprint of the mill races and how to present and use them, including their extinct and intangible values. The evaluation of the potential of the heritage of the mill races creates possibilities for the formulation of conceptual ideas and recommendations for local governments, how to protect and valorize this heritage, and how to use it in urban regeneration strategies.

The shortcomings of this study are that the research focused only on the case of one mill race. The research of several cases would allow a deeper insight into the issue, and the methodological approach, applied to the assessment of the current state and the possibilities of the use of the mill race corridor, was only from the perspective of architecture and urban and landscape planning, and aimed at evaluating the spatial and functional prerequisites for the use of the corridor in the urban structure. Further studies would benefit from the research on several cases, including cases with the assessment of the possibilities of restoring the water flow, and with applications of the interdisciplinary aspects of evaluation.

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## References

1. Kaushal, S.S.; McDowell, W.H.; Wollheim, W.M.; Johnson, T.A.N.; Mayer, P.M.; Belt, K.T.; Pennino, M.J. Urban Evolution: The Role of Water. *Water* **2015**, *7*, 4063–4087. [\[CrossRef\]](#)
2. Zingraff-Hamed, A.; Bonnefond, M.; Bonthoux, S.; Legay, N.; Greulich, S.; Robert, A.; Rotgé, V.; Serrano, J.; Cao, Y.; Bala, R.; et al. Human–River Encounter Sites: Looking for Harmony between Humans and Nature in Cities. *Sustainability* **2021**, *13*, 2864. [\[CrossRef\]](#)
3. Carta, M.; Ronsivalle, D. *The Fluid City Paradigm: Waterfront Regeneration as an Urban Renewal Strategy*, 1st ed.; Springer: Cham, Switzerland, 2016; 170p.
4. Joklová, V.; Furdík, J. Nábrežné stratégie v Bratislave-Petržalke. *ALFA* **2015**, *20*, 58–67.
5. Smith, H.C.; Ferrari, M.S.G. *Waterfront Regeneration: Experiences in City-Building*, 1st ed.; Routledge: London, UK, 2012; 256p.



6. Yıldız, R.; Şenlier, N.; Güzel, B.I. Sustainable urban design guidelines for waterfront developments. In Proceedings of the 2nd International Sustainable Buildings Symposium, Ankara, Turkey, 28–30 May 2015; pp. 487–494.
7. Bašová, S. Urbánne väzby historického jadra mesta a nábrežia. In Proceedings of the Bardkontakt: Problematika Mestských Pamiatkových Centier, Bardejov, Slovakia, 23–24 August 2011; pp. 107–113.
8. Vitková, L. Sila génia loci. *Urbanita* **2014**, *26*, 10–13.
9. Pochodyła, E.; Glińska-Lewczuk, K.; Jaszczak, A. Blue-green infrastructure as a new trend and an effective tool for water management in urban areas. *Landsc. Online* **2021**, *92*, 1–20. [\[CrossRef\]](#)
10. Giannakis, E.; Bruggeman, A.; Poulou, D.; Zoumides, C.; Eliades, M. Linear Parks along Urban Rivers: Perceptions of Thermal Comfort and Climate Change Adaptation in Cyprus. *Sustainability* **2016**, *8*, 1023. [\[CrossRef\]](#)
11. Chou, R.-J. Achieving Successful River Restoration in Dense Urban Areas: Lessons from Taiwan. *Sustainability* **2016**, *8*, 1159. [\[CrossRef\]](#)
12. Jutrović, M.; Tomić Reljić, D.; Zovko, M.; Bubalo Kovačić, M.; Pereković, P.; Kamenečki, M. Potential for Applying Nature-Based Solutions to Urban Waterways: The Case Study of Medveščak and Črnomerec Streams in the City of Zagreb, Croatia. *Sustainability* **2023**, *15*, 9959. [\[CrossRef\]](#)
13. Gašparović, S.; Sopina, A.; Zeneral, A. Impacts of Zagreb's Urban Development on Dynamic Changes in Stream Landscapes from Mid-Twentieth Century. *Land* **2022**, *11*, 692. [\[CrossRef\]](#)
14. Jiang, Y.; Huang, J.; Shi, T.; Wang, H. Interaction of Urban Rivers and Green Space Morphology to Mitigate the Urban Heat Island Effect: Case-Based Comparative Analysis. *Int. J. Environ. Res. Public Health* **2021**, *18*, 11404. [\[CrossRef\]](#)
15. Baker, L.A.; Shanahan, P.; Holway, J. Principles for Managing the Urban Water Environment in the 21st Century. In *The Water Environment of Cities*, 1st ed.; Baker, L.A., Ed.; Springer: New York, NY, USA, 2009; pp. 275–289.
16. Booth, D.B.; Bledsdoe, B.P. Streams and Urbanization. In *The Water Environment of Cities*, 1st ed.; Baker, L.A., Ed.; Springer: New York, NY, USA, 2009; pp. 93–123.
17. Hill, K. Urban Design and Urban Water Ecosystems. In *The Water Environment of Cities*, 1st ed.; Baker, L.A., Ed.; Springer: New York, NY, USA, 2009; pp. 141–170.
18. Jurik, L.; Pokrývková, J. Zadržovanie vody v mestách—Teória a praktické riešenia. *Zivotn. Prostr.* **2018**, *52*, 42–48.
19. Just, T. Přírodě blízké úpravy vodních toků v intravilánech a jejich význam v ochraně před povodněmi. *Ochr. Přírody* **2010**, *6*, 15–17.
20. Just, T. *Ekologicky Orientovaná Správa Vodních Toků v Oblasti Péče o Jejich Morfologický Stav*, 1st ed.; Agentura Ochrany Přírody a Krajiny České Republiky: Prague, Czech Republic, 2016; 83p.
21. Golgher, A.; Callisto, M.; Hughes, R. Improved Ecosystem Services and Environmental Gentrification after Rehabilitating Brazilian Urban Streams. *Sustainability* **2023**, *15*, 3731. [\[CrossRef\]](#)
22. Theodosiou, G.; Panajiotidis, S. The Impact of Urban Land-Use Regimes on the Stream Vegetation and Quality of a Mediterranean City. *Hydrology* **2023**, *10*, 45. [\[CrossRef\]](#)
23. Lepeska, T. Vybrané krajinnokoekologické problémy urbánnych povodií. *Geogr. Rev.* **2013**, *9*, 279–290.
24. Lepeska, T. Úloha ekohydrologie pri ochrane a posilnení ekosystémových služieb v urbánnych povodiach. In Proceedings of the Environmentálne Indexy, Agroenvironmentálne Opatrenia a Ekosystémové Služby v Krajine, Bratislava, Slovakia, 27 November 2013; pp. 97–106.
25. Bašová, S.; Štefancová, L. Zážitková scéna urbánnej vegetácie nábreží. In Proceedings of the Krajinná Architektúra a Krajinné Plánovanie v Perspektíve, Bratislava, Slovakia, 1–2 October 2015.
26. Bašová, S.; Sopirová, A. Interactive spaces for contacts of cities with a watercourse. In Proceedings of the SGEM 2018, 5th International Multidisciplinary Scientific Conference on Social Sciences and Arts, Albena, Bulgaria, 26 August–1 September 2018.
27. Hanáček, T. Bratislava—Verejné priestory rieky. *ALFA* **2015**, *20*, 44–55.
28. Prominski, M.; Stokman, A.; Stimberg, D.; Voermanek, H.; Zeller, S.; Bajc, K.; Zheng, N. *River Space Design: Planning Strategies, Methods and Projects for Urban Rivers*, 3rd and enlarged ed.; Birkhäuser: Berlin, Germany; Boston, MA, USA, 2023; 356p.
29. Wantzen, K.M. River culture: How socio-ecological linkages to the rhythm of the waters develop, how they are lost, and how they can be regained. *Geogr. J.* **2022**, *190*, e12476. [\[CrossRef\]](#)
30. Hong, C.-Y.; Chung, E.-S.; Chang, H. The Right to Urban Streams: Quantitative Comparisons of Stakeholder Perceptions in Defining Adaptive Stream Restoration. *Sustainability* **2020**, *12*, 9500. [\[CrossRef\]](#)
31. Wantzen, K.M.; Piednoir, T.; Cao, Y.; Vazhayil, A.M.; Tan, C.; Kari, F.G.; Lagerström, M.; Gerner, N.V.; Sommerhäuser, M.M. Back to the surface—Daylighting urban streams in a Global North–South comparison. *Front. Ecol. Evol.* **2022**, *10*, 838794. [\[CrossRef\]](#)
32. Fitzsimmons, M.J. Rediscovering Nature: Daylighting an Urban Stream (Gwynns Run, Baltimore, Maryland). Master's Thesis, University of Maryland, College Park, MD, USA, 2004.
33. Koshaley, D.H. Developing Eligibility Criteria for Daylighting Streams as Applied to Dallas' Mill Creek. Ph.D. Thesis, The University of Texas, Arlington, TX, USA, 2008.
34. Spirn, A.W. Restoring Mill Creek: Landscape Literacy, Environmental Justice and City Planning and Design. *Landsc. Res.* **2005**, *30*, 395–413. [\[CrossRef\]](#)
35. Spirn, A.W. The Nature of Mill Creek: Landscape Literacy and Ecological Democracy. In *Pragmatic Sustainability*, 2nd ed.; Steven, A.M., Ed.; Routledge: London, UK, 2016; pp. 172–189.

36. Illés, J. Mlynské náhony—Potenciál pre súčasné regeneračné stratégie mesta. In *Point for Science 3: Proceedings of Doctoral Research*; Legény, J., Rosinová, L., Benkovičová, L., Eds.; Spektrum STU: Bratislava, Slovakia, 2022; pp. 68–69.
37. Illés, J.; Joklová, V.; Jaszczak, A. Traces of former mill races in Krnov: Possibilities of revitalization and interpretation. *ALFA* **2023**, *28*, 36–46. [\[CrossRef\]](#)
38. Illés, J.; Kristiánová, K.; Joklová, V. Mill Races as Historical Sources of Hydropower and their Potential Today—Examples from Slovakia. In *Proceedings of the WMCAUS 2022, Prague, Czech Republic, 5–9 September 2022*.
39. Bartošiková, T. (Ed.) *K Dejinám Mlynov—Výskum a Mapovanie. Zborník zo Seminára K Dejinám Mlynov—Výskum a Mapovanie, Pamiatkový Úrad Slovenskej Republiky a Vodné Mlyny Oblazy, N.O., Online, 14 October 2021*; Pamiatkový úrad Slovenskej Republiky: Bratislava, Slovakia, 2023; 136p.
40. Forum Gdańsk/SUD Polska. 16 August 2019. *ArchDaily*. Available online: <https://www.archdaily.com/909887/forum-gdansk-sud-polska> (accessed on 23 June 2024).
41. Lorens, P.; Habier, M. Impact of large-scale urban interventions on contemporary city centers. In *Proceedings of the 54th ISOCARP Congress 2018, Bodø, Norway, 1–5 October 2018*.
42. Czarnecki, A.; Luc, M.; Lewandowska-Czarnecka, A. Wykorzystanie cech i zasobów środowiska w tworzeniu krajobrazu miast usytuowanych w dolinach rzecznych na przykładzie Torunia. In *Studia Krajobrazowe a Ginge Krajobrazy*; Chylińska, D., Łach, J., Eds.; Uniwersytet Wrocław: Wrocław, Poland, 2010; pp. 137–150.
43. Offenburg, Mühlbachareal 2016. Available online: <https://faktorgruen.de/offenburg-muehlbachareal/> (accessed on 23 June 2024).
44. Die Geraaue—Stadtentwicklung im Rahmen der Buga. Erfurt.de—Das Offizielle Stadtportal der Landeshauptstadt Thüringens. Available online: <https://www.erfurt.de/ef/de/leben/planen/projekte/buga2021/noerdliche-geraaue/index.html> (accessed on 23 June 2024).
45. Abbruch Lederfabrik und Nachnutzung als Mühlenpark. Freital. Available online: <https://www.freital.de/Unsere-Stadt/Informationen-zur-Stadt/Stadterneuerung/index.php?La=1&object=tx,3303.114.1&kat=&sub=0> (accessed on 23 June 2024).
46. Tolarová, I. Mlýnská Strouha je Parkem Roku. *Správa Veřejného Statku Města Plzně*. 25 October 2010. Available online: <https://svsmp.cz/archiv/2010/mlynska-strouha-je-parkem-roku/> (accessed on 23 June 2024).
47. Hudačko, L. V Prešove Máme Nový Cyklochodník Mlynský Náhon: Pribudnú aj Stojany na Bicycle. *Dnes 24 Prešov*. 21 May 2020. Available online: <https://presov.dnes24.sk/v-presove-mame-novy-cyklochodnik-mlynsky-nahon-pribudnu-aj-stojany-na-bicykle-361992> (accessed on 23 June 2024).
48. Mill Race: Flow of Change. Cultural Programme, Lancaster. Available online: <https://visitlancaster.org.uk/attractions/mill-race-flow-of-change/> (accessed on 23 June 2024).
49. Illés, J.; Kristiánová, K. Rivers as backbones for urban and periurban recreation—Case studies from Košice and Prešov, Slovakia. In *Proceedings of the Public Recreation and Landscape Protection—With Environment Hand in Hand? Křtiny, Czech Republic, 9–11 May 2023*.
50. Prešovský Kraj—Characteristic of the Region. Available online: [https://slovak.statistics.sk/wps/portal/ext/themes/regional/presovsky%20kraj/about!/ut/p/z1/jZFLb4JAFIV\\_iwu2zIEBZuhupBFpqBV5SGfToKFIw8Mglb9fqm6atNS7u8l3vtzcQyRjiWyyc1lkfdk2WTXur9J6S\\_w1n881AZdFGzVKowTHtDngJHtBXBcsTSYD3DfNeGJZbyxA0ohKJH35PHHCNy](https://slovak.statistics.sk/wps/portal/ext/themes/regional/presovsky%20kraj/about!/ut/p/z1/jZFLb4JAFIV_iwu2zIEBZuhupBFpqBV5SGfToKFIw8Mglb9fqm6atNS7u8l3vtzcQyRjiWyyc1lkfdk2WTXur9J6S_w1n881AZdFGzVKowTHtDngJHtBXBcsTSYD3DfNeGJZbyxA0ohKJH35PHHCNy) (accessed on 4 May 2024).
51. Marhefka, P. *Putovanie Históriu Mesta Podolíneč*, 1st ed.; Mesto Podolíneč: Podolíneč, Slovakia, 2002; 107p.
52. Moja Obec v Štatistikách—Podolíneč. Available online: <https://mojaobec.statistics.sk/html/sk.html?obec=SK041A526975> (accessed on 4 May 2024).
53. Pamiatková Rezervácia v Meste Podolíneč—Zásady Ochrany Pamiatkového Územia. Krajský Pamiatkový Úrad Prešov. 2010. Available online: <https://www.pamiatky.sk/page/zasady-ochrany-pr-podolinec/> (accessed on 4 May 2024).
54. de Oliveira, J.A.P.; Bellezoni, R.A.; Shih, W.Y.; Bayulken, B. Innovations in Urban Green and Blue Infrastructure: Tackling local and global challenges in cities. *J. Clean. Prod.* **2022**, *362*, 132355. [\[CrossRef\]](#)
55. Palliwoda, J.; Haase, A.; Suppee, C.; Rink, D.; Priess, J.A. Visions for development and management of urban green and blue infrastructure: A citizen's perspective. *Ecol. Soc.* **2022**, *27*, 2. [\[CrossRef\]](#)
56. Nowacki, M. Heritage Interpretation and Sustainable Development: A Systematic Literature Review. *Sustainability* **2021**, *13*, 4383. [\[CrossRef\]](#)
57. Uzzell, D.L. Creating place identity through heritage interpretation. *Int. J. Herit. Stud.* **1996**, *1*, 219–228. [\[CrossRef\]](#)
58. Meissner, M. The valorisation of intangible cultural heritage. In *Intangible Cultural Heritage and Sustainable Development: The Valorisation of Heritage Practices*; Heritage Studies; Springer: Cham, Switzerland, 2021; pp. 145–172. [\[CrossRef\]](#)
59. Riganti, P.; Nijkamp, P. Valuing Cultural Heritage Benefits to Urban and Regional Development. In *Proceedings of the 44th Congress of the European Regional Science Association: Regions and Fiscal Federalism, Porto, Portugal, 25–29 August 2004*. Available online: <https://www.econstor.eu/handle/10419/117122> (accessed on 23 May 2024).
60. Jato-Espino, D.; Capra-Ribeiro, F.; Moscardó, V.; Bartolomé del Pino, L.E.; Mayor-Vitoria, F.; Gallardo, L.O.; Carracedo, P.; Dietrich, K. A systematic review on the ecosystem services provided by green infrastructure. *Urban For. Urban Green.* **2023**, *86*, 127998. [\[CrossRef\]](#)
61. Veerkamp, C.J.; Schipper, A.M.; Hedlund, K.; Lazarova, T.; Nordin, A.; Hanson, H.I. A review of studies assessing ecosystem services provided by urban green and blue infrastructure. *Ecosyst. Serv.* **2021**, *52*, 101367. [\[CrossRef\]](#)

62. Zhang, S.; Ramírez, F.M. Assessing and mapping ecosystem services to support urban green infrastructure: The case of Barcelona, Spain. *Cities* **2019**, *92*, 59–70. [CrossRef]
63. Haase, D.; Larondelle, N.; Andersson, E.; Artmann, M.; Borgström, S.; Breuste, J.; Gomez-Baggethun, E.; Gren, Å.; Hamstead, Z.; Hansen, R.; et al. A quantitative review of urban ecosystem service assessments: Concepts, models, and implementation. *Ambio* **2014**, *43*, 413–433. [CrossRef]
64. Luederitz, C.; Brink, E.; Gralla, F.; Hermelingmeier, V.; Meyer, M.; Niven, L.; Panzer, L.; Partelow, S.; Rau, A.L.; Sasaki, R.; et al. A review of urban ecosystem services: Six key challenges for future research. *Ecosyst. Serv.* **2015**, *14*, 98–112. [CrossRef]
65. La Bara, L.; Fiorani, G.; Litardi, I. Valorization of Historical and Cultural Heritage: A Strategy of Sustainable Growth. In Proceedings of the Conference Strategica—Challenging the Status Quo in Management and Economics, Bucharest, Romania, 11–12 October 2018.
66. Dümcke, C.; Gnedovsky, M. *The Social and Economic Value of Cultural Heritage: Literature Review*; European Expert Network on Culture (EENC): Barcelona, Spain, 2013; pp. 1–145. Available online: [https://web.archive.org/web/20220120173612id\\_/https://www.interarts.net/descargas/interarts2557.pdf](https://web.archive.org/web/20220120173612id_/https://www.interarts.net/descargas/interarts2557.pdf) (accessed on 23 May 2024).
67. Königreich Ungarn (1782–1785)—First Military Survey. Available online: <https://maps.arcanum.com/en/map/firstsurvey-hungary/?layers=147&bbox=2111707.6266405312,6019831.665236833,2140734.5881318273,6030399.084397258> (accessed on 4 May 2024).
68. Hungary (1819–1869)—Second Military Survey of the Habsburg Empire. Available online: <https://maps.arcanum.com/en/map/secondsurvey-hungary/?layers=5&bbox=2114100.105625749,6021019.156812124,2128613.586371397,6026302.866392337> (accessed on 4 May 2024).
69. Habsburg Empire (1869–1887)—Third Military Survey (1:25,000) (1869–1887). Available online: <https://maps.arcanum.com/en/map/thirdsurvey25000/?layers=129&bbox=2114252.9796822504,6020594.761835113,2128766.4604278984,6025878.471415326> (accessed on 4 May 2024).
70. *Cadastral Maps of the Original Cadastral Record from 1871, Reambulated in the 1930s (1:2880)*; Sp 159, map no. 19, 20, 22; Central Archive of Geodesy and Cartography: Bratislava, Slovakia, 1871.
71. Topographic Map 1:25,000. 1955. Available online: <https://www.staremapy.sk/?zoom=16&lat=49.2533396488108&lng=20.532398158167698&map=SR1952> (accessed on 4 May 2024).
72. Topographic Map 1:5000. 1958. Available online: <https://www.staremapy.sk/?zoom=16&lat=49.2533396488108&lng=20.532398158167698&map=TM5> (accessed on 4 May 2024).
73. Topographic Map 1:10,000. 1964. Available online: <https://www.staremapy.sk/?zoom=16&lat=49.2533396488108&lng=20.532398158167698&map=SRTM10> (accessed on 4 May 2024).
74. State Map Derived 1:5000. 1980. Available online: <https://www.staremapy.sk/?zoom=16&lat=49.2533396488108&lng=20.532398158167698&map=SMO52> (accessed on 4 May 2024).
75. Basic Topographic Map 1:10,000, Approx. 1990. Available online: <https://www.staremapy.sk/?zoom=16&lat=49.2533396488108&lng=20.532398158167698&map=gkubazm10> (accessed on 4 May 2024).
76. Current Cadastral Map. Available online: <https://zbgis.skgeodesy.sk/mapka/sk/kataster?pos=49.253751,20.533361,16> (accessed on 4 May 2024).
77. Územný Plán Mesta Podolíneč. Available online: <https://www.podolinec.eu/uzemny-plan-mesta/> (accessed on 4 May 2024).
78. Ortofotomozaika. 2022. Geoportál GKÚ. Available online: <https://zbgis.skgeodesy.sk/mapka/sk/zakladna-mapa?pos=49.253751,20.533361,16> (accessed on 4 May 2024).
79. Augustínková, L.; Páclová, H. *Vodní dílo Nečíz v Litovli*; Agriprint Olomouc: Olomouc, Česká Republika, 2021; pp. 100–101.
80. Tomášková, H. Jak v Chrudimi Probíhala Revitalizace Vodních Toků v Urbanizovaném Prostředí. 2021. Available online: <https://www.komunalniekologie.cz/info/jak-v-chrudimi-probihala-revitalizace-vodnich-toku-v-urbanizovanem-prostredi> (accessed on 23 June 2024).
81. Tkac, S. Košice millrace, a unique historical waterwork has been bonding the technological advances and culture for centuries. In Proceedings of the 3rd Forum on Asian Industrial Heritage Conservation Bulletin, online, 27–28 October 2020; pp. 41–44.
82. Na Mieste Bývalého Mlynského Náhonu vo Veľkom Šariši sa Nachádza Nová Cykloaleja. Available online: <https://www.kosiceonline.sk/na-mieste-byvaleho-mlynskeho-nahonu-vo-velkom-sarisi-sa-nachadza-nova-cykloaleja> (accessed on 23 June 2024).
83. Kolarz, M. Studie Nádvoří Zámku Krnov. 2006. Available online: <https://www.zamekkrnov.cz/o-spolecnosti/> (accessed on 23 June 2024).
84. Łabuz, R. The area of Kossak Square—A public space at the Młynówka Królewska Mill Race—In the Context of Its Historic, Cultural and Natural Assets. In *Topiarius 4 Landscape Studies*; University Rzeszów, Faculty of Biology and Agriculture: Rzeszów, Poland, 2017; pp. 117–129.

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